Int. j. adv. multidisc. res. stud. 2026; 6(1):95-104

Received: 17-11-2025
Accepted: 27-12-2025

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Examining the Effectiveness of Household Waste Collection System in Enhancing Sanitation Standards: A Case Study of Kanyama Compound in Lusaka

[1] Izukanji Nambeye, [2] Chisala C Bwalya

[1] Department of School of Humanities and Social Sciences, Information and Communications University, Lusaka, Zambia
[2] Department of Social Sciences of Information and Communication University, Information and Communications University (ICU), and Zambia Research and Development Center, Lusaka, Zambia

Corresponding Author: **Izukanji Nambeye**

Abstract

Solid waste management remains a major urban challenge in developing countries. The World Bank estimates 2.01 billion tonnes of municipal waste each year and projects 3.40 billion tonnes by 2050. Informal settlements face the highest risks as weak collection systems allow waste to pile up, drains to clog, and disease to spread. This study examines whether household waste collection improves sanitation standards in Kanyama Compound, Lusaka. The specific objectives are to describe current household waste practices, to evaluate how far collection enhances sanitation standards, and to identify the challenges and limits that hold the system back. The study adopts a descriptive cross-sectional design with a quantitative approach. The target population is households in Kanyama. A sample of 75 participants was selected using stratified and systematic random sampling across zones that differ by access and density. Data was collected through structured questionnaires administered face to face.

The findings revealed that 38% of households rely on official collection services while 28% burn their waste and 17% pay informal collectors. Only 19% of respondents regularly separate waste for recycling. In terms of sanitation, 37% reported seeing uncollected waste piles almost daily and 39% expressed extreme concern about health risks such as cholera and malaria. Short field observations and recent secondary records supported the survey and confirmed that irregular waste collection remains a visible challenge in the area. study concludes that while household waste collection exists in Kanyama, its effectiveness is hindered by irregular schedules, inadequate infrastructure and low community participation. Strengthening coordination and promoting awareness can enhance sanitation outcomes and reduce public health risks.

Keywords: Household Waste Collection, Sanitation Standards, Lusaka, Kanyama Compound, Public Health

1. Introduction

This chapter introduces the study and sets its foundation. It outlines the background of solid waste management and its link to sanitation, defines the research problem, and states the general and specific objectives. Waste management is one of the biggest environmental and health challenges facing fast-growing cities, especially in developing countries.

1.1 Background

Solid waste management is a growing global concern with cities around the world facing mounting challenges in handling the vast quantities of waste generated by expanding populations and rapid urbanization. According to the World Bank, global waste is expected to increase by 70% by 2050 if current trends continue with developing countries bearing the brunt of this crisis (Kaza.S, 2018). Inefficient waste management systems contribute to severe environmental degradation, public health risks and economic burdens, particularly in urban areas where the infrastructure often struggles to keep pace with the demands of growing populations.

Globally around 1.3 billion tons of garbage is generated each day. This translates into each city dweller generating about 1.2 kilograms daily. It is estimated that this will increase to 2.2 billion tons by 2025. Sub-Saharan Africa generates approximately

62 million tons of garbage yearly. Similarly, in developed countries the amount of waste is rising due to the continuous increase of the population, changes in lifestyle and increasing urbanization (Hoornweg *et al*. 2023). According to the World Bank (2018) [32], the world generates over two billion tonnes of municipal solid waste annually with at least one-third of it not managed in an environmentally safe manner. Poor waste collection and disposal practices have been linked to outbreaks of cholera, typhoid, and other communicable diseases in many low- and middle-income countries. In high-income nations, organized and well-funded collection systems ensure relatively safe disposal, but in low-income regions, particularly urban informal settlements, collection services are often irregular or entirely absent (UN-Habitat, 2020). These gaps create health and environmental burdens that undermine global commitments to sustainable development, especially Sustainable Development Goal (SDG) 6 on clean water and sanitation and SDG 11 on sustainable cities.

At the regional level, sub-Saharan Africa faces unique waste management challenges due to rapid urbanization, weak infrastructure and limited financial resources. The African Development Bank (2020) reports that less than 50% of urban residents in the region have access to regular waste collection services. Many municipalities struggle with inadequate fleets of collection vehicles, poorly maintained dumpsites and lack of technical expertise. Studies also show that informal settlements are disproportionately affected as service provision tends to prioritize high-income neighborhoods (Kaza *et al*., 2018) [20]. The consequences include blocked drainage systems, widespread illegal dumping and environmental degradation all of which compromise sanitation and public health.

In developing countries like Zambia waste has become an increasingly complex problem to handle and manage. Waste generation has often been directly linked to the size of population and the various activities undertaken by different categories of the population (Sherman, 1996; Environmental Council of Zambia (ECZ), 2020). As population grows and more waste is generated the more difficult and complex waste handling and management becomes. The consequences of burgeoning populations in urban centres are more noticeable in developing countries as compared to the developed countries (Rajkumar and Ahmed, 2016). Developing countries are facing serious challenges with increased waste (Ahmed and Ali, 2020) while developed countries have over time developed rigorous waste management frameworks which ensure efficiency in waste collection, transportation and disposal (Ukpong and Udofia, 2021).

1.2 Statement of the Problem

the challenge of solid waste management continues to intensify with over 2.01 billion tonnes of municipal solid waste generated annually and projections showing this figure could increase to 3.4 billion tonnes by 2050 (Kaza *et al*., 2018) [20]. In low- and middle-income countries more than 90% of waste is often disposed of in open dumps or burned posing severe environmental and public health risks (Wilson, 2017). These conditions contribute to the spread of communicable diseases such as cholera, malaria and diarrhea which remain among the leading causes of mortality in sub-Saharan Africa. In Zambia, the situation reflects these global and regional patterns. Lusaka alone generates an estimated 1,200 tonnes of solid waste daily but less than 50% is collected and properly disposed of (Mulenga, 2019) [23].

