CWIS

Sanitation Data Ecosystem Profile

Lusaka City - 2021

Executive Summary

This report overviews the sanitation data ecosystem in Lusaka in 2021, and consists of two sections: 1) an overview of service level data across the sanitation value chain, and an analysis of some key factors that influence the availability and sustainability of data, including reporting structures, the regulatory environment, and funding sources; and 2) availability of sanitation financial data, and what affects availability. This report provides a foundation for Lusaka's service providers to develop a strategy outlining action points to bridge data gaps, improve data usage, and **facilitate data-driven decision-making in sanitation.** This report does not cover data reliability and data quality, although we note that these are important issues that must be tackled in any strategy to improve accountability structures for sanitation service delivery.

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Report Highlights

#1

Abundant institutionalized data exists across the sanitation service chain, regulated by NWASCO.

The independent national water and sanitation regulator, National Water Supply and Sanitation Council (NWASCO), issues licenses to all provincial Commercial Utilities (CUs) in the country and regulates their performance through a set of Key Performance Indicators (KPIs) and linked targets. This has led to high availability of data in areas such as sewer connection and treatment quality, collected by the provincial CU and service authority, Lusaka Water Supply and Sanitation Company (LWSC). Nevertheless, the quality of the data reported to NWASCO depends heavily on the CU's own mechanisms and resources for data collection, and challenges are especially acute regarding data collection on access and containment. Meanwhile, data on non-household level access is also collected by the Lusaka City Council (LCC, local government) for Public Toilets (PT), the Ministry of Education (MoE) for educational institutions, and the Ministry of Health (MoH) for healthcare facilities.

#2

Household toilet access and containment are major data gaps in sanitation datasets.

Most existing datasets concerning household toilet access and containment are one-off studies conducted for programs funded by donors and International Financial Institutions. Moreover, most of these program-linked datasets are confined to potential intervention areas within the city and have limited use for understanding or tracking citywide sanitation service level progress. The only citywide representative dataset on both toilet access and containment is an ongoing sanitation mapping survey that aims to cover all households. However, no mechanism is in place yet for the continued update of this data. The only dynamic dataset is the national census, which is updated every ten years and does not yet capture containment beyond sewer connections. In addition, the categorization of toilet access used by the census is currently too broad to distinguish between improved and unimproved facilities as per international standards and need to be aligned with such.

#3

Data collection on emptying has been scaled up through private desludging operators.

National legal and regulatory reform has explicitly included onsite sanitation in the mandate of utilities, and enabled the scale up of data collection on emptying, which started as a donor-funded pilot activity. Under the multi-donor funded Lusaka Sanitation Program (LSP), LWSC has piloted a business model for Fecal Sludge Management (FSM), involving private desludging operators in selected low-income areas. Since LWSC has been providing a subsidy under the program, private service providers are required to report data on the services completed to receive the full payment. This business model was recently rolled out in the rest of the city, as part of LWSC's overall efforts to provide onsite sanitation services driven by the new mandate and accountability requirements. As LWSC plans to gradually reduce and eventually phase out the emptying subsidy, mechanisms need to be in place to ensure the continued reporting by private providers even after the payment incentive diminishes.

#4

No mechanisms exist to track reuse data, and efforts are needed to encourage reuse of treated effluent.

LWSC sells treated biosolids and records the data for own revenue purposes as well as for reporting into a new joint MIS shared with LCC and MoH. However, treated effluent is currently being discharged directly. There is a need for NWASCO to include indicators related to the reuse of both treated effluent and biosolids in its monitoring framework to encourage CUs to start the reuse.

#5

The new joint Management Information System (MIS) enables data sharing among stakeholders, improving planning and decision-making for sanitation.

With the launch of a new integrated MIS at the end of 2020, LWSC, LCC, and MoH will have access to the key sanitation datasets collected by and available to each other, once the MIS becomes fully operational. This data sharing will enable LWSC to execute its new expanded mandate of onsite containment, emptying, and treatment of waste generated from public and institutional places that are not sewered.

#6

Sanitation data is highly transparent and widely accessible to the public.

Data submitted by all CUs to NWASCO is aggregated and published in an annual sector report. The public may also request access to data in NWASCO's database at the NWASCO office, as well as LSS data through LWSC once the system is fully operationalized.

