ESAWAS REGULATORS ASSOCIATION

CITYWIDE INCLUSIVE SANITATION SERIES

Responsibilities | Accountability | Resourcing

Citywide Inclusive Sanitation: How can resourcing be managed effectively?

In collaboration with: WSUP Water & Sanitation for the Urban Poor | BLUECHAIN CONSULTING | URBAN RESEARCH

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Cover image: Wastewater treatment plant, Addis Ababa, Ethiopia. Photo Credit: Chris Terry.

Image: FSM operators in Lusaka, Zambia.

1.0 Introduction

1.1 The three functions of Citywide Inclusive Sanitation

This publication forms part of a series looking at Citywide Inclusive Sanitation in terms of three closely related requirements for achieving safe, inclusive and sustainable urban sanitation: clear responsibility, strong accountability, and fit-for-purpose resource planning and management (Figure 1). Responsibility defines what entity has a mandate to deliver a service. Accountability mechanisms are then required to make sure that mandated responsibilities are fulfilled. Effective resource planning and management are required to so that mandated entities are sufficiently resourced to be able to fulfil their mandate. These three functions (responsibility, accountability, resource planning and management) are introduced in three short initial publications released in May 2021. This paper is one of three complementary publications that explain these functions in more detail, on the basis of specific case studies: this publication focuses on resource planning and management.

Figure 1: CWIS Framework

Service Outcomes	**EQUITY** 'Fairness' in distribution and prioritization of service quality, service prices, and public finance/subsidies	**SAFETY** Human waste is safely managed to protect public goods	**SUSTAINABLITY** Resources and revenues sustain performance
System Functions	**RESPONSIBILITY** Authority or authorities have clear mandate for ensuring inclusive, safe sanitation services	**ACCOUNTABILITY** Performance is transparently monitored and managed with +/- incentives	**RESOURCE PLANNING & MANAGEMENT** Resources are managed to support implementation of mandate and achieve goals across time / space

Citywide Inclusive Sanitation as public service

Formal urban sanitation systems by and large focus on financing and managing piped sewerage infrastructure. In many urban contexts, these sewer systems are missing entirely; where they exist, they reach limited areas of the city, do not serve vulnerable informal communities, and are threatened by climate change, age, and inadequate or inconsistent water or energy supplies. Meanwhile, non-sewered sanitation systems (based around pit latrines, septic tanks or container-based solutions) are generally treated as a household responsibility to be addressed by private sector product and service providers.

But safe inclusive urban sanitation fundamentally protects the public goods of public health and the environment, irrespective of the hardware used to meet that need. The uncoordinated market actions of private sector and household decision makers in aggregate will fail to protect public health, safety, or inclusivity outcomes. Allocating subsidized public finance to a narrow market segment has often led to use of public funding that is both inefficient and inequitable, as it disproportionately excludes the poorest from the benefit of public subsidies. So there is an urgent need for institutional systems that incentivize city-level improvements in safe containment, emptying, transportation and treatment of fecal waste, including mechanisms designed explicitly to reach the poorest with equitably financed safe services and which protect the health and environment of the most vulnerable communities.

Recognizing sanitation as a public good does not imply that the public sector has sole responsibility. The private sector can play key roles within a publicly managed system. In fact, a well-structured and regulated sector can increase business opportunity and incentivize innovation to meet health and inclusivity goals.

In a complementary short publication (ESAWAS, 2021), we provided a brief initial overview of resource planning and management in the context of Citywide Inclusive Sanitation. The short publication introduces the component of a financing framework countries and cities need to support resource planning and management and highlights some of the challenges that poor alignment of financial and operational decision making can have on achieving results. In this publication, we explore these issues in greater depth, drawing particularly on the experience of seven countries: Bangladesh, Kenya, Mozambique, Senegal, Uganda, and Zambia. In order to gain a good understanding of the situation in these countries, we conducted expert respondent interviews for each country. In addition, references have also been taken from sector literature on experiences in Cambodia, China, Ethiopia, India, Nepal and the Philippines.

1.2 Why is resource planning and management important?

Given climate change, urbanization, and aging infrastructure, urban sanitation services are increasingly difficult to deliver, yet even more critical to city resilience. The concept of Citywide Inclusive Sanitation was proposed to address an urgent growing need to focus public and especially government attention on the need to shift priorities from narrow, expensive and limited infrastructure-investment focused “solutions” to service-focused-mandates, accountability systems, and resource planning and management.

To understand how to change and improve systems, we start by seeking to understand the incentives of key actors. With that foundation, we can then identify what institutional changes are needed to incentivize those actors — citizens, private companies, and public agencies — to continuously be finding ways to deliver and improve services in the context of a city’s constantly changing resource levels, challenges, and needs. To understand incentives around public services in any city-country context, there are three fundamental questions to ask:

- Who is responsible for what outcomes?
- How are they held accountable for that responsibility?
- How are they resourced to plan and manage their responsibility?

These questions are helpful, because they trigger a deeper interrogation of incentive structures that must be understood for designing interventions, whether financial, legal, or social in nature. They are foundational questions around which others can be organized.

Resource planning and management covers the allocation, distribution, spending and monitoring of resources (financing, assets, and people) across time and place. Ensuring resources are effectively allocated and used to delivery urban sanitation services requires the engagement of multiple actors and is explicitly linked to the other CWIS functions – responsibility and accountability.

As set out in the other publication, expectations can often be placed on public agencies to deliver sanitation services that are outside their legal mandate and therefore beyond their legal ability to collect and use revenue or finance for activities. In those scenarios, accountability

mechanisms and finance are not shaping or strengthening fundamental service delivery systems.

The allocation of resources requires a clear understanding of resourcing needs, as well as a local technical and absorption capacity. Furthermore, to hold those responsible for urban sanitation service delivery (service authorities) accountable they must have access to sufficient resources. To achieve this investment planning and prioritization processes should be clearly documented, transparent, and engage relevant stakeholders. Where effective performance incentives can be established, such systems can foster service authority capacity, responsiveness, and innovation.

1.3 Definitions, methodology and structuring questions

The paper has reviewed resource planning and management systems and approaches across both the sanitation service chain and different tiers of government. As set out in the publications on responsibilities in this series, the mandate for urban sanitation resides with one of two institutions: the local government (often municipal authorities); and the utility, which may be publicly or privately owned. In addition, the mandate structure can be distinguished across the supply chain, i.e., if responsibilities for sewered and non-sewered sanitation are integrated, and so jointly held by one institution, or split between the utility and local government. Where these mandates sit impacts the stakeholders engaged in decision making related to resource planning and also the approach to resource mobilization and management.

Furthermore, resource planning and management is also impacted if the jurisdiction of service authority is at the national, regional or city level. Fiscal decentralization is the transfer of responsibility for expenditure and revenue collection in support of service delivery. Fiscal decentralization can typically be divided into one of three main models. ***Deconcentration*** in which central government establishes regional branch offices for service delivery, but power and decision-making still sit with the central government. Under ***delegation***, central governments transfer responsibility for services to local governments. While local governments have increased control, they remain accountable to the central government. Finally, ***under devolution***, full authority is transferred to quasi-autonomous local governments. Fiscal decentralization can be further divided into ***expenditure decentralization*** – the level of autonomy local government has regarding spending decisions for service delivery – and ***revenue decentralization*** – the ability of local governments to collect taxes, tariffs, and other revenues in support of these expenditures.

Who is this publication aimed at?

Who is this publication aimed at? The target audience for this publication is wide-ranging, including regional Water, Sanitation and Hygiene (WASH) fora, national-level policy makers, city-level decision makers, development agencies, funding agencies and other WASH professionals. However, the authors consider the paper may be particularly useful for decision-makers at the policy level, including (for example) senior technical staff within national ministries. The primary audience further includes senior and mid-level staff in regulatory agencies and city-level sanitation authorities.

The global mapping to inform this publication was conducted through a desk-based document review, incorporating country studies, consultancy reports, conference papers and journal articles. This was supplemented through discussions with global and country-level experts. Our core reference points in determining how resource planning and management are undertaken in the focus countries were national-level policy documents, frameworks and strategies. Drawing on the above, the overall paper aimed to respond to four core structuring questions:

- Looking across countries, how is finance for urban sanitation planned and spent, and how do financing frameworks support or the lack of them hinder these processes?
- How do sector financing norms contribute to or exacerbate equity and efficacy in the use of scarce resources?
- How does the relationship between financial decision making and operational responsibility for urban sanitation impact the financial viability of investments and the effectiveness of service delivery?
- How does the structure and effectiveness of accountability mechanisms impact the targeting (equity), use and effectiveness of finance?

1.4 Publication Structure

The publication is structured as follows:

– **Section 2** sets out the components that should be included in a financing framework for CWIS.
– **Section 3** presents the gaps and issues in relation to financing frameworks for CWIS, these findings are grounded in the first-hand perspectives of our expert informants working within regulators and city-level authorities.
– **Section 4** discusses some of the emerging findings relating to key issues around resource planning and management for urban sanitation.
– **Section 5** presents a summary of overarching conclusions, aimed primarily at national-level policymakers within Ministries, city-level decision-makers, regulators and donors.

Image: Wastewater transportation trucks, Addis Ababa, Ethiopia. Credit: Chris Terry.

2. Components of a CWIS Financing Framework

Drawing on examples from the countries reviewed, this section reviews the key components to financing frameworks for CWIS and how they should be organized. While it is reasonably well accepted that clearly articulated financing frameworks provide a strong foundation for planning, mobilizing, and management of sector resources, in many contexts financing frameworks lack some of the key components to enable them to guide investments and support the achievement of results in an equitable manner.

Financing frameworks are not normally a single document, but as set out in Figure 2, a robust financing framework is made up of several elements. A precondition to developing a financing framework includes clearly articulated sector priorities targets and responsibilities, set out in sector strategies and policies. Further to these they need to include components that support the assessment and diagnostic of financial needs and revenue sources, as well as strategic elements that guide the allocation and flow of finance. Stronger monitoring has the potential to lead to investment effectiveness gains and more equitable outcomes. Ideally these different elements would be built 'bottom up' from plans developed by local authorities and/or utilities using their own data systems that support service delivery locally but are guided by national (or state) powers to also inform accountability and finance. The sections below set out some of the key components of financing frameworks and draws on examples from the focus countries and the wider sector context.

Figure 2: Financing Framework Development and Planned Outcome

Assesment & Diagnostic	Strategy & Monitoring	Outcomes
• Sector Policies & Targets • Establishing Costs • Financing Needs • Identifying Sources • Stakeholder Engagement • Risk Assessment	• Investment Plan • Financing Prinicples • Financing Flows & Mechanisms • Moblisation of Resources • Monitoring for results	• Appropriate use of Finance • Attainment of Investment Outcomes • Scalability of Financing Models • Sustainablity of Finance

2.1 Sector Strategies/Policies – priorities and targets

National strategies and policies that clearly articulate urban sanitation as a priority, sector targets, and responsibilities of different actors provide a strong foundation for investment planning and allocation, and the broader components of a financing framework. AMCOW's sanitation policy assessment report (AMCOW, 2019) made clear recommendations on the need to more systematically link sector strategies and policies with urban sanitation financing needs and approaches. While such documents will not alone enable effective resource planning and management, they provide the direction for more detailed financial strategy development and planning.

Urban sanitation strategies, endorsed at the highest level of government, provide a critical reference point for the prioritization of finance to urban sanitation during budgeting processes, especially where there is competition for scarce resources. The Asian Development Bank's (ADB) review of urban sanitation investments (ADB, 2018) noted that national campaigns to raise awareness of the benefits of investments in urban sanitation to public health and the environment create conditions for successful investments.

Government commitments to the sector should be backed up with targets and key performance indicators (KPI) to measure progress and act as a means of accountability for investment decisions. Targets and KPIs have also been demonstrated to be an effective tool to support a more strategic approach to resource allocation, performance monitoring and the targeting of poor communities. For a strategy to align with and contribute towards an active shift to CWIS principles, it would be important to ensure the CWIS outcomes (equity, safety and sustainability) are reflected in the strategies' priorities and targets.

2.2 Understanding of Costs and Financial Needs

Financial and economic analyses form a crucial part of guiding the financing of the urban sanitation sector, and should incorporate, or at minimum align with, national strategies and targets. Such analysis enables decision makers to measure the costs and potential revenues of urban sanitation service delivery across the supply chain and to allocate limited resources more efficiently. Thorough financial analysis enables decision makers to measure the costs and potential revenues of urban sanitation service delivery. Economic analyses, covering economic costs and benefits, can provide further insights, including on the opportunity costs of the next best use of the resources.