#7

Financial data is readily available due to national regulatory mechanisms.

The Water Supply and Sanitation Act of 1997 allowed local governments to establish a water supply and sanitation utility as a company, and facilitated the formation of NWASCO as the national regulator. As financial sustainability is one of the key dimensions used by NWASCO to evaluate CU performance, detailed revenue and cost data is required for routine reporting.

Summary Table: Availability and Sustainability of Key Datasets Across the Sanitation Service Chain

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access	Access: Household Toilets (incl. Individual Household Latrines: IHHLs, and shared HH toilets)	● Y*	Y	Every 10 years (last updated in 2010)
		● Y (in process)	Y	One-off survey in process
	Access: Public and Community Toilets	● Y (PT)	Y	Annually
		● Y (CT, in process)	Y	One off survey in process
	Access: Educational Institutions	● Y	Y	Monthly
	Access: Healthcare Facilities	● Y	Y	Monthly
	Access/ Containment: Sewer Connection	● Y	Y	Daily
		● Y	Y	Every 10 years (last updated in 2010)
	Containment: Non-Sewered Sanitation (NSS)	● Y	N	Annually
		● Y (in process)	Y	One off survey in process
Emptying and conveyance	Emptying (NSS)	● Y	Y	Monthly
	Disposal at Treatment Plants (NSS)/ Decanting Stations	● Y	N	Collected daily; reported monthly
Treatment	Treatment Quality	● Y	N/A	Monthly
Reuse	Reuse: Treated Effluent	N	N/A	N/A
	Reuse: Treated Biosolids	Y	N/A	Monthly

Institutionalized reporting
National/State programmatic reporting
Own activity
Donor/ IFI program reporting

● National/State transfer
● Own revenue
● IFI/donor funding; Corporate Social Responsibility (CSR)
● Private sector; self-sustainable CBO activities

*In this summary table, references and sources have been removed to aid readability; however, full references and sources are provided in tables in the main body of the report

Data Across the Sanitation Service Chain

Achieving the Sustainable Development Goal (SDG) of ensuring safely managed sanitation for all will require accurate and up-to-date sanitation data at the city level to facilitate appropriate planning, management and decision making. This should encompass not only the typology and extent of sanitation access throughout the city, but also the management of waste from containment to emptying, transport, and treatment. However, for many cities including Lusaka, obtaining and maintaining sanitation data can be a significant challenge, resulting in gaps in data availability.

This section outlines two key data dimensions: the generation of datasets across the sanitation service chain which are critical to the planning and decision-making of Lusaka Water and Sanitation Company (LWSC); and the continued update of these datasets.

Overview: Data Availability and Gaps in Lusaka

Table 1 summarizes the availability of datasets in Lusaka mapped to the key data areas across the sanitation service chain, the coverage of each dataset, and the frequencies of update. In cases where more than one data source is available for the same indicator data point, each dataset is presented in a separate row.

Table 1: Overview of data availability and data sustainability across the sanitation service chain

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access	Access: Household Toilets (incl. Individual Household Latrines: IHHLs, and shared HH toilets)	Y[1]	Y	Every 10 years (last updated in 2010)
		Y[2] (in process)	Y	One-off survey in process
	Access: Public and Community Toilets	Y[3] (PT)	Y	Annually
		Y[2] (CT, in process)	Y	One-off survey in process
	Access: Educational Institutions	Y[4]	Y	Monthly
	Access: Healthcare Facilities	Y[5]	Y	Monthly
	Access/ Containment: Sewer Connection	Y[6]	Y	Daily
		Y[1]	Y	Every 10 years (last updated in 2010)
	Containment: Non-Sewered Sanitation (NSS)	Y[7]	N[8]	Annually
		Y[2] (in process)	Y[9]	One-off survey in process
Emptying and conveyance	Emptying (NSS)	Y[10]	Y[11]	Monthly
	Disposal at Treatment Plants (NSS)/ Decanting Stations	Y[12]	N[13]	Collected daily; reported monthly
Treatment	Treatment Quality	Y[14]	N/A	Monthly
Reuse	Reuse: Treated Effluent	N[15]	N/A	N/A
	Reuse: Treated Biosolids	Y[16]	N/A	Monthly