A useful first step in the financial assessment is for national government and service authorities to review the existing financing approaches for urban sanitation service delivery. This should look at existing costs, both capital expenditures (CAPEX) for infrastructure and operating expenditures (OPEX) for service providers, as well as household investments. Other financial cost factors should also be considered, including the impact of foreign exchange, inflation rates and base year of price. Changes in service levels, as well as slippage and leakage, need to be factored into the costing processes.

With a clear understanding of the cost associated with existing infrastructure, good practice would suggest planning processes should identify a range of alternative technical solutions and set out costs of these different alternatives. Urban sanitation infrastructure investments have traditionally focused on sewered systems, wastewater treatment plants and related infrastructure. CWIS places more focus on a broader range of infrastructure to support service delivery across the sanitation service chain with more emphasis on non-sewered sanitation.

Reviewing the financial cost of different sanitation options enables governments, donors and service providers to have a clearer picture of different options, such as onsite solutions versus sewered systems. A mix of sewered and non-sewered technologies, service delivery models and pricing approaches is often necessary to enable investments to be made and service delivered in an equitable manner. Hence a range of costing and financial need scenarios should be considered. While CWIS places a strong focus on outcomes being equitable, safe and sustainable, analysis could also consider quantifiable direct benefits (for example, land value increases and improvements in environmental conditions, water quality, public health) and anticipated indirect benefits, such as an increase in attractiveness to tourists and the business community.

In **Uganda**, strategic financial planning has raised national awareness of hygiene and sanitation, promoted the involvement of district administrators, and improved coordination between the three main responsible ministries. The Sector Investment Plan (SIP) produced in 2004 was the first attempt to produce coherent cost estimates of its aspirations in the WASH sector. Under the SIP total financing needs of the sub-sectors were generated under different scenarios (such as coverage targets, subsidy levels, tariffs, unaccounted-for-water levels, service levels, technology) and with assumptions

about the level of public subsidy available. As a spin-off from the full SIP, a separate sanitation and hygiene financing strategy was developed. This was intended to show clearly how much finance would be required for the "software" elements of meeting sanitation targets and to provide a tool showing the effect of funding deficits and offering an aid to optimal spending of existing budgets. More generally, it provided a national platform on which district and municipality strategies could be developed.

An important factor that often gets missed from financial and costing analysis, is how the sector will harness synergies to reduce total financing needs and maximize the impact of investments. Several costing tools offer support in minimizing duplication and maximizing efficiencies across and within sectors and outcome areas. Dynamic modelling and network analysis tools can help to identify which policies or interventions would have the largest spill-over effects, and support prioritization and focus of costing efforts where this may be required.

2.3 Stakeholder engagement in financial planning processes

A key principle of investment planning processes should be that they are transparent and open to relevant stakeholders. Hence the development of financing frameworks requires the engagement of a range of stakeholders to inform the understanding of the financing landscape and risks, and to participate in the decision-making related to financial needs and allocations. The primary driver of sanitation policies and financial planning generally comes from the national government, irrespective of the entities responsible for the actual planning and delivery of services.

In environments where fiscal decentralization has not taken place or only could be considered as deconcentration, financial planning is primarily driven in a top-down manner by central governments or centralized authorities. Where fiscal decentralization is more advanced through devolution, and where both expenditure and revenue decentralization has taken place bottom-up approaches, driven by autonomous local actors (e.g., local governments, utilities, communities) are more common. Irrespective of the level of fiscal decentralization from a resource planning and management perspective stakeholders need to understand their fiscal responsibilities and planning processes need to

Example of Financial Analysis in Mozambique's Urban Sanitation Investment (World Bank, 2019)

The financial analysis for the ongoing Mozambique urban sanitation investment was based on a cash needs approach excluding depreciation and debt service costs. A sanitation surcharge on water bills was designed to provide the revenue to cover sanitation operation and maintenance costs. The surcharge was taken as 15% which is the amount currently applied in Beira and Quelimane and approved by the regulator (AURA). Households that consume less than 5m3/month would be exempt. This level of surcharge would ensure that Maputo and Tete sanitation entities cover their operating costs for the next 10 years. Quelimane, constrained by low water coverage levels, will have a cumulative deficit of US$1.76 million by the end of the project (year 6) – or 13% of the cumulative municipal budget of US$13.5 million over the same period.

Average monthly household water and sanitation costs are estimated to vary between 2.1 - 4.7% of average household income. This is lower than the 5% rule of thumb used by practitioners as an upper limit of affordability. However, this is not the case for low-income households, with water and sanitation costs varying between 14 to 19% of their average income. This is mitigated by their likely lower than average water consumption and the fact that some 45% of households (which is likely to include low-income households) are exempt from paying the surcharge because of their low water consumption. The sanitation costs alone comprise about 1% of average household income in all the three cities.

The financial analysis also noted that over time calculations would need to be refined to determine how to cover deficits and address affordability issues. A number of opportunities to cover deficits were identified, including the introduction of a higher surcharge for customers with a sewer connection, expanding the revenue base to include HH without water connections, or through the provision of a general subsidy to the sanitation entity. It was also noted that tackling the affordability issue will require targeted subsidies for low-income households, possibly using the Government's own safety net program under the National Institute of Social Action, "Instituto Nacional de Segurança Social" (INAS), or some other measure which reflects households' ability to pay. Whether a general or a targeted subsidy, there will be a need to design a well-defined and transparent transfer arrangement whether from central to LG, from LG to sanitation entity, or from government to household.

be well coordinated across different levels of government.

Where mandates for sewered and non-sewered sanitation are split between the utility and local government there is even greater need for coordination and collaboration during financial planning processes. Where sewered and non-sewered sanitation service delivery is integrated, the planning process is less complicated. However, systems should be put in place to support stakeholders within the investment and financing decision-making process, such as finance ministries, technical ministries and regulators, to work together to review data and diagnostic information, and use this to develop financing plans and approaches. Wider stakeholders, including the private sector, consumer groups and community representatives, should also be provided space to contribute to the planning process that will impact the services they will access, support or finance.

2.4 Risk Assessments

Shocks, crises and disasters can destabilize mobilization and allocation of financing, increasing financing gaps and ultimately undermining existing gains and progress towards targets. For a risk assessment to support a CWIS financing framework, risk related to institutions, mechanisms and actors that are responsible for the mobilization, allocation, spending or investing financial resources, should be considered and reviewed. The aim of the risk assessment is to strengthen the government's and potential investors' (donors and private sector) understanding of risks to sustainable financing of CWIS service delivery, and to support the design of risk-informed financing strategies.

Financial risk assessment should consider a number of factors that could impact a shift to CWIS approach, such as capacity to absorb additional investment, an overreliance on a single or unreliable funding source, and the impact of the required institutional changes. In addition, growth shocks, disasters, and other events outside a country's or city's control can impact cost estimates. Policy simulation tools can help anticipate unexpected changes in policy direction and priorities. As the COVID-19 pandemic has further underlined, financing strategies that do not consider the impact of potential shocks and disasters cannot be sustainable.

2.5 Clear Allocation Criteria and Data-Driven Investment Plans

When a government makes funding decisions for public services, there is a significant risk of under-investing in some areas and over-investing in others. Clear and transparent allocation criteria can address this and enable governments to build in mechanisms to support the implementation of strategic directions set out in policies, such as focus on specific geographic areas to address inequality or on soft infrastructure, such as customer service, billing, and asset management systems.

Investment plans, where allocation criteria are clearly set out, are a critical element of an effective and transparent financing framework. Investment plans can make the links between how planned finance for both soft and hard infrastructure fits within the larger goals of improving inclusive sanitation services. Furthermore, such investment plans should identify and prioritize interventions and include who is responsible for the implementation of each of the interventions, and the timeframe for implementation.

The use of relevant data in investment planning can enable greater integrity by ensuring and demonstrating how the allocation and use of resources align with national strategies and policies. The shift to a CWIS approach requireds financial decision makers to have a wider set of data available to them, related to the CWIS outcomes – equity, safety, and sustainability. While tools developed in recent years have produced more data, such as through poverty assessments and "shit-flow-diagrams", and provided greater analysis to inform investment decisions, these tools and resulting analysis needs to be integrated into investment planning and decision-making processes.

By clearly setting out financing principles, allocation criteria and articulating how financing decisions are made, financing frameworks can guide how governments secure and allocate resources to sanitation service authorities. Data-driven investment planning and decision-making can contribute towards increasing transparency and enable investment outcomes to be more effectively monitored.

"Understanding the existing balance of finance from different sources, provides a useful insight into the nature and timescale of shifts in structuring of finance that might need to take place to enable CWIS principles to be implemented."

2.6 Financial Sources & Resource Mobilization

Investment plans should also clarify the nature and sources of financing to achieve and sustain CWIS objectives. This should involve reviewing different financing and revenue options, and outlining potential sources of financing across the taxes, tariffs, and transfers (3Ts). In recent years, development partners have supported governments and service authorities to track and analyse investment and spending trends across the 3Ts. These have included the work by the World Bank on Public Expenditure Reviews (PERs) and UNICEF "WASH Sector Budget Briefs". Understanding the existing balance of finance from different sources, provides a useful insight into the nature and timescale of shifts in structuring of finance that might need to take place to enable CWIS principles to be implemented.

Cost recovery mechanisms are an important component to consider in identifying resource mobilization options, and critical for effective tariff setting and clear understanding of possible revenue streams (e.g., connection charges, sanitation services fees, desludging costs) and of customers' ability and willingness to pay. In line with the CWIS approach, AMCOW's sanitation policy assessment report (AMCOW, 2019) noted that sanitation policies should address financing and cost recovery mechanisms throughout the value chain.

The effectiveness of payment systems, including collection mechanisms, financial management, designation of who pays and who receives payments, and mechanisms for enforcing payments are other factors that should be considered. It is also important to identify which authority has tariff-setting powers, for example, a regulator or other government body, and the extent to which the tariffs are set according to appropriate technical or financial criteria.

2.7 Investment outcome monitoring systems

Clear sector targets provide a strong foundation for planning and monitoring investments; however, these need to be supported with institutionalized performance indicators and monitoring systems to inform decisions on service delivery planning across the CWIS outcomes. For monitoring systems to contribute to an effective CWIS financing framework they need to be able to link targets, input (finance and other resources) and outputs/outcomes. This requires these indicators and systems to be developed in an integrated manner to enable analysis. Furthermore, where data is collected and captured by different institutions, systems need to be developed to enable data to be compiled and analysed real time to inform decision making.

In the urban water sub-sector, performance monitoring systems are well established with institutions like economic regulation and supporting tools like ISO standards[1], benchmarking (such as IBNET[2]), rating tools (Alegre, 2016), and the "utility turn-around" framework (Jason, 2018). In urban sanitation, these concepts have been applied to utility sewerage services or faecal sludge management (FSM), but typically not together within an integrated framework.

Outcome monitoring, based on the SDG indicators, can plausibly be implemented based on national estimates. However, monitoring and aggregating actual services, and tracking the presence and strength of CWIS system functions, require more localized monitoring systems. City-level monitoring indicators and low-cost systems for tracking progress at municipal or utility level are essential for helping authorities plan and improve city-level systems based on actual performance against CWIS targets. While existing monitoring systems to some degree include indicators that look at the CWIS outcomes related to safety and sustainability, systems that track the impact investments have on equity of access to services needs more attention.

1 https://www.iso.org/sdg06.html
2 https://www.ib-net.org/

Table 1: Summary of Countries Progress to Financing Frameworks

	Bangladesh	Kenya	Mozambique	Senegal	Uganda	Zambia
Sector Target & Policies	Yes	Yes	Yes	Yes	Yes	Yes
Urban sanitation investment plans exist	No	No	Partially	No	No	No
Quality of investment data	High	Moderate	Moderate	Low	Low	Low
Transparency of investment data	Moderate	Moderate	Moderate	Low	Low	Low
Clearly identified financial sources	Yes	Yes	Partially	Partially	Partially	Partially
Autonomy of investment decision making	High	High	Mod-High	Low	Mod-High	Low
Professionalization of financing	Partially	Yes	Partially	No	Yes	No
Extent and effectiveness of commercialization of service providers	Low	Moderate	Moderate	Moderate	High	Moderate
Accountability for outcomes	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Notes:
Red no or limited progress towards the indicator
Yellow some level of progress towards the indicator
Green indicator fully or mostly achieved.