One notable data gap in Lusaka's sanitation data pertains to containment. Other than the one-off citywide mapping survey, **existing containment data is not representative of the entire city, which includes both the formalized city area and the 30+ Peri-Urban Areas (PUA) where around 70% of the city population currently reside**. While the local service authority, LWSC, does collect data on containment and submits this to the national regulator, National Water Supply and Sanitation Council (NWASCO), the data has traditionally relied heavily on assumptions and small samples. It is assumed that within the formalized city area, all households within a certain distance of the sewer network have sewer connections, while the remaining households all have septic tanks. Meanwhile, a sample of only around 20 households, most of which are along the main roads, is collected for each PUA that has around 10,000 households. This method has led to a very different portrayal of the containment profile of the PUAs from that suggested by several other detailed studies in selected PUAs.

It is worth noting that besides the datasets shown in the table above, several other datasets on access and containment have been collected by the Zambia Statistics Agency (Zam Stats) and programs funded by donors and International Financial Institutions (IFI), such as the flagship Lusaka Sanitation Project (LSP). However, on top of being one-off studies, these program datasets only cover potential program intervention areas and are of limited use for understanding sanitation service levels in the entire city. On the other hand, Zam Stats carries out the Demographic and Health Survey (DHS) and the Living Conditions Monitoring Survey (LCMS) periodically across the country, but the samples are designed to be representative only at the provincial level. As around 70% of the population in Lusaka Province reside within Lusaka City, if the sample sizes of these two surveys can be increased, and the sample design tweaked to allow sufficient representation of the city, these surveys could also be used for tracking city level progress over a long period of time. Among the datasets collected by Zam Stats, the national census which is updated every ten years also covers sanitation and is representative of the entire city by default. However, the census only captures toilet access and does not yet cover containment beyond sewer connection. **If questions on containment were to be included in the national census, the city would have a mechanism of tracking citywide containment progress over the long term, albeit at a low frequency of update.**

Motivation for Data Collection / Collation

Understanding the underlying factors driving data collection provides critical context and insights that help evaluate data reliability, identify stakeholders, and reveal why some data areas are prioritized or neglected. Decision makers can therefore make more informed choices about data-driven policies and programming. This section delves into Lusaka's sanitation datasets and explores the motivations behind them.