2.8 Summary of Country Level Financing Frameworks Status

Based on the review of the case studies countries, Table 1 uses a number of indicators to summarize the countries' progress towards having an effective financing framework in place. It should be noted that the traffic light scoring approach reflects the view of those interviewed and the authors of this report, and therefore only provides an indicative picture of the status of each country's resource planning and management systems.

However, the analysis shows that in the countries reviewed there is significant progress to be made to having an effective CWIS financing framework in place. While the next section highlights some of the common issues and gaps in countries' financing framework, it is worth keeping in mind the following principles that should support the development of an CWIS financing framework:

- **Comprehensive** – supporting consideration of all sources of finance (public, private, domestic, international) as well as global norms and systems, and uses public policy to leverage their contributions.
- **Integrated** – provide a common foundation to discuss and prioritize CWIS spending and investment decisions and policies across different sectors, and to enable a more effective and synergistic use of resources (both public and private), mindful of the trade-offs that may exist.
- **Iterative** – enhancing capacity to maintain a current understanding of the CWIS financing and risk landscapes and facilitating adjustments of financing policies when conditions change.
- **Inclusive** – engaging diverse stakeholders in a meaningful and equitable manner to better reflect CWIS financing needs, challenges and opportunities and to mainstream CWIS priorities, such as pro-poor service delivery and safely managed sanitation service chains.

Image: Poor sanitary conditions in Kalshi slum, Dhaka

3. Common Gaps and Issues with Financing Frameworks

Addressing the urban sanitation challenge with a public service CWIS framework requires a shift in our common understanding of what is needed and what is achievable. This section explores the gaps and issues that were identified during the review of the country case studies in their implementation of financing frameworks for urban sanitation. It should be noted that while some of the countries have made steps toward adopting the CWIS approach, at either national level or in a projectized manner, most of the countries have not yet systematically attempted to shift to the CWIS approach in delivering and financing urban sanitation infrastructure and services.

3.1 Weak alignment between urban sanitation strategies, targets and financing

Traditionally urban sanitation investments have been guided by broader WASH sector or even country financing strategies. These documents have lacked the level of detailed analysis required to provide adequate insight and direction to guide urban sanitation financing decision making. As a result, resource management and planning processes often don't respond to the specific needs of urban sanitation institutional mandates and service delivery requirements. A further issue in the planning process has been highlighted by the fact that few urban sanitation interventions reviewed linked sector targets, coverage, and equity considerations. Too often there is a disconnect between sector policies and targets, and urban sanitation investment allocations. This is further exacerbated when there are no sanitation specific policies or targets in place.

The challenge of ensuring closer linkage between strategies and financing is highlighted in **Mozambique**, where the link between investment planning and budget for government finance is weak. There is little harmonization between long-term strategies, medium-term policies, and annual budgets. This problem is exacerbated by an overall lack of investment plans to prioritize interventions according to resource availability and recurrent cost implications for urban sanitation. This is further complicated beyond urban sanitation since each WASH subsector agency needs to plan its investments needs and financial sources to ensure that the investment plans are linked to (sub) sector strategies. Yet, at the same time, the WASH sector leader needs to coordinate planning and budgeting among the different sub-sectoral agencies, while making explicit sub-sectoral investment decisions and trade-offs between the sub-sectors.

Furthermore, in **Mozambique** the concurrence of many central planning documents for urban water supply and sanitation[3] with additional planning documents at the provincial and local

3 Visao 2025, Plano Quinquenal do Governo, PARPA, PES, MTEF with specific proposals for each institution/agency in the sector, Politica de Aguas, PESA-rural, Programa de Agua Rural

levels, has not facilitated sector investments. The reason for this is that these planning documents differ in their objectives, assumptions, and targets. Hence, better coordination is needed across different levels of governments and service authorities to ensure that the sector has an integrated approach that balances the interests of the different stakeholders and provides clear targets and plans to invest in.

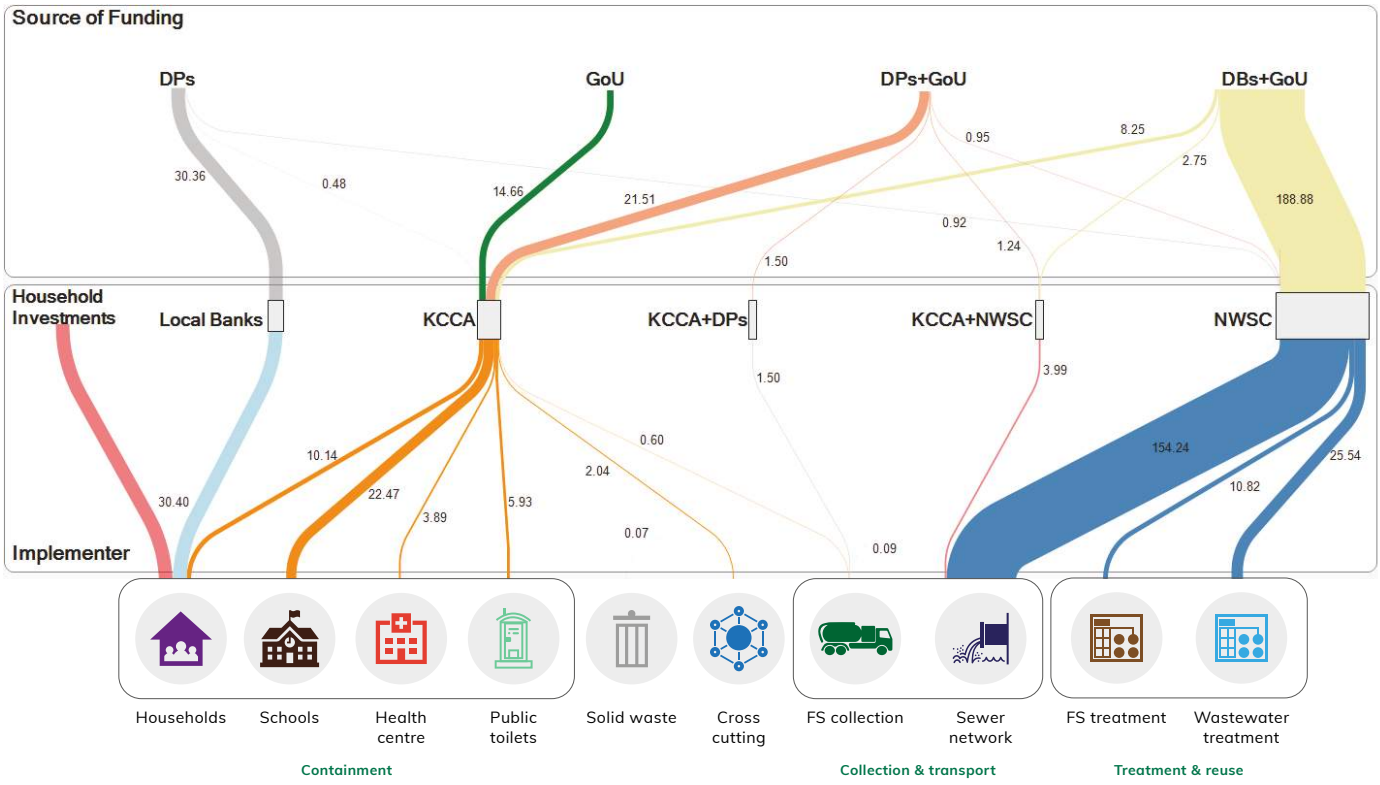
Indonesia provides a useful reminder that development of sanitation financing strategies needs to be more than simply producing documents. Local governments were encouraged to develop City Sanitation Strategies (Strategi Sanitasi Kabupaten/Kota, or SSKs) to meet the national programme goals for delivery of sanitation services. Guidance and manuals were provided from the national level to assist with the preparation of city sanitation strategies. Although the vast majority of cities in Indonesia had produced SSKs, the quality of planning documents produced was low. The lack of clear linkage with national strategies and targets, resulted in the process generating limited new investment.

Uganda provides a positive case in point, where National Water and Sewerage Corporation (NWSC) developed a strategy document that outlines the strategic focus areas for sanitation and environment for the period 2019-2026, including sewer and treatment plant investment. This was built on by Kampala Capital City Authority (KCCA) through the development of the Kampala Sanitation Improvement and Financing Strategy. While a city sanitation master plan exists for Kampala it does not cover non-sewered sanitation. However, KCCA plans to develop a 10-year sanitation service improvement and financing strategy, which has placed more focus on non-sewered sanitation. To further assist in the implementation of this there is a plan to develop both an integrated citywide strategy and action plan in place for sanitation (sewered and non-sewered sanitation) and environment, aligned with the SDGs, and a spatially differentiated service level model to guide investments for sanitation service improvements.

3.2 The existing balance of finance is not always clear

Globally the operation of urban sanitation services across the value chain are funded through a combination of three funding sources (taxes, transfers, and tariffs (3Ts)), depending on how the services are organized. There are different views and preferences about the most appropriate or practicable levels of contribution from different funding sources. However, the optimum mix of financial sources will vary based on the country's context and what is available to governments and service authorities. The dominant view being that upfront costs for infrastructure should be covered through taxes, transfers and/or repayable financing, and operating costs for service provision through tariffs (with subsidies, if required).

Figure 3: Kampala Financial flows to operationalize the strategy



"Poorly managed data hampers decision makers' ability to have a clear understanding of the balance of finance across different sources and how funds flow through the system to deliver services."

However poorly managed data hampers decision makers' ability to have a clear understanding of the balance of finance across different sources and how funds flow through the system to deliver services. While annual government's budget books provide an overview of allocations and planned investment, expenditure reporting is generally weak and hence actual investments are harder to track. Where expenditure reporting does exist detailed disaggregated data on specific allocations is often not available and expenditure on different costs items and activities sits at the local level. Due to missing data, difficulty in comparing data sets and the time intensity of the task this information is rarely aggregated and analysed. This issue is further compounded by split responsibilities for sewered and non-sewered as data is spread across multiple institutions, including local government departments, utilities, and other service authorities. It is also worth noting that for non-sewered sanitation service households provide the majority of finance for the construction of infrastructure and management of services. As data on these household investments are often not available, these contributions are poorly understood and factors into financial planning processes.

The Kampala Sanitation Improvement and Financing Strategy highlights the challenge of identifying existing urban sanitation funding due, in this case, to incomplete information on funding from various development partners. The strategy notes that the current funding for urban sanitation is around US$ 3.0 million per year, of which over 95% of this funding is from non-tax revenue. The strategy estimated the total financing required between 2020-2030 was US$ 271.7 million. It also set out a proposed plan to mobilise funds from a range of sources, including the Government of Uganda, multilateral development banks, and development partners. The strategy has done a reasonable assessment of the flows to different institutions to deliver different services, as seen in Figure 3. Issues with the allocation of funds to different actors and activities are discussed below.

Due to the low priority given to sanitation from national fiscal allocations, countries that rely wholly on government financing (taxes) have been unable to invest at the levels required for sustainable improvement in access to urban sanitation services. From the available data all the countries studied had a high degree of dependence on transfers from development partners finance for urban sanitation. However, in most instances a full and clear picture of external investment is not possible. This is due to some transfers not being publicly reported or it is not possible to disaggregate them, such as between rural/urban, water/sanitation, loans/grants and across cost items (CAPEX/OPEX).

Coordinated and flexible funding arrangements using pool funds have been used in some countries as a mechanism to improve the transparency and efficiency of donor financing, by bringing a greater share of funding on-budget, including through pooled financing. **Ethiopia**'s One WASH National Program (OWNP) is a good example of this, and while not central to its creation, the Ethiopia government is now managing a significant urban sanitation investment supported by a range of donors through OWNP. Pooling donor funding has been seen as a mechanism to strengthen investment prioritization, traceability of funds, and align and improve reporting systems.

Kenya developed a practical concept to scale up improved water and urban sanitation management arrangements and promote investments into 'last mile' infrastructure serving poor people. To this end the Water Sector Trust Fund (WSTF) was established, but it remains highly dependent on development partners, and Kenya does not have a dedicated sanitation fund. Currently major sanitation infrastructure in the country is financed through concessional loans repayable through the tariffs. The percentage of grants for such infrastructure has declined sharply, with the grant component of such financing going to capacity building of the implementing agencies.

In **Zambia** the Devolution Trust Fund (DTF) was a basket financing instrument established in 2003 and supported by the Government of Zambia, KfW, EU and DANIDA. The DTF's aim was to align donor support in a more targeted manner to assist commercial water supply and sewerage utilities through both financial and technical assistance on project implementation and management. It was structured through two financing windows namely General Fund (GF) and Performance Enhancement Fund (PEF). The GF aimed to increase access to safe and adequate water supply and appropriate sanitation for the low-income urban communities, while the objective of the PEF was

"The sector's knowledge of the costs of "soft infrastructure" and other management costs of urban sanitation service delivery remains limited."

to contribute to the operational efficiency and viability of the utilities.

Globally, while transfers from development banks and bilateral donors are the most significant contribution to sanitation financing, smaller donors, and non-government organizations (NGO) also play an important role. While these funds can play an important role in supporting areas where governments or larger donors are unable or unwilling to finance, the sector also lacks effective mechanisms to track and target these resources.

In **Bangladesh,** the NGO community is active and plays an important role in the provision of sanitation services in several cities and Pourashavas. Where the public sector and the large donors have not been able to support solutions, NGOs have stepped in in several ways, from the development of public-private partnerships for inclusive catchment and treatment services in larger cities (WSUP, SWEEP initiative), to operating a treatment plant and collection and transportation services (e.g., AID foundation with backing from SNV in Jhenaidah). While a number of the models for sustainable FSM service provision have arisen from specific NGO-funded projects, the risk of not integrating such funding with local government service provision mechanisms is well demonstrated by the fact that few have lasted after the end of the NGO support.

3.3 Poor understanding of future investment needs

Despite the increase in sector strategies and related investment plans, the lack of reliable budget projections for future years is still a weakness for urban sanitation. The cause of this problem is partly due to the lack of consideration of the recurrent cost implications of investments, which is compounded by the infrequent use of economic and financial tools in strategic planning (based on proposed activities, not linked to budget commitments) to determine the costs and benefits of different investments.

Government and development partners have struggled to establish accurate cost estimates for maintaining sanitation services across the service chain. The construction costs of "traditional" hardware infrastructure (e.g., sewers and wastewater treatment plant (WWTP)) are reasonably well known in most contexts. There continues to be more emphasis on the initial capital expenditure, and inadequate analysis or consideration of operational expenditure. The lack of good data means that those preparing cost estimates for construction appear to underestimate the full costs of long-term operational expenditure.

WaterAid's review of the effectiveness of WWTPs (WaterAid, 2019) highlighted the case of Sihanoukville in **Cambodia**, where a WWTP was constructed with an ADB loan in 2005. The investment cost (US$ 11 million) was paid by the government. In the years after its construction, only around 20% of the targeted households were connected (this requires a one-off connection fee and a monthly wastewater fee). It cost almost US$ 5,500 per connected household based on its expected operating capacity (or US$ 544 per year, based on a 20-year lifespan and discount rate of 8%). The actual construction cost of US$ 27,500 per household ended up being five times the planned cost per household according to a report produced ten years after the plant was constructed.

From a CWIS perspective, the lack of experience in and nature of non-sewered sanitation services means there is an even greater gap in knowledge on the cost associated with delivering sanitation in this manner. Furthermore, the sector's knowledge of the costs of "soft infrastructure" and other management costs of urban sanitation service delivery remains limited. At the centre of these issues is that human resource capacity and sources of revenue to support operations are considered separately from decisions about infrastructure investments. Strengthened financial and investment planning processes that consider life cycle and system development cost can provide a clearer overview of both the finance needed over time and guidance on how resources can be more effectively allocated to different actors and activities to achieve CWIS outcomes in both the short and long term.

3.4 Government tax allocations do not reflect the public service nature of improved sanitation outcomes

Transfer from overseas development aid is likely to remain a significant source of urban sanitation financing in the short term, however this does not come without challenges. A funding mix dominated by transfers risks central governments and service authorities losing control of investment priorities or more damaging, investing in infrastructure without sufficient means to manage and sustain the related services.

While investment in urban sanitation from government taxes is justifiable due to sanitation services being a public good, despite the lack of clarity on allocations due to poor disaggregation of budget and expenditure, evidence shows that governments allocate limited budgets to urban sanitation. This is primarily due to poor political prioritization and the perception sanitation is a private good, especially for non-sewered sanitation. As a result, government allocations are rarely sufficient to cover the cost of installing new or upgrading infrastructure. Where local governments are responsible for sanitation very limited budget allocations are made from revenues raised through local taxes, with an over reliance on revenues from tariffs. In most cases these tax allocations are insufficient to invest in infrastructure expansion.

Bangladesh provides some insights into this issue, as local level budget allocations are highly heterogeneous due to the nature of the decentralized fiscal system. Each municipality sets their own locally levied tax levels and can decide whether to tax separately for water and sanitation services. Taxation at local level is difficult because it is seen as political challenging, however some municipalities are beginning to introduce sanitation taxes: Kushtia for example is looking to introduce a sanitation component to the holding tax it charges government buildings in its catchment area, Jhenaidah on the other hand has already introduced a 5% sanitation tax for all residents.

Across the majority of Pourashavas and City Corporations, Central government allocation is low and flows indirectly to the Pourashava through district bodies, such as the DPHE district office, whilst local tax collection rates are lower (Figure 4). As a result, the FSM services provided, which are often restricted to just collection and transportation, are limited both in quality and in reach, but nonetheless require customers to pay for the service directly to the emptying operators alongside any tax that may be in place.

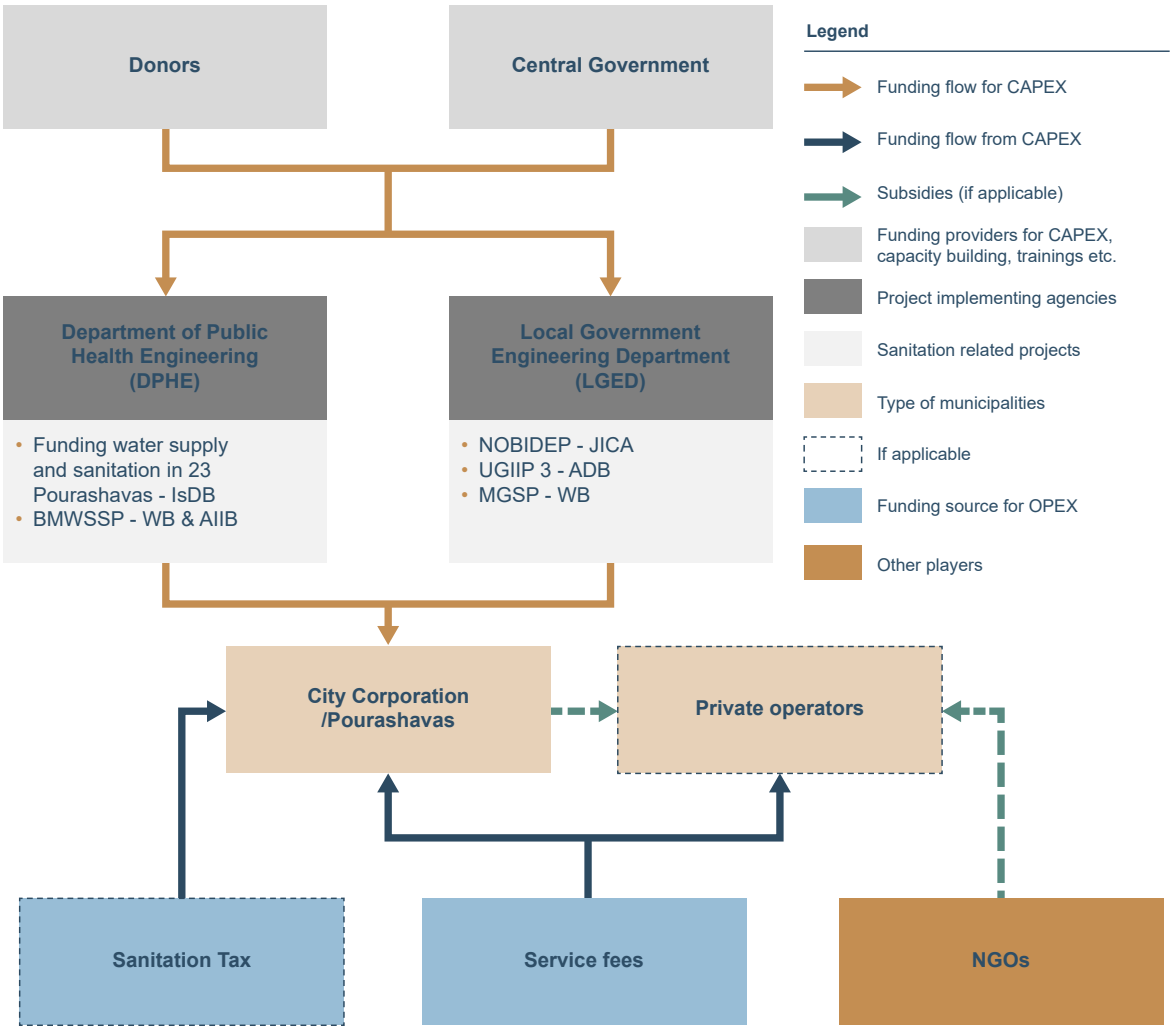
3.5 Tariffs remain an important part of the financing mix, but evidence suggests full cost recovery is infeasible

Despite being widely adopted in sector policies, full cost recovery through tariffs is difficult to achieve when lifecycle and wider system costs are considered. While tariffs remain an important element of the financing mix, moving beyond a financing approach centred around full cost recovery through tariffs is critical if countries expect to advance toward the SDGs. It is especially true if the service authorities are to transition investment plans and service systems to engage in new lines of service required under the CWIS approach, specifically related to non-sewered sanitation services.

While construction costs of sanitation infrastructure, beyond the household level, are often met by central government or donors, operational costs are usually the responsibility of local service authorities. Hence tariffs are typically the main funding mechanism to cover operation costs of the sanitation systems (i.e., sewerage and WWTPs). For those users that discharge into publicly provided sewerage systems, user charges for wastewater are often linked to piped water consumption. Experience from **Kenya** shows that costs for sewerage connections varied substantially among neighbouring households based on the distance to the nearest sewerage line. Costs for connecting to the sewer typically run many times over the price that consumers were willing to pay, thus dampening demand for unsubsidized sewerage connections. In **Lusaka, Zambia**, surveys about residents' willingness to pay provided an initial indication of households' commitment to pay for condominial sewerage service, but customers willingness to pay is fluid and can change based on the operating environment and customer circumstances.

Ideally the pricing of sanitation services should be overseen by an independent regulatory body and based on several factors such as depreciation, operation and maintenance costs, re-investment and profit, but often political pressure also has an impact. However, while **Uganda's** tariffs are determined through a political process, the NWSC tariff is indexed to inflation and key cost drivers, and NWSC has managed to obtain and then retain a relatively high tariff.

Figure 4: Fund Flow for Urban Sanitation Services in Bangladesh



Source: Bill & Melinda Gates Foundation, Financing Mechanism for Municipal FSM Services in Bangladesh, Finance Landscape Scoping Study, January 2020

A common challenge is that wastewater tariffs charged to customers are insufficient to cover the full costs of the operation of urban sanitation systems. In most cases the wastewater tariff is lower than the water tariff, typically structured as a percentage of the water tariff ranging between 30%-80%. In part this is due to wastewater tariffs being bundled into water tariffs and not set out as a specific cost on its own. This is despite the fact that wastewater removal services normally cost more than water supply services. Where tariffs are insufficient to cover operational costs, providers have the option of subsidizing other sources of income, i.e., water tariffs, or reducing operational costs below the levels required for sustainable operation.

In **Bangladesh,** for example, there is a lack of tax revenue at local level to fund operations, and where service provision is paid for by the user, the fees charged (if municipally set) are low. The majority of functioning services are provided with some form of NGO support, except for a few cases, highlighting the need for subsidies or the need to redesign the cost of the service.

In **Kenya**, tariffs for water and wastewater are determined by an independent regulator, WASREB. Until 2018, the tariffs for wastewater were pegged to the price of water. Currently, WASREB requires utilities to apply for distinct water and wastewater tariffs. This has ensured that the tariff for wastewater covers the justified maintenance costs, asset renewal and new CAPEX for wastewater. This has focused attention on maintenance of sewerage systems, rehabilitation and investment in new sanitation infrastructure at the utility level. The CAPEX financed through the wastewater tariff is mostly of small to medium scale, covering areas such as last mile connectivity, replacement of ageing networks and rehabilitation of sewerage treatment plants and mechanical parts.

3.6 Split responsibilities can hamper cross-subsidies for non-sewered sanitation

Combining water and sanitation tariffs in some instances has proven to leverage the willingness of customers to pay for water supplies and can be an effective fiscal tool to cross-subsidize the costs of sanitation services. However, the ability to effectively cross-subsidize sanitation services depend on where the responsibility for water supply, sewered and non-sewered sanitation sits.