Lusaka's Sanitation Administrative and Reporting Structure

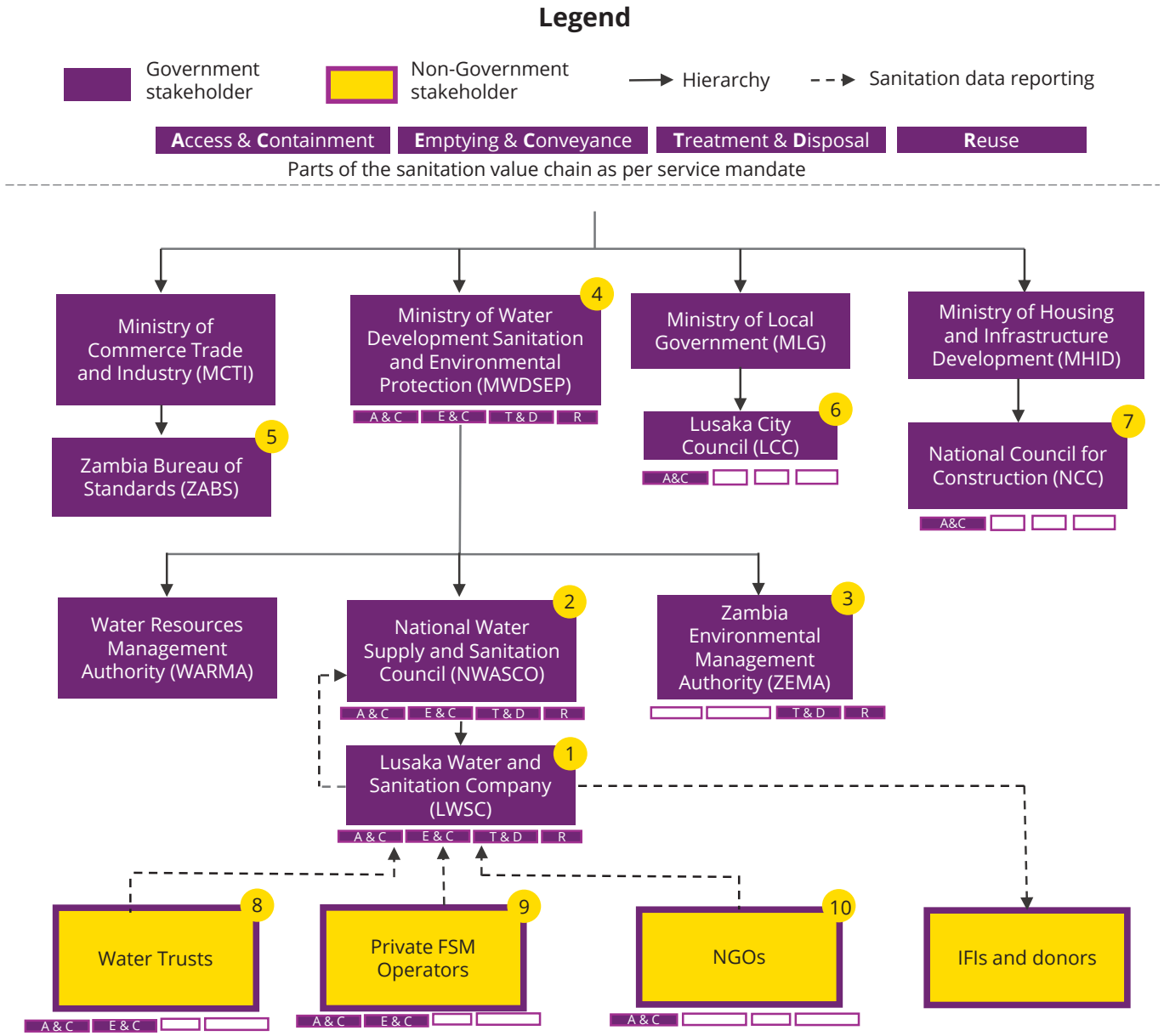
Figure 1 below summarizes the mandate and key activities of various stakeholders involved in sanitation (both government and non-government) together with the reporting structure. A high-level overview of the city's governance structure with respect to sanitation mandate and accountability is also available in the Lusaka CWIS Snapshot (link).

As the provincial Commercial Utility, LWSC is responsible for the service provision of both water and sanitation in Lusaka Province, which includes Lusaka City. Being the local service authority, LWSC is the main data generator for sanitation in Lusaka. All CUs, including LWSC, are required to periodically report sanitation data to NWASCO, the national water and sanitation regulator.

Like other CUs in Zambia, LWSC was (until recently) only providing sewered sanitation services. This is being transformed by ongoing national reform that is not only explicitly including Non-Sewered Sanitation (NSS) as part of utilities' mandate, but also establishing accompanying performance indicators and targets to be incorporated into NWASCO's regulatory mechanism.

With this reform, onsite containment, emptying, and treatment of waste generated from non-sewered Public Toilets, educational institutions, and healthcare facilities, now falls under the responsibility of LWSC. However, toilet access data in these places are collected by different stakeholders, namely the Lusaka City Council (LCC), Ministry of Education (MoE), and Ministry of Health (MoH), and LWSC had limited access to these datasets as data exchange mostly happened on request basis. To resolve this issue, a new integrated MIS was jointly established by LWSC, LCC, and MoH for data sharing, which is expected to help LWSC better execute its mandate of safe management for non-household sanitation among other uses.

Figure 1. Sanitation related administrative and reporting structure in Lusaka



1. LWSC is the primary stakeholder and the licensed service authority with the responsibility to implement sanitation activities in the city. LWSC reports to NWASCO on a set of indicators as per the license requirements.
2. NWASCO is the national regulator responsible for rules and regulation of water supply and sanitation service delivery in the Zambia. It issues licenses to utilities, approves tariff increases, and oversees utility performance.
3. ZEMA is responsible for the regulation of environmental protection and ecosystems. ZEMA monitors treatment quality and discharge of effluent. It conducts monthly tests and shares results with LWSC and NWASCO.
4. MWDSEP is the Government Ministry responsible for sanitation policy and Law formulation.
5. ZABS is the statutory body responsible for standardization, standard formulation, quality control and quality assurance. It also develops standards for segments in the sanitation service chain.
6. LCC is the local government in Lusaka City. It is responsible for the enforcement of standards for onsite facilities/buildings and works in collaboration with LWSC. LCC also manages all public toilets in the city.
7. NCC is a government authority that regulates, streamlines and builds capacity in the construction sector, including toilet construction.
8. Water Trusts are Community Based Organizations that provide water and sanitation services in PUAs. LWSC oversees and regulates their service provision through a management contract.
9. Similar to the Water Trusts, private operators are regulated by LWSC through a management contract for service provision.
10. A number of NGOs such as WSUP, Village Water etc. are involved in lobbying for enhanced sanitation coverage for all in the city.

Reporting Requirements and Data Generation

To understand the influence of these various types of reporting requirements and needs, they have been categorized into four categories: **1) institutionalized reporting,** which are inbuilt mechanisms of the overall government system and could include things such as the national census and routine regulatory reporting; **2) national/ state programmatic reporting,** which are initiatives of the national/ state government with a fixed timespan; **3) own activity,** which are collected entirely for the city's own operational purposes and needs and not reflected in other national/state/donor reporting processes; ; **4) IFI/ donor program reporting,** which are collected and reported for IFI/ donor driven programs. From 1) to 4), the frequency and duration of data generation tends to decline. It is also worth noting that even though type 2) programs may also receive financial support from IFIs/ donors, the agenda is mostly driven by the national/ state governments.

Using this classification, Table 2 below shows the reporting requirement of each dataset from Table 1.

Table 2. Data generation as linked to data reporting requirements

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access	Access: Household Toilets (incl. Individual Household Latrines: IHHLs, and shared HH toilets)	Y[1]	Y	Every 10 years (last updated in 2010)
		Y[2] (in process)	Y	One-off survey in process
	Access: Public and Community Toilets	Y[3] (PT)	Y	Annually
		Y[2] (CT, in process)	Y	One off survey in process
	Access: Educational Institutions	Y[4]	Y	Monthly
	Access: Healthcare Facilities	Y[5]	Y	Monthly
	Access/ Containment: Sewer Connection	Y[6]	Y	Daily
		Y[1]	Y	Every 10 years (last updated in 2010)
	Containment: Non-Sewered Sanitation (NSS)	Y[7]	N[8]	Annually
		Y[2] (in process)	Y[9]	One off survey in process
Emptying and conveyance	Emptying (NSS)	Y[10]	Y[11]	Monthly
	Disposal at Treatment Plants (NSS)/ Decanting Stations	Y[12]	N[13]	Collected daily; reported monthly
Treatment	Treatment Quality	Y[14]	N/A	Monthly
Reuse	Reuse: Treated Effluent	N[15]	N/A	N/A
	Reuse: Treated Biosolids	Y[16]	N/A	Monthly

Institutionalized reporting
National/State programmatic reporting
Own activity
Donor/ IFI program reporting

In Lusaka, besides two datasets used for IFI/ donor supported program reporting on access/ containment and emptying, all other datasets are institutionalized as routine data collection by either LWSC (across the service chain) or various national level stakeholders and the city government (on toilet access). It is worth highlighting that the datasets collected by MoE and MoH cover all educational institutions and healthcare facilities including private sector, which is not the case in many other countries where only the public/ government schools and health centers are included in ministerial or state-level data collection.

Most of the datasets collected by LWSC are required for submission to NWASCO (through NIS), with the remaining reported into LWSC-LCC-MoH joint MIS (LSS). As the licensing authority of CUs, NWASCO establishes and enforces service standards through two sets of indicators, which are used to define minimum service standards and to compare CU performance against each other. Based on the data submitted by CUs and verified through annual inspections, NWASCO takes decisions regarding utility tariff approvals, rewards, and penalties. NWASCO's **regulatory mechanism has led to high data availability across the service chain for sewered sanitation**, and is expected to improve data availability for onsite sanitation as Non-Sewered Sanitation (NSS) is being systematically integrated into the system as part of the ongoing national level reform.