Responsibility for water supply and sanitation often falls under the same service authority, and hence a levy on the water tariff provides a mechanism to raise funds for investment in sanitation. Such revenue has proven to be most effective when ring-fenced to support investments in sanitation. One of the earliest examples of such a levy was in **Burkina Faso**, where ONEA (L'Office national de l'eau et de l'assainissement, National Water and Sanitation Authority) established a levy to fund investments in sanitation in 1994.

Globally cross-subsidies have typically been implemented through fixed and variable tariff or increasing block tariff structures, where households that consume smaller amounts of water and generate less wastewater pay less per cubic meter than households that consume more, as a revenue sharing mechanism. However, such subsidies are seldom well targeted to the poor, since they tend not to be connected to the sanitation networks as networks rarely reach poor settlements and where the connection costs tend to be unaffordable.

Where responsibilities for sewered and non-sewered sanitation are split between two services authorities, the opportunity to cross subsidize non-sewered sanitation services is significantly reduced. In cases of split responsibility, the institution responsible for sewered sanitation is mostly also responsible for water. Hence the opportunity for cross subsidizing non-sewered sanitation from water tariffs is also lost. As set out in the examples below in countries where responsible for sewered and non-sewered sanitation are integrated and cross-subsidizing non-sewered sanitation has taken place.

In **Senegal**, Office National de l'Assainissement du Sénégal (ONAS) levies a sanitation surcharge (redevance assainissement) citywide. This surcharge is collected by the water utility, Sénégalaise des Eaux (SDE), through all water bills, with the amount calculated based on the amount of water used and type of consumer (domestic, commercial, industrial, etc.) The proceeds of the surcharge are directed to operating expenditure, primarily expenditure on the sewerage network and wastewater treatment plant. Although ONAS is also reported to allocate resources to non-networked sanitation services in lower-income communities.

Currently **Kenya** is at an advanced stage of adopting a proposed sanitation levy to be collected from consumers through the water bills; this levy will finance sanitation interventions in the country through the utilities. Analysis of the levy indicates that it may not finance major (high value) sewerage infrastructure but will aid in bridging the sanitation gap through decentralized sanitation facilities and last mile sewerage connectivity. In **Zambia**, NWASCO allows utilities who have covered their operation costs to collect a sanitation levy which in theory can be used to offset the costs of less profitable sanitation activities. The sanitation levy is charged to customers and is in addition to the sewerage tariff charged to sewer-connected customers and placed into a "Sanitation Fund". It is currently set between 1.5% and 3% of the water bill, included in the tariff approved by NWASCO. The sanitation levy is ring-fenced to support service provision in low-income areas. The use of these resources is closely monitored by NWASCO, with Utilities requiring authorization for its expenditure.

Mozambique offers some promise in this regard, however, to date only two municipalities, Beira and Quelimane have established a revenue stream for sanitation and signed regulatory framework agreements with AURA. A financial model for sanitation covering the entire service chain for both onsite and reticulated systems is under development by AURA and will inform tariff setting in the next tariff cycle for the sector. However, municipalities will be required to develop by-laws to allow sanitation fees to be charged and collected. A dedicated asset manager responsible for capital investment planning and finance mobilization will also be needed at the municipal level.

Further challenges of split responsibilities are set out in more detail in the parallel publication in this series on Responsibilities.

3.7 Private sector engagement and commercial finance present an opportunity, provided barriers can be overcome

While private investment offers an alternative line of finance for urban sanitation, for many countries and cities it does not pose a realistic immediate solution. Well-informed use of limited public finance, in tandem with appropriate

"Local government's ability to engage with the private sector and access commercial finance in developing countries is often hampered by existing institutional frameworks that prevent such borrowing, and by poor creditworthiness of local government entities."

mandates, accountability frameworks and resource management integrity controls, in the appropriate environment can however allow public finance to crowd in private finance. However potential commercial investors need to be convinced of the opportunity and business case for providing investment to the urban sanitation sector.

To enable this, governments need to set rules and establish systems to encourage and allow public–private partnerships (PPPs) to finance and build infrastructure, and to allow municipalities to contract individually with qualified private sector providers. Local government's ability to engage with the private sector and access commercial finance in developing countries is often hampered by existing institutional frameworks that prevent such borrowing, and by poor creditworthiness of local government entities. While the former issue can be addressed through amendments to policies and regulations, the latter is likely to require improvements to corporate governance and fiscal sustainability of service providers that must be actively reinforced by central governments and regulators. This includes enforcement of government agencies' utility bill arrears and effective due diligence on the commercial viability of taking on additional debt.

As with public finance, well-structured concessional development finance can be used to crowd in private finance, by making loans more affordable for local government and utilities and reducing risk for investors. The concession agreements for wastewater treatment issued by the **People Republic of China's** (PRC) Ministry of Housing and Urban–Rural Development in 2006 are a good example of a national government providing such a framework. As far back as the 1990s, PRC developed a national guideline policy for municipalities to set sanitation tariffs, which paved the way for public–private partnership engagement. The PRC actively supports PSP in urban services, and it has developed standardized concession agreements to expedite contractual arrangements between municipalities and qualified firms.

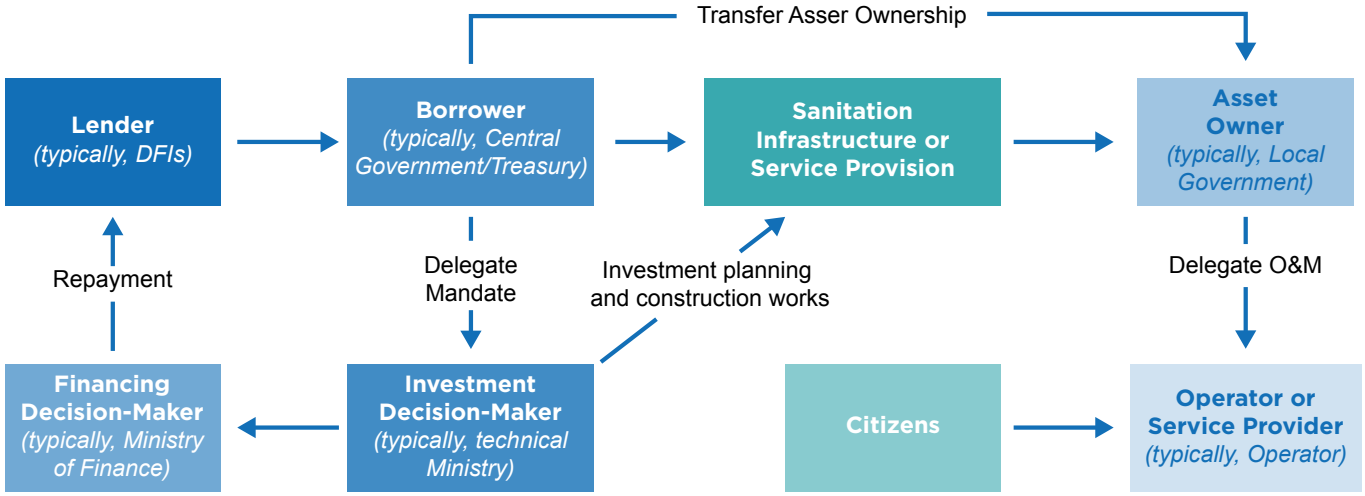
In **Kenya**, the Global Partnership for Result-Based Approaches (GPRDA)[4] urban sanitation initiative[5] showed that commercial lending for sewer programs can be viable from the standpoint of commercial banks, as well as utilities. As long as there is demonstrated cash flow available to the households to service the loans, strong enforcement of customer repayment has proven to be an effective tool to ensure financial sustainability, but this approach requires balance with associated social costs.

In **Senegal**, development partners continue to provide the bulk of funding for urban sanitation service delivery through grants and concessionary loans. A World Water Council report showed that from 2005-2015, 74% of funds mobilized for water and sanitation in Senegal was borrowed from donors. Such significant non-market investments can decrease the financial sector's appetite for structuring commercial transactions with sub-sector actors, hindering progress towards closing the gap for long-term financial resources. In lieu of relying heavily on donor funds, blended finance mechanisms could make efficient use of donor support while supporting sector expansion. When donor and government investment are blended through well-structured programs that combine lower-cost publicly managed repayable loans with higher-cost private capital, commercial investments can be de-risked, and therefore made more attractive to private investors.

In addition to the mobilization of commercial finance, private sector service providers can also bring skills and finance. Conventional wisdom suggests that sanitation services are inherently unappealing for private sector participation because consumers are reluctant to pay for such services. Unlike water supply services, which have "private goods" characteristics that make the sector conducive to tariff-based cost-recovery systems, sanitation has a more complex mix of public and private goods characteristics. However private firms can offer a range of services for decentralized sanitation (septic tank emptying, recycling operations, and latrine construction), but these businesses are often neither adequately regulated nor supported by government institutions. The provision of

4 At the time it was known as the Global Partnership for Output Based Aid (GPOBA)
5 https://www.gpoba.org/activities/urban-water-and-sanitation-oba-fund-low-income-areas-kenya

Figure 5: Illustrative example of financing and investment decision making



finance to small-scale independent providers' and support to firms' efforts to organize themselves more effectively is essential to maximize the individuals and businesses that provide services across the supply chain.

Examples of this included in **Mozambique**, where in most cities private sector participation is limited to informal and unregulated toilet construction and tank emptying. Under the Maputo Per-Urban Sanitation Project (MPSP) private operators, trained and equipped to provide improved FSM services, have now expanded services in other urban areas using their own financial resources. Likewise, in **Lusaka**, the utility is entering into partnership with local emptiers to expand services into the peri-urban areas. Having a conducive regulatory environment is key, especially in the case of application of new technologies. In the same way, policies and strategies to curb pollution can be effective in encouraging private sector participation in sanitation initiatives, as they will provide clear targets to be achieved and strong enforcement of rules governing effluent discharge and treatment. **Uganda** has gone further with the development of private public partnership model with Service Level Agreements (SLAs) to engage private desludging operators with regulation on service quality. Pricing regulation is expected to be integrated into the SLA. With the private sector anticipated to play a larger role in the provision of non-sewered sanitation services, mechanisms are required to better calculate the required investment needed from the private sector, as well as their own financial capacity and investment.

3.8 The misalignment of responsibilities, decision-making and incentives

The flow of funds within urban sanitation interventions has a significant impact on how resources are spent and how stakeholders are held to account. Budgets and expenditure that are controlled centrally risk reducing ownership and accountability amongst local stakeholders, such as municipalities and utilities. However, funds provided to municipalities or utilities without sufficient capacity to manage or use the fund, risks inefficiency and leakage. In **Ethiopia**, the government is following a stepped approach to ensure that participating utilities meet the required technical and institutional capacity prior to receiving investment packages. Other criteria to be met in order to receive investment support includes financial management capacity, for which capacity assessments are undertaken to identify limitations or risks and the mitigation measures.

The legal, policy and institutional arrangements that shape the service delivery sector also shape the range of relevant financing mechanisms. For example, whether local governments are permitted and encouraged to borrow market finance, or to keep the money they raise from taxes. Analysis of country and context specific mandates and accountability structures (see typologies set out in the other parallel papers) provides a useful framing to review the strength of financing frameworks and the appropriateness of different financing mechanisms. A significant challenge that urban sanitation services face is that financing decisions, investment decisions, asset ownership and operations often sit with different stakeholders, as set out schematically in Figure 5.

Typically, the borrower is the national government, with the financing decision maker the Ministry of Finance and the investment decision maker the responsible "technical" ministry. The asset owner is often the local government, with a utility acting as the service provider. In different contexts these roles are played by different actors, in varying combinations, but this provides a useful framework for further analysis.

Professionalization of the investment function is required to effectively develop and implement financing frameworks. Countries which are able to align investment decision making and implementation responsibilities are often found to have the following characteristics – autonomy of action (from direct political influence), professionalism in the planning and implementation of investments, and transparency in how funds are spent with clear reporting on investment outputs and outcomes.

A significant step towards this is the creation or identification of a professional and autonomous financing institution that sets standards for investments. Such an institution could support the sector and place more emphasis on national bottom-up planning and consistent application of financing models. Furthermore, there is some evidence to suggest that if asset development were integrated into the regulatory process, this would greatly enhance continuous monitoring of financing and investments against sector priorities. In **Zambia,** investment planning is undertaken by the operators with strong government support, especially for the weaker utilities.