Moreover, these **datasets are highly transparent and publicly accessible.** Data reported by all CUs is compiled and published in NWASCO's annual sector report, and the public may also request access to NIS data at the NWASCO office. Similarly, the public may also request access to data in the LSS at the LWSC office once the system becomes fully operational at the end of 2021.

The only service chain segment where no data currently exists is reuse for treated effluent. While data on quantum and sales is captured for treated biosolids and reported into the LSS, treated effluent is currently being discharged without any reuse and the data is not required for reporting. It may help create an incentive for effluent reuse if LSS starts requiring this data point; **if, however, NWASCO can expand its current set of indicators** to include the reuse of both treated effluent and treated biosolids, this could become **a lever for encouraging reuse across the country as well as for systematically capturing such data.**

The involvement of numerous stakeholders in collecting toilet access data gives rise to a challenge concerning the adopted toilet typologies. For example, the national census uses a broad definition of toilet types—all pits are classified as either "pit latrine" or "ventilated pit latrine (VIP)", without further differentiation between the different types of pits by either the superstructure or the substructure. As per the census definition, "improved sources of sanitation" refers to flush toilets and VIP, which is different from global standards such as the followed by the WHO-UNICEF Joint Monitoring Programme (JMP). While NWASCO was earlier using a similarly broad classification for CU reporting, it has recently adopted the JMP standards, and efforts are being made to update the census definition accordingly. **If the toilet typologies followed by all data owners can be harmonized, it will help ensure data consistency** and that all stakeholders can effectively utilize the datasets shared by each other for progress tracking and service improvement.

Influence of Funding Sources on Data Sustainability

Sustaining sanitation datasets requires regular and frequent updating of sources, potentially causing significant strain to already stretched resources for city governments and utilities. Understanding the viability of sanitation data ecosystems requires consideration of the sustainability of funding sources and the impact that inevitable political, administrative, and fiscal changes might have on ongoing data collection and maintenance efforts. The following section seeks to overview the resourcing landscape for sanitation in Lusaka, and consider its impact on data sustainability and future viability.

Lusaka's Funding Sources for Sanitation

LWSC has multiple sources of finance: own revenue (sewage connection charges, water billing, dumping fees, sanitation billing, reconnection fees, penalties and sanitation surcharge). The government also provides CAPEX through the state-approved annual budget, grants for specific projects, grants from donors for specific projects and borrowings (loans) from IFIs. Table 3 provides a quick glimpse of the characteristics associated with each of Lusaka's funding sources for sanitation. Most of the donor and IFI funding are channeled through the flagship Lusaka Sanitation Project (LSP) which includes both grants and loans. However, most of the program related funding is dedicated to sewered sanitation, with very little available for NSS.

Table 3. Sources of sanitation finance in Lusaka

	MWDSEP & MOF (National level)	**LWSC** (City and Provincial Level) (Own revenue)	**MCC & BMGF** (Donor)	**EIB, WB, AfDB & KfW** (IFI)
CAPEX or OPEX	CAPEX	OPEX	CAPEX	CAPEX
Grants or Loans	Grants	-	Grants	Both, mostly loans
Infrastructure or Non-infrastructure	Both	Both	Both	Infrastructure
Recurring or program-linked	Recurring	Recurring	Program-linked	Program-linked
Flexible to spend as per needs	No	Yes	No	No
SS or NSS	Both	Both	Both	Both
Part of the sanitation value chain addressed	Conveyance and treatment	All parts of the value chain	Access, Conveyance and treatment	Conveyance and treatment

Influence of Funding Sources on Sanitation Data

The sanitation funding sources presented above can be broadly classified into three categories: **1) national/ state transfers,** all of which are classified as grants; **2) city's own revenue; 3) IFI/ donor funding,** which can be grants or loans but are external sources and always linked to specific programs. To understand how these funding sources affect sanitation data, and their implications for the continued update of datasets, Table 4 below further overlays Table 2 from Section 1.2 with funding sources.

Table 4: Overview of datasets as linked to funding sources

Sanitation service chain	Dataset area	Data collected?	Data is representative of the entire city (for access) / covers all service providers (for emptying & conveyance)?	Periodically updated?
Access	Access: Household Toilets (incl. Individual Household Latrines: IHHLs, and shared HH toilets)	Y[1]	Y	Every 10 years (last updated in 2010)
		Y[2] (in process)	Y	One-off survey in process
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	Containment: Non-Sewered Sanitation (NSS)	Y[7]	N[8]	Annually
		Y[2] (in process)	Y[9]	One off survey in process
Emptying and conveyance	Emptying (NSS)	Y[10]	Y[11]	Monthly
	Disposal at Treatment Plants (NSS)/ Decanting Stations	Y[12]	N[13]	Collected daily; reported monthly
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Institutionalized reporting
National/State programmatic reporting
Own activity
Donor/ IFI program reporting

National/State transfer
Own revenue
IFI/donor funding; Corporate Social Responsibility (CSR)
Private sector; self-sustainable CBO activities

Other than the data collection initiatives at the national level, all datasets collected at the city level are funded by either the authority's own revenue or donor financing. Most of these datasets are collected using LWSC's own budget as CUs in Zambia are expected to cover their own operating costs and by extension, the associated data collection. This also means that utilities have limited resources for data collection, especially since tariff increases are regulated by NWASCO and utility revenue is constrained. Hence, data collection exercises that are traditionally resource intensive, such as on access and containment, may require alternative funding sources (e.g., central government transfer) or innovative mechanisms that are cost effective.

Currently, the only citywide representative dataset in household access and containment is donor funded. It is not clear whether and how this data can be continually updated. Similarly, the dataset on emptying is linked to a subsidy program fully funded under the LSP. Private emptiers are required to report detailed service data as payment of the subsidy amount is directly linked to the proof of completion of each service. While LWSC plans to use the sanitation surcharge to continue funding the subsidy for a period of time after the LSP ends, the long-term goal is to gradually phase out the subsidy entirely. In this context, **LWSC also needs to have a mechanism in place to ensure continued reporting from private operators after the payment incentive is gone.**

Considering both reporting requirements and funding sources for datasets across the sanitation service chain, **most of the existing datasets will likely continue to be updated in the long term, except for the two datasets currently collected under donor-supported programs for access/ containment and emptying.** However, datasets in these two areas are also critical for the service authority's planning and decision-making on NSS, as LWSC makes efforts to execute this new element of its mandate.

Data on Sanitation Finance

The generation and continued update of data across the sanitation service chain assists the service authority and accountability authorities to track progress, and plan programs and interventions for service improvement. Sanitation finance data are particularly important at the city level to shed light on the cost-effectiveness and financial sustainability of current sanitation service provision. However, sanitation finance data is often patchy or unavailable. Table 5 below provides a glance of the data availability for Lusaka in key financial data areas. This includes data captured by LCC (for PTs) as well as by LWSC (for all others).

Table 5. Financial data availability for Lusaka

Financial Data	Dataset area	Data availability (Yes, No, Not Applicable)
Revenue	Total annual sewerage/ sanitation fees (collected on water bills) for the city	Y
	Disaggregation of sewerage/ sanitation fees (on water bills) for sewered vs. non-sewered households, if the city has sewers	N
	Sanitation surcharge (on water bills) for sanitation improvement interventions	Y
	Sanitation tax as part of property tax/ water bills/ independently for service provision, such as for scheduled desludging	N/A
	Total annual revenue generated from PT & CTs owned and operated by the service authority, if user fees are charged	Y
	Total desludging revenue to service authority from HHs and/or institutions (for services directly provided by vehicles owned and operated by the service authority)	Y
	Total annual tipping fees from desludging operators	Y
	Fees from private players contracted to operate PT & CTs / treatment plants, including license fees	N/A
	Fines and penalties (for illegal sewer connections and drains, FS leakage/ spillage, etc.)	Y[17]
	Sales of treated effluent and biosolids	Y (biosolids)
Expenditure	CAPEX for each treatment plant	Y
	Annual O&M cost for each treatment plant	Y
	CAPEX for the sewer network	Y
	Annual O&M cost for the sewer network	Y
	CAPEX for PT/CTs owned by the service authority	Y
	Annual O&M cost for PT/CTs owned by the service authority	Y
	CAPEX for desludging vehicles owned by the service authority	N/A[18]
	Annual O&M cost for desludging vehicles owned by the service authority	N/A
	CAPEX for transfer/ decanting stations (incl. mobile transfer stations)	N/A[19]
	Annual O&M cost for transfer/ decanting stations (incl. mobile transfer stations)	N/A
	CAPEX for any other assets owned by the service authority	N/A
	Annual O&M cost for any other assets owned by the service authority	N/A
Direct Subsidies	Direct HH subsidies provided by the service authority for toilet & containment	Y
	Direct HH subsidies provided by the service authority for emptying	Y