In **Kenya**, the investment function was separated from operations, and both were professionalized in the early to mid 2000s, when a separate regulator was established. The separation of asset development and operations gave rise to challenges regarding identification and prioritization of assets to be developed, ownership of assets and responsibilities for repayment of the debt that financed the assets. The operators were expected to generate cash flow to finance the loan repayment while the assets remained in the books of the asset developer. Conflicts also arose regarding the value of the assets developed and the failure to develop last mile connectivity which is critical for any asset to be able to generate cash flow for debt repayment. With the onset of a new constitution in 2010, the role for asset development has shifted to the operators who are utilities owned by the county governments.

In **Uganda** progress in this regard has been made largely due to the single national utility (NWSC) assuming responsibility for the

Image: FSM operators in Maputo, Mozambique.

investment function. NWSC is responsible for both investment and operations for sewerage services and facilities for the treatment of faecal sludge. Budget allocation is currently need based, and NWSC's sanitation budget is ring fenced. The KCCA plays an active role in sanitation in the city, coordinating with the NWSC, however, of the total KCCA Water and Environment budget, less than 3% is allocated to sanitation. While NWSC investments are professionalized and made with political support, investment decision-making still relies heavily on funding availability from development partners, especially for non-sewered sanitation. Investment allocations to towns are through a transparent budget process, but the criteria for allocation of funding between NWSC and small towns are not still transparent. While the GoU requires all local authorities to conduct community needs assessment and integrate community needs into the annual planning cycle, this is rarely done properly due to resource constraint.

Investments in urban areas outside of the NWSC take place through the regional Water and Sanitation Development Facilities (WSDFs) that are part of the water ministry. Faecal sludge treatment has recently become part of water and sanitation investments in these outlying areas. Operations in these other towns are supported by regional umbrella organizations. The intention is to create regional utilities to be responsible for operations for the small towns and rural growth centres not falling under the NWSC.

Perspectives on the significance of governance issues in supporting and/or constraining sector performance vary between stakeholders. On the one hand, the NWSC is heralded by many as an excellently performing, professionally managed institution that has delivered good outcomes. By this account, political support is considered to be positive, and independent regulation unnecessary. On the other hand, the relative weakness of the Ministry in its regulation

function and a lack of independent verification of financial and performance data, together with the close political relationship the NWSC enjoys at a high level with the government, is considered by others to pose significant risks to the utility and to future performance and outcomes.

In **Mozambique**, sanitation is under the authority of the Ministry of Public Works, Housing, and Water Resources (MOPHRH). However, a key sector challenge is the lack of clarity on roles and responsibilities for sanitation, especially at the central government level. The National Directorate for Water Supply and Sanitation (DNAAS) is the lead policy agency for urban sanitation, and investment planning and implementation through the Provincial and District Governments. The Administration of Water and Sanitation Infrastructure (Administração de Infraestruturas de Água e Saneamento, AIAS) is the national agency responsible for managing investments in sewerage and drainage infrastructure in all urban settlements. The principle behind Delegated Management Framework (DMF) is the separation of operations, which are delegated to autonomous private sector entities, from asset ownership, which remains in public hands. However, the roles for DNAAS and AIAS are not clear as both can plan and manage investments for sanitation.

In many countries decentralization and fiscal balance laws require progressive devolution of funding, implying that local governments have the authority to plan their own use of operating revenues including transfers from the national government. In practice, however, sanitation financing processes are largely still controlled from the central level. Although national budgets for urban sanitation have increased in recent years, the vast majority of these funds remain with national governments, rather than provided directly to local governments through special allocation funds for urban sanitation.

Where responsibility for sanitation has been devolved to the local government and they have the authority to raise funds for sanitation, local governments should have sufficient motivation to access available funds and invest in services. However, where spending on sanitation remains extremely low, it could be argued that the devolution of responsibility for sanitation is another unfunded mandate for these already resource-challenged entities.

Even when there are government and commercial sources of repayable financing available, local governments are often reluctant to borrow, especially where sanitation is not prioritized in local investment plans. Examples also exist where local governments delegate responsibility to a dedicated sanitation service provider in the form of a state-owned enterprise or private entities, but investment is stymied by lengthy bureaucracy and complex processes. The lack of or weak regulatory structures means the establishment of local regulations permitting investment to service authorities or providers is hampered.

Experience of concessional lending for urban sanitation projects being “on-lent” at higher interest rates has also made local governments cautious to take on such debt. There are sensible reasons why interest rates are increased at different stages, including covering the risk of currency devaluation, loan default and overheads of intermediaries. Yet the result is perverse. End borrowers, including the poor, end up paying relatively high, far-from-concessional rates on loans; the concessions are benefiting central governments only.

Local governments and municipalities that take on these loans face difficulties in repaying them due to a number of interrelated reasons. Firstly, the interest rates on these loans are relatively high by the time they reach towns, as set out Table 2. In addition, there is a divergence between often unrealistic pre-feasibility projections, calculated at the design stage to demonstrate the intervention will be sustainable and the actual policies followed by local governments regarding tariff structures and revenue generation. This is often due to local

Table 2: On-lending of loans at increasing Interest rates

Country	Project	Step 1	Step 2	Step 3
Bangladesh	Second Water Supply and Sanitation Sector Project	Donor to GoB @ 1.0% (ADF – 40-year loan, 10-year grace period)	GoB to Paurashava @ 7.5% (20-year loan with 5-year grace period)	Paurashava to poor residents @ 14% (market rate, through NGOs)
Nepal	Small Towns Water Supply and Sanitation Sector Project	Donor to GoN @1.5% (ADF – 32 years, 8-year grace period)	GoN to Town Development Fund (TDF) @ 5% (20-year loan with 5-year grace period)	TDF to Water Users and Sanitation Committee @ 8% (for 12 years with 3-year grace period)

governments being peripheral to the design process and/or financial models not being aligned with local financing strategies or approaches.

Once the project is running, loan repayments are made by the central government on behalf of the local government, and information regarding the status of loans is often not available at the local level. As a result, local governments view the loans as grants from the central government and in some cases, are not even aware of their obligations under the loans. Changing leadership in local government further erodes a sense of responsibility towards loans, and the taking on of debt.

3.9 KPIs for urban sanitation are weak and insufficient to guide finance priorities

Our analysis of urban sanitation investments has highlighted the weakest in the monitoring of sector investments, specifically inadequate tracking and analysis of investments versus target. Linkages between investments disbursed and results are often weak, with a focus on outputs, while access to and effectiveness of planned services often go untracked. Furthermore, service authorities often see little value in expending scarce resources on gathering the necessary data monitoring outcomes and impacts, especially if there is a risk that the data might be limited due to flaws in project design or implementation.

This is compounded by the mismatch between financial decision making and service provision, which can result in a lack of good quality and transparent investment data, and a resulting lack of accountability for outcomes. Responsibility for data collection often lies with different ministries or agencies rather than with the agencies responsible for developing or managing sanitation infrastructure or services. In many countries, data is collected only at national or state levels, making it difficult to disaggregate them by project locality or district. This lack of transparency impacts the ability to hold financiers and mandated institutions to account.

In **Uganda** attempts have been made to increase transparency and accountability of urban sanitation finance investment through the reporting of investments in the Joint Sector Performance Report. However, reporting has been found to be inconsistent between years, hampering multiyear comparisons, albeit this is generally (but not always) due to improvement in the disaggregation of data with each year that passes. It should also be noted that data has not been independently verified, with the report relying on self-reported data. NWSC financials are audited by the Auditor General, and to some degree investments can be calculated from the financial statements. However urban sanitation investments are not always disaggregated from wider WASH investment, and within the sanitation sector sewered and non-sewered investments are not disaggregated.

In **Kenya**, WASREB initiated reporting on a corporate governance indicator to promote better management practices. To date WASREB is assessing 75 Water Service Providers (WSPs) out of a possible 88 WSPs. For the fifth year running, WASREB has continued to implement the governance assessment tool to measure the degree of utility adherence to national governance standards, related to: Utility Oversight and Supervision, Information and Control Systems, Financial Management, Customer Service Standards, Human Resourcing and User and Stakeholder Consultation. The sector continues to experience challenges with regard to practice of good governance in many WSPs Some devolved units are still struggling to appreciate and recognize the importance of national standards, shared monitoring and need to improve enforcement.

The data shows a possible correlation between corporate governance and WSP performance as might be anticipated. The causal relationships are not straightforward. A poor performing utility might have improved its governance but the results in terms of an improvement in performance might take some time to show. Alternatively, a well-performing utility that was well governed, but whose governance has deteriorated, might be able to maintain good performance for a period before performance drops.

Due to ineffective national monitoring systems, insights can be gained from high-level evaluations of investments by multilateral development banks and other bilateral donors. African Development Bank's (AfDB) Cluster Evaluation of urban water and sanitation investments noted that implementation delays were due to a range of reasons, including due to procurement procedure issues, poor quality at entry, and delays in the preparation of tender documents after loan approval. Kenya, Mozambique and Senegal were also highlighted for slow loan ratification. Kenya was also noted for poor performance of contractors and the slow payment of government counterpart funds. The projects also did not follow their initial cost plans. All 15 completed urban water and sanitation investments projects reviewed under this evaluation experienced cost overruns or underruns. Eight projects experienced cost underruns of 3% to 19% of the original amount. However, the extent to which projects were completed within the cost estimated at appraisal

could not be easily assessed, as some planned elements of projects were revised during implementation. In most cases, cost savings or underruns were attributable to projects being scaled down, as was the case with Senegal, Kenya and Mozambique.

IED's review of the project completion reports of 63 ADB supported urban sanitation projects completed between 2003 to 2016[6]. The review highlighted the weakness in indicators at design and implementation stages and showed that only 10 of the projects had indicators to monitor outcomes related to environment and health impacts. Some projects provided support for a monitoring system to track the performance of sanitation facilities regularly (for example, the effluent discharge of treated water and the water quality of water bodies near sanitation facilities), but the monitoring system failed to enable clear links between investment and outcomes.

Investment data quality and transparency is weak in most countries, and there appears to be some link between this and the professionalization and extent of autonomy of investment decision making. As might be expected, where systems and capacity are weak there is a gap between self-reporting and what happens on the ground. Attempts to gather data for investment planning have highlighted the lack of available data on the allocations of government and service provider finance to both investment and operational costs.

More specifically for this review, the lack of disaggregated data does not allow cost allocated to urban sanitation alone to be split out from wider water and sanitation costs in urban areas.

As mentioned earlier, it also hampers a clear understanding of the balance of finance from different sources (3Ts), the viability of long-term public investment, or over dependence on external finance. In addition, the sector still struggles to track investment outside of the government budget books, including from some donors, NGOs and the private sector. The weakness in sector monitoring systems limits understanding of investment effectiveness and creates risk for investment integrity.

Performance incentives can foster service authority capacity, responsiveness, and innovation. More focus is needed on data collection so this information can be used by governments and external support agencies to guide future investments in sanitation. Awareness and attention on long-term economic cost and benefit associated with capital investment in urban sanitation are essential amongst various branches of the government, particularly with the national planning, finance, and public works. More effective monitoring can enable more better analysis of the sustainability and scalability of financial investment.

3.10 Poor and informal communities remain marginalized in finance priorities

Equity is at the heart of the CWIS approach, but it is often not at the centre of sector financial decision making. Despite many sector policies setting out requirements on equity and inclusion, the political economy drivers behind sanitation planning processes often mean that equity considerations are not considered during financing and investment decisions, with greater emphasis on cost-recovery goals.

As a result, non-sewered sanitation services do not receive sufficient consideration in financial planning processes despite their potential to accelerate progress towards national targets. Where sanitation is prioritized, an overemphasis on sewered services risks increasing the cost of service delivery and/or leaving a large portion of the population under-served where sewers are not technically feasible or when they are too expensive to lay in the entire service area.

The Kampala Sanitation Improvement and Financing Strategy (see Figure 3) is a good example of where the financing strategy in Uganda clearly mapped out the investment allocations-based finance allocation on costs, not value to be created, which resulted in most investment being allocated to sewers networks. The financing assessment did not reflect who needed to be served, and how resources should be used to reach them with basic services, as quickly and equitably as possible.

Technology choices and associated equity implications need to be considered in financial planning to ensure existing inequity is not being further exacerbated. With the right mandate and political support (independence), regulators have the potential to play an important role in reviewing investment decisions to ensure equity in service delivery. Such as in expansion of service into unserved areas and appropriate tariff structures for the poor. In the same way, KPIs related to equity should be prioritized in sector CWIS plans, and not made peripheral add-ons.