Lusaka has a high level of financial data availability, again owing to the regulatory requirement for all CUs to report detailed financial data to NWASCO and actively use the data to make decisions. For example, if the CU's cost recovery ratio reaches a certain threshold, NWASCO can allow the CU to introduce a sanitation surcharge on water bills, thus generating ringfenced funds for approved sanitation improvement projects. Moreover, utilities are established as companies under the Company Act, which is a key provision of the Water Supply and Sanitation (WSS) Act of 1997. This legal status helps ensure that utilities have detailed revenue and cost data for compliance.

It is also worth noting that besides the direct subsidies given to households for toilet/ containment and emptying, there are also indirect subsidies for sewer connections which vary by project and are calculated on a case-by-case basis. However, households connected to sewers are usually in non-LICs while LICs rely mostly on NSS. This suggests that with the existing data, further assessments can be undertaken to understand the relative magnitude of these subsidies for LICs vs. non-LICs, and to ensure that LIC households receive at least the same, if not higher, subsidy than the non-LIC households.

Notes

[1] Collected under the national census by the Zambia Statistics Agency.
[2] Collected through the LWSC citywide sanitation mapping survey under the Citywide Inclusive Sanitation (CWIS) project supported by the Bill & Melinda Gates Foundation (BMGF). This is a census covering all households, including Peri-Urban Areas (PUAs, local term for Low Income Communities).
[3] Collected by the Lusaka District Health Office (Environmental Health Officers) within LCC, through the district diagnostic activity.
[4] Collected by Educational Zones (self-reported from schools, with spot checks) and reported to the District Education Office on a monthly basis. The data is then aggregated and reported to the Directorate of Planning and information at Ministry of Education (MOE).
[5] Collected by district health officers (self-reported from healthcare facilities, with spot checks) and reported into the District Health Information System, which is then aggregated and reported to the national Health Management Information System managed by the M& E Directorate at the MOH.
[6] Sewer connections are directly linked to existing/new water accounts in LWSC's database.
[7] Collected by LWSC (based on estimates, assumptions, and small surveys with convenience samples) and reported to NWASCO through the NWASCO Information System (NIS).
[8] Data only covers the planned city areas for now. For Peri-Urban Areas (PUAs, low-income settlements), it is assumed that all households have pit latrines, without differentiating between safe vs. unsafe types.
[9] The citywide mapping is a census covering all households.
[10] Collected by LWSC under the CWIS program.
[11] The data collection was initially carried out through a pilot program in selected Peri-Urban Areas. The program has now been rolled out to the rest of the city and covers all service providers.
[12] Recorded in logbooks at the treatment plants and entered into the integrated M&E system (LSS) on a monthly basis. The LSS was recently launched in November 2020 and is expected to become fully operational by the end of 2021.
[13] The data only captures the trucks that dispose of at the treatment plants. Illegal emptying and dumping are not tracked.
[14] Collected by LWSC- Sewerage Department and reported into NIS as per Zambia Environmental Management Agency (ZEMA) standards.
[15] No reuse is happening for treated effluent.
[16] Collected by LWSC - Sewerage Department at the time of sales and entered into the LSS on a monthly basis.
[17] Currently, the fines only cover illegal sewer connection and damage to sewer installation. The statutory instrument being developed for OSS will stipulate the fines and penalties for FS leakage/spillage.
[18] LWSC does not own any desludging vehicles.
[19] The mobile transfer stations (trucks for carrying barrels of FS emptied) are owned or hired directly by the Water Trusts in the PUAs, without involving LWSC.