6 https://www.adb.org/sites/default/files/evaluation-document/349801/files/tp-urban-sanitation.pdf

Image: Open drain in Rangpur, Bangladesh. Credit: Green Ink

4. Discussion

This section addresses some of the cross-cutting themes and findings that have emerged from the elements that have been identified as essential for an effective CWIS financing framework. It also highlights some emerging approaches and tools that can support the development of CWIS financing frameworks.

4.1 Gaining a better understanding of the cost of CWIS

A target for countries to invest at least 1.2% of GDP just on sanitation by 2018 was recommended by AMCOW. While actual investments were a very small fraction of this, the reality is that the actual total amount required and provided across various funding sources is not known. This gap in data and analysis highlights that more focus is needed in planning and reporting of sanitation investments, including greater disaggregation of costs and expenditure. Planning and reporting should be more clearly separated from investments in water supply and differentiated between sewerage and on-site sanitation cost. The lack of data and reporting reflects the lack of prioritization of the sanitation sector as compared to water.

To address this gap in knowledge, several initiatives have been undertaken in recent years to support governments, utilities and regulators to better plan and cost urban sanitation intervention. These have focused to a greater extent on non-sewered service but have also recognized that the reality for most cities is that sewered and non-sewered services need to be implemented alongside each other. The ESAWAS Sanitation Tariff Setting Guideline recognizes the need to unbundle sanitation services from water supply and further establish costs along the full-service chain for both sewered and non-sewered sanitation.

The Citywide Inclusive Sanitation Costing & Planning Tool[7] is another important resource that can quickly allow planners and service providers to compare capital and running costs of different types of sanitation solutions along the whole sanitation service chain at the component, system, and city levels. The CWIS Service Assessment and Planning (CWIS-SAP) tool[8] is another tool that helps decision-makers compare the outcomes of different sanitation interventions or investments. The tool analyses and illustrates how each proposed intervention is likely to affect the equity, financial sustainability and safety of sanitation services in an urban area by considering a mix of sewered and non-sewered technologies, service delivery models and revenue models. The CWIS-SAP tool is designed in collaboration with regulators and service providers to assist in evaluating a variety of options and prioritizing those that cost-effectively expand access to safely managed sanitation. CWIS-SAP places specific emphasis on ensuring that low-income areas are

7 http://200.58.79.50/fmi/webd/CWIS%20Planning%20Tool%201_4
8 https://www.cwisplanning.com

not left behind, to avoid negatively impacting service providers' financial viability and increase the amount of waste that will be disposed of safely.

4.2 Investments in national system soft infrastructure must accompany hard infrastructure

The development of hard and soft infrastructure needs to be treated simultaneously during the establishment of any new service delivery systems to achieve optimal impact. Despite an increased recognition of the need for soft infrastructure, significantly more financial investment is allocated to hard infrastructure. Where investments have been made in soft infrastructure these are often in projectized manner, not at a national systems level, and/or lack a focus on non-sewered service provision.

The Kampala example (see Figure 3) as well as highlighting the significant resource imbalance towards sewered sanitation service, also shows the lack of investment in soft infrastructure, which is common across many countries. Whilst donor capital is often available for the construction of sanitation infrastructure, there is often no systemic financing mechanism for supporting sanitation service provision across the service chain. This is despite a range of sector evaluations, including the AfDB cluster performance report and independent review of ADB investments in urban sanitation, flagging the challenges around missing soft infrastructures. These included the lack of staff, inadequate human resources capacity and logistics, poor revenue collection systems and models, and weak regulation, enforcement and monitoring systems. These and other related issues are resulting in investment in hard infrastructure not being maximized, compromising their financial viability and ultimately hampering the delivery of services. Planning for long-lasting services requires identification and estimation of the costs of delivering urban sanitation services, beyond hardware and labour inputs. Some progress has been made in identifying and allocating resources for operation, maintenance, and asset renewal costs, but there is also a need to identify and finance national soft infrastructure and lifecycle costs of operating those systems. The sector lacks examples and clear costs of the investments required to establish and maintain national system infrastructure to support service authorities, such as financial planning, management information systems, customer billing, and regulatory systems.

While central governments, often through donor support, provide investment for infrastructure to fulfil their statutory obligations for sanitation, they regularly retain ownership of the assets. The impact of this is instead of spending on operations and maintenance, local governments have a perverse incentive to allow infrastructure to depreciate until the central government replaces it. Unclear mandates create confusion about responsibilities for investment, making it difficult for service authorities to provide financial support to keep systems performing and develop soft systems infrastructure to support service delivery.

A financing mechanism that aims to address this is Development Policy Financing (DPF), which provides loans, grants or guarantees

Shimla, India, Water Supply and Sewerage Service Delivery Reform program

In 2018, the World Bank approved the US$ 40 million Shimla Water Supply and Sewerage Service Delivery Reform program, the first of three planned development policy loans (DPLs) to support the government of Himachal Pradesh's water supply and sanitation reform strategy. The reform program aims to address an environment where policy making, regulation, asset ownership and service delivery were directly integrated in state and departmental structures, and where responsibilities were highly fragmented with no single agency accountable for urban sanitation services.

The project is structured so financial resources are released based on the successful achievement of prior actions[1] related to change to institutional and governance structures of Shimla Municipal Corporation and Shimla Jal Prabandhan Nigam Limited (SJPNL), as well as approval of cost recovery, tariff, and subsidy policies, improved monitoring systems and energy efficiency. The project focuses on three aspects of sector reform:

- **Sector governance and policy:** New regulatory mechanism to govern tariff and subsidy policies toward cost recovery; performance-based contracts for service improvements; grievance redress mechanisms
- **Utility performance:** Energy efficiency; competitive hiring processes; staff performance incentive system to affect one-third of staff salaries
- **Sector and utility finance**: Initial public capital grants to finance service expansion under modernized procurement framework; commitment to transparent and predictable subsidies; SJPNL eventually to tap into commercial finance to expand services to satellite towns

1 Prior Actions are policy and institutional actions deemed critical to achieving the objectives of a program supported by a DPF operation. These present the legal terms defined in the loan agreement that have to be met for each operation before disbursement.

budget support to governments for a program of policy and institutional actions. DPF offers the opportunity to support sector reforms and the development of soft infrastructure through non-earmarked general budget financing that is subject to the borrower's own implementation processes and systems. A recent example of such an investment is in Shimla, India – see box on previous page.

4.3 Affordability remains a constraint to a balanced funding mix and viable service delivery

Affordability remains a challenge for safely managed sanitation services and financial support is required for household on-site sanitation facilities, accessing FSM services and connection to sewers. Experience from many initiatives aimed at increasing urban sanitation coverage have shown that sanitation marketing and promotion alone have not resulted in significant reduction in the use of unimproved sanitation facilities. A key bottleneck is the low affordability and the need for some form of subsidy or financial support for the poor households. While household subsidies appear a clear solution, traditionally they have been poorly conceived and targeted. Such schemes need carefully designed support mechanisms for the construction of household sanitation facilities, based on detailed studies to assess households' willingness and ability to pay, and where appropriate formative research on sanitation markets.

Financial modelling for the viability of new sanitation infrastructure or service is often built based on expected number of customers. Where customers do not meet expectations the service provider does not get the planned return on investment or sufficient income to manage the infrastructure, sustain service provision or service debt. Reasons for the lack of customers vary from place to place, based on context and infrastructure or service being offered. Low-income households that are being offered new FSM services, are often required to upgrade onsite infrastructure to enable the service to be undertaken. This cost is often beyond the ability of the household and few effective subsidy schemes have been designed to address this upgrading issue.

For traditional sewer connections, there is often an inability (financial or technical) or lack of incentives for the customer to connect. However, poor design and lack of supporting infrastructure (tertiary sewers) can all hamper customers. Even where sewers are in place, the cost of connection may be high and in most countries the connection cost must be met in its entirety by the customer, creating a powerful disincentive for connections, as seen from the case in Cambodia highlighted earlier. Local income, households' willingness and ability to pay also means that sanitation service providers struggle to be financially self-sufficient, specifically for FSM services.

Increasing block tariffs are applicable where water is provided or wastewater is collected, and a metering system is in place. Block tariffs can be set at the service-provider level or by national or local government and are often structured with the intent of protecting the poor. Increasing block tariffs assume that those that will be impacted by higher tariffs tend to be the higher-income households in a community, including those connected to water based sewerage systems.

However, the design of the increasing block tariffs is a delicate issue as it is rife with social implications and can have unintended effects on the poor. Regulators are often reluctant to limit the size of the initial block because of political pressures. Households using less of minimum water per month are not able to save on their water bill and non-poor households are profiting from the lowest block tariff rate. In theory, low-income households with private metered connections benefit from the subsidized rate, but this is not always the case if poor households are sharing a single connection that drives consumption and rates higher, with the result that poor households finally pay more than better-off users. Moreover, most poor households have no connections to the water distribution system therefore they are not able to be helped by such tariff structures.

One alternative to correct some of the inefficiencies of increasing block tariffs would be to charge the same price per unit for all income groups and add a fixed charge for different income groups based on sanitation service types. For the poorest, this would mean a negative fixed charge to be deducted from the volumetric charge. Nevertheless, this proposal assumes that the poor can be easily identified and the whole process involves high administrative costs

These constraints make it difficult to recover operating costs through sanitation tariffs alone. To try and address these challenges some attempts have been made to support service authorities to undertake more detailed financing studies to consider the need for general subsidies to the service providers, develop effective tariff structures based on service level, and targeted subsidies to low-income households.

4.4 Tax needs to make up a larger proportion of the funding mix

While transfers and tariff will remain a key part of the funding mix, a greater contribution from the 'tax' element of the 3Ts is required. This is not only necessary to increase investment in the sector, but also justified based on the rationale of the wider societal benefits of improved sanitation. Whilst some tax revenue is generally allocated to this water and sanitation sector, often there is no department responsible for sanitation, specifically non-sewered sanitation, in the municipal office.

One of the impacts of limited allocation of tax through national budgets is that municipalities lack the staff and capacity to provide their necessary sanitation services. This is then further compounded by municipalities not allocating their own tax resource to address their mandate in this area. Instead, they turn to users to pay for the service directly, through tariffs or a call-out fee is charged to residents for services, such as emptying. Such fees are usually charged at or just below break-even for the cost of operations and do not cover any administrative overheads. As discussed above increasing financing through adequate tariffs is often out of question, particularly due to the low willingness to pay.

The structure and focus of new taxation regimes to support sanitation needs to be done with caution. Financing of sanitation intervention entirely through general taxation can lead to an undesirable type of redistribution of income, especially where the focus of investment is on sewered sanitation, with scarce public funds disproportionately favouring the wealthier population segments. Indeed, most urban sanitation interventions in developing countries do not serve the poorest for a range of reasons, including the fact the poor are not already connected to water, making access to sewered sanitation unfeasible. Using taxation to finance sewered sanitation can result in having the poorest subsidizing a service for which they are not benefiting directly. This perceived unfairness is often cited as contributing to household's unwillingness to pay for other services.

Increases in finance from taxes need to be accompanied by greater fiscal decentralization to empower those mandated to deliver services and the requisite integrity measures to manage allocation, expenditure, and results of those resources. Greater fiscal decentralization can, for example, facilitate the required innovation in tariff systems and cross-subsidy models, which could both increase income and underpin a service provider's ability to access commercial finance.

Misalignment of responsibilities and incentives risks encumbering the transition to more localized financing mechanisms. Where donors are active, local governments and utilities have few incentives to pursue a better balance of public and commercial finance, because development finance is available. In the same way, development banks currently do not have sufficient incentives built into their lending operations to promote this transition. However, the vast majority of urban centres do not benefit from donor support, and those that do cannot rely on this as a sustainable solution.

While using subsidies faces budget constraints that are particularly acute for the governments of the most concerned countries, a sanitation levy together with a dedicated sanitation fund offer an opportunity to increase investment. A levy on the water tariff provides a mechanism to raise funds for investment in sanitation. This revenue should be ring-fenced in a sanitation fund and used to support investments in sanitation. Lessons from existing initiatives, for example in Burkina Faso, should inform the design of these mechanisms in new contexts.

4.5 Aligning incentives for investment in urban sanitation

The fragmentation of sanitation governance makes it hard to create clear accountability for performance and outcomes and hampers transparent decision making related to sanitation investments. While decision makers are aware of the need for and benefits of investment and cost recovery approaches that consider not only the construction, but the lifetime, rehabilitation and extension of sanitation service delivery, service authorities are often able to influence the financing and investment decision made. This mismatch increases with the greater "distance" between service providers and financing decisions.

In a decentralization framework, the transfer of operational and financial responsibilities from central government to regional and local authorities must be accompanied by sufficient training or funding to support the new activities and skills needed. Multiple organizations that participate in or depend on financing decisions need to collectively review and shape critical national finance decisions, including asset holders, investors, authorities, lenders, and various ministries. Often this process is opaque or ad hoc, with financing and investment decision making not aligned with service delivery mandates, resulting in a mismatch between the incentives acting on different entities. As demonstrated by the on-lending examples above.

Evidence from our review of urban sanitation investments in several countries suggest that having the financing and investment functions housed within a national ministry does not favour the autonomy and professionalization of decision making. Where responsibility rests with a national ministry, a predetermined multi-stakeholder group can support decision making, such as in Burkina Faso, where a multistakeholder mechanism reviews sector progress and new financing commitments. Sanitation funding programmes that enable local governments to develop plans that are disconnected from implementation may inadvertently provide further incentives not to act. Where responsibility for urban sanitation service provision has been devolved to a lower tier of government, 'bottom-up' planning and allocation of finance forces financing agencies to play a supportive role to service providers.

There is an acknowledged danger that parts of urban sanitation service delivery which are non-revenue generating or are expected to be of low commercial viability will suffer under-investment. Anecdotal evidence reported during this study suggest that the organizational commitment to commercial viability is in some cases trumping other commitments to expanding access. This could leave a service authority refusing to take on their mandate, such as the operation of a wastewater treatment facility, to avoid being burdened with the high costs of operating and maintenance which couldn't be offset with increased revenue. Such examples show the lack of alignment between incentive and decision making in the sector and risks a lack of investment and commitment to service improvement in the sector.

Resource planning and management decisions have to consider not just the provision of infrastructure, but also on how to provide finance for systems infrastructure and enable services affordable for the poorest consumers. In addition, the time horizons and priority setting for urban sanitation investments need to be adjusted to meet the broader sectoral development goals, and a perspective of long-term financing of services. Although possibilities for innovative sanitation financing solutions may exist, it has been observed that service authorities lack clear understanding of how to access or implement them, as well as have an incentive not to act for fear of being accused of misusing public funds.

The role of regulators in addressing the misalignment in investment decision making and disincentives to seek alternative or innovative financing is something to be explored further. While the regulators are striving to push utilities towards full cost recovery and seek guarantees that any income above operational expenditure will be set aside for investment, in practice

Image: Addia Abba, Ethiopia, Credit: Chris Terry

regulators have little influence over investments decision making. Investment plans form an important tool in tariff setting and monitoring investment outcomes, but where investment finance is sourced has never been systematically linked to these decisions, and the requisite instruments are missing. To enable a transition to take on a more active role in this area, regulators would need new skills and the establishment of a professional investment planning and monitoring structure. In many countries over the short term these skills would probably need to be brought in from external agencies, until sufficient internal capacity could be developed.

4.6 Using monitoring data to improve performance, drive investment and address inequality

Improving operational inefficiencies related to financial planning and management, revenue collections, and debt management can reap quick gains for utilities and the wider sector. Efforts to address these inefficiencies can increase revenues, enable improved service delivery, and better position service providers for investment. Increasing investment and improving the effectiveness of public sector performance is

"The fragmentation of sanitation governance makes it hard to create clear accountability for performance and outcomes, and hampers transparent decision making related to sanitation investments."

possible where there is a strong culture focused on learning and improving performance (individually, organizationally, and sectorally), framed by clear rules and regulations, and a clarity of roles, and good management practices. Achieving these conditions will often require substantial investment, not least in training and skills development. However, a critical component to support a learning culture is the improvement in data and ensuring that high quality and timely data and analysis is available for informed decision making.

Sanitation investment planning with a 'learning' orientation needs to be put in place through institutional arrangements and incentives that are able to accommodate mistakes and failures. It has been suggested that better outcomes are not necessarily achieved by simply changing the 'method' of sanitation planning by combining various elements. If the drivers and incentives operating between actors are the same as before, it is likely that past failures will be repeated. The challenge, then, is how to change some of the rules of the game to lead to improved outcomes.

As mentioned before, the sector requires better monitoring data to understand the cost of delivering a range of sanitation services to guide investment planning and the development of financing strategies and models. The CACTU$ initiative[9] might help in addressing the gap and understanding costs and demand base for both service authorities and the private sector. There is also a lot of interest in better understanding and capturing cost data at the level of the sub-business unit, such as the sewer network, WWTP, and on-site business.

The lack of information about consumers is often a handicap to sector planning and effective targeting of investments. Gathering detailed information about a customer base, willingness/ ability to pay, and different service level requirements can be both technically difficult and expensive in relation to the potential size and scope of sanitation services. Tools such as Maji Data and Socioeconomic surveys in Kenya, the tariff model in Lusaka and broader city level master planning documents are very useful sources of data and can help organize such data better. Such data would improve the accuracy of the demand estimates, and feed into investment and financing plans.

Furthermore, such effective and consultative planning review and processes can ensure subsidies and cross-subsidies reach the target population. During the planning stages, if tariffs are going to cover running costs of the sewers and possibly recover some of the connection costs (this can be the case, depending on the service provider's mandate and approach), then tariff setting, and application processes should ensure that any CAPEX and OPEX subsidies or cross-subsidies actually reach their intended households. This can only be ensured by a strong, and where necessary independent, monitoring system.

Monitoring the performance of service provision over time, to help guide strategy at the sectoral level is often a challenge, due to insufficient funding and capacity. Segmentation of service providers according to performance and creditworthiness offers an opportunity to more efficiently and effectively allocate limited financial resources. The World Bank "Utility of the Future" program[10] has developed a range of indicators to assess utilities maturity across five elements: Commercial Operations, Technical Operations, Financial Management, Human Resources, and Organization & Strategy; each of which is divided into areas and topics. Financial management covers budgeting, cash flow and management, accounting and financial reporting, auditing and risk management, and financial modelling and forecasting.

In the Philippines, the URAF proposes to provide financial resources based on multiple levels of criteria associated with the utility's level of maturity and performance. First, providers are prioritized according to the characteristics of the population in terms of poverty and health risks. Then, the type of support is determined by how the service provider is performing and what, if any, resources they can access on their own. For example, some service providers may be able to access the market directly and don't require concessional government financing, while others may need significant subsidy support, or require grant funding for efficiency improvements prior to taking on additional debts.

9 CACTUS$ is a research initiative led by the University of Leeds and funded by The Bill & Melinda Gates Foundation
10 https://documents1.worldbank.org/curated/en/796201616482838636/pdf/Utility-of-the-Future-Taking-Water-and-Sanitation-Utilities-Beyond-the-Next-Level.pdf

Finally, but arguably most importantly, more and better data should be gathered and prioritized to support CWIS investments to be delivered in a more equitable manner. This requires the KPIs related to equity to be included in sector CWIS financing frameworks. The CWIS dashboard already has developed indicators to track equity considerations, informed by global monitoring frameworks, project and country and city specific frameworks. The choice of indicators combines global and various national requirements and aims to inform city planning and decision-making. At the outcome level six indicators have been developed to support monitor equality of outcome, as follows:

1. % of Low-Income Community (LIC) population with access to 'safe' individual toilets / % of total population with access to 'safe' individual toilets
2. % of safe management LIC / % safe management citywide (only for Individual Household Latrines)
3. Subsidy amount paid to Non-Sewered Sanitation/ Sewered Sanitation
4. % of women in sanitation related decision-making bodies (government institutions)
5. Gender pay gap in the sanitation workforce
6. Sanitation worker equity (formalization, legal recourse, right to unionize, social security and health insurance)

For the resource planning and management function, the following indicators have been developed to support investment decisions making takes equity into consideration:

- Sanitation budgets are allocated based on a needs assessment
- Sanitation authority has conducted an assessment of the baseline condition of existing infrastructure and service delivery gaps
- Sanitation authority has conducted an assessment of the baseline condition of existing infrastructure and service delivery gaps in informal settlements and low- income service areas
- Sex-disaggregated data is collected for sanitation planning and investment
- Sex-disaggregated data is actively used for sanitation planning and investment
- Budget allocation is responsive to the differential needs of women based on sex- disaggregated data
- Data by income groups is collected for sanitation planning and investment
- Data by income groups is actively used for sanitation planning and investment
- Data by ethnic or social groups is collected for sanitation planning and investment

Sewage pipe and wastewater, Bhopal, India

5. Conclusions

Drawing on the various cases described in this paper, we put forward the following core conclusions as key findings and recommendations for strengthening the resource planning and management of Citywide Inclusive Sanitation.

Financing frameworks are key to prioritising public finance for inclusive sanitation outcomes. Financing frameworks need to be guided from the top down, through national targets and strategies, as well as principles and modalities. They also need to be influenced from the bottom-up, through local plans and taking local capacity into account, as well as listening to the needs and voices of the poor and unserved. Effective investment planning requires a detailed understanding of service needs of different groups and costs, related to initial capital expenditure and ongoing operational expenditures to keep services running. But the required data on this is often lacking, especially for non-sewered sanitation services across the supply chain and for soft infrastructure. Effective investment plans should provide clear criteria for the allocation of resources, across a range of competing options and constituents, as well as provide transparency for investment decisions made in the future.

A significant challenge the sector faces is that financing and investment decisions, asset ownership and operations, as seen in this Figure 5, often sit with different stakeholders. These stakeholders have different priorities, and visions for how infrastructure and services should be delivered. Confusion over institutional roles, split sanitation mandates between sewered and non-sewered, and weak fiscal decentralization, have proven to compound this issue. As a result, performance goals and incentives of different institutions often don't align. This can have a significant impact on how resources are raised, allocated and spent. This also hampers efforts to hold financially disempowered institutions to account for spending decisions and investment results. Governments need to align financial and investment decision making responsibilities with those responsible for ownership of assets and management of assets. Where this is not possible, greater transparency and increased engagement of a broader set of stakeholders is required to ensure finances are effectively allocated, disbursed, expended and monitored.

Achieving the right mix of finance is critical to long term expansion of services, as well as equity and viability of results. Tariffs remain an important component of the financing mix, however customer affordability and weak revenue collection impacts service authorities' ability to achieve full cost recovery**.** Split mandates have proven to hamper cross-subsidies of tariff, especially if authorities

are new to non-sewered service provision, which can be particularly challenging to collect revenue from. It is clear that taxes need to make up a larger share of the financing mix, but they also need to be used more strategically to address inequality and stimulate other investments. While commercial finance presents an opportunity to increase investment, it remains out of reach for most cities and is unlikely to be targeted at the poorest communities.

Where investment is allocated also needs to be reviewed, with greater emphasis on supporting national soft systems infrastructure, alongside new hard infrastructure. For service authorities, investment needs to be channelled to strengthen customer service, billing, and asset management systems**.** Where new non-sewered mandates have been taken on, resources are also needed to support institutions to adapt to new roles, through capacity development and building new relationships. At the national level, investment is required in regulators, infrastructure development departments and monitoring systems to support increased accountability and transparency around investments. Governments and donors should allocate resources to support the transition needed to Citywide Inclusive Sanitation. This could include temporary subsidies to support the improved efficiency of both public and private sectors.

The tracking of investment results is imperative, but currently overlooked by both lenders and borrowers. More and better data is needed to improve performance and drive investment, but output and investment data is often not captured or cannot be aligned for analysis**.** This is something that TrackFin[11] has tried to address, but in most countries, it has not yet been implemented extensively at the municipality level or for a broad range of sanitation services.

As a result, planned versus actual results are not scrutinized with expenditure data, and the reason for failed infrastructure, services and investment is poorly understood. Tracking how investment has addressed, rather than reinforced, inequality in access is currently not effectively done in most cities. Furthermore, capturing medium term outcomes, such as whether investments result in services being expanded, improved and sustained over time, should also be prioritized. Tools have been developed to support the segmentation of service providers by performance and creditworthiness. Such approaches offer an opportunity to more efficiently and effectively allocate resources to support providers at different levels of maturity. Finally, investment planning would also benefit from having a ‘learning’ orientation to ensure the right incentives are in place to accommodate and learn from failures as the Citywide Inclusive Sanitation approach is more widely adopted.

The regulatory role in investment decisions needs to be strengthened. Regulatory oversight can help to channel investment to support the achievement of the CWIS outcomes of equity, sustainability and safety goals. In doing so, ensuring the service authorities and providers can be held to account over the effectiveness of the investments made and the quality of the services delivered.

11 https://www.who.int/publications/i/item/9789240028432

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