The DMMU (2020) [10] has consistently highlighted waste accumulation as a disaster risk factor in urban communities warning that poor collection practices heighten the vulnerability of settlements to recurrent floods, cholera outbreaks and other sanitation-related emergencies. The Lusaka City Council which is tasked with overseeing waste management, faces major resource and logistical challenges especially in informal settlements. Kanyama Compound home to more than 300,000 residents (CSO, 2021), is one of the areas most affected by poor waste collection services. Studies have shown that uncollected waste in the compound often ends up in drains and open spaces, worsening seasonal flooding and contributing to recurrent cholera outbreaks (Phiri, 2020) [26]. Despite the establishment of community-based enterprises to enhance waste collection, effectiveness remains limited due to irregular service, lack of equipment and low community compliance.

1.3 General Objective

To examine the effectiveness of the household waste collection system in enhancing sanitation standards in Kanyama Compound, Lusaka.

1.4 Specific Objectives

1. To examine the current waste collection practices in Kanyama Compound.
2. To examine the effectiveness of the household waste collection system in enhancing sanitation standards.
3. To identify the challenges and limitations of the waste collection system.

1.5 Research Questions

1. What are the current waste collection practices in Kanyama Compound?
2. How effective is the household waste collection system in enhancing sanitation standards?
3. What challenges and limitations affect the household waste collection system in Kanyama Compound?

1.6 Significance of the Study

This study is important because it examines how cities manage household waste, a key issue that affects public health, the environment and daily living conditions. It evaluates how well waste collection systems work and whether they meet their goals of creating cleaner environments and reducing health risks. The findings will help policymakers and city authorities improve sanitation services, especially in fast-growing urban areas where population pressure and limited resources strain local systems. By identifying where collection systems fail and how they can be strengthened the study provides practical guidance for better coordination, stronger partnerships and improved service delivery.

The research also benefits communities, public health and development partners. Poor waste management leads to disease outbreaks such as cholera and malaria, especially in informal settlements. By showing how household waste systems influence health and hygiene, study helps authorities target preventive actions more effectively. It also highlights how awareness, cost, or access affect household participation in waste collection, offering ideas for better

engagement and education. Academically, the study fills a gap by focusing on household-level systems in low-income urban settings, providing evidence that future researchers, NGOs, and donors can use to design and evaluate effective sanitation programs.

1.7 Theoretical Framework

This study is guided by Systems Theory, which focuses on how different parts of a system depend on each other to function effectively. In household waste management, the inputs include waste bins, trucks, and labor; the processes involve organizing collection, transport, and disposal; and the outputs are cleaner surroundings and better public health. If one part fails, such as irregular collection or poor community involvement, the whole system becomes less effective. Viewing waste collection through this theory allows the study to see it as a connected process rather than a set of separate actions. It helps explain how institutional coordination, resource availability, and technical organization work together to shape sanitation outcomes.

The study also uses Social Practice Theory, which examines how social norms, habits, and daily routines shape people's behavior toward waste. Waste disposal is not only technical but also social, influenced by attitudes, knowledge, cost, and cultural views about cleanliness. This theory helps reveal why some households participate in collection systems while others do not. By combining both theories, the study shows how human behavior and institutional systems interact. Even a well-equipped system can fail if people ignore waste rules, and motivated communities cannot succeed without proper infrastructure. Together the two frameworks give a complete view of waste collection in Kanyama Compound showing how both structure and social practice influence sanitation.

2. Literature Review

2.1 Overview

Ali *et al*. (2019) [2] identifies some types of waste composition, those with relatively low organic contents and calorific value and those with high proportion of fines. The study arrived at the conclusion that waste composition and quantity in Karachi (Pakistan) varies by income group and with season. the study highlights the fact that there is lack of staff trained in solid waste management at Karachi Metropolitan Corporation and concluded that the lack of staff skilled in any method of safe waste disposal is a major constraint and therefore suggested that municipal capacity building should precede any new disposal operation. The case study of Karachi reveal that landfilling are preferable disposal option for Karachi because of the existing technical, institutional, financial, social and environmental conditions.

Waste collection is a service deemed so important that the law requires that it is provided for the benefit of the entire society and sothere is needto pay for it (Wilson *et al*., 2023). The collection and transportation of waste can be done by the relevant local authorities (Kawai and Tasaki, 2016) [19]. Normally three groups of stakeholders are involved. These may include the households generating the waste, the industry which needs the waste for recycling or re-use and private licenced transporters who may collect the waste from the primary storage to the recommended dumping sites. According to Post (2017), the vehicles used should be ideal and there must be no leakages so as to avoid contaminating areas along the way to the dumping site. Ukpong and Udofia (2021) however observe that there was lack of specialised waste collection and disposal vehicles such as sand tippers and trailer trucks for conveying waste to disposal site in the city of c) Silver Bin d) Plastic Container Uyo in Nigeria. This is a typical scenario that is prevalent in many cities in developing countries and Eawang (2018) adds that appropriate transport services are often lacking as well as are suitable treatment and disposal facilities in developing countries.

Wilson *et al*. (2012) contend that a proficient household waste collection system is fundamental to any effective urban sanitation strategy as it directly mitigates environmental exposure to hazardous waste. They demonstrate that consistent and comprehensive collection diminishes the risk of waterborne diseases by reducing the likelihood of contamination in drainage systems, water sources and communal areas. Not only the amount of waste collected, but also the dependability, frequency and fairness of services are used to measure effectiveness. When systems are well-managed sanitation standards go up because communities have cleaner streets, fewer bad smells and fewer problems with pests and insects. But in many low-income countries, these standards are not often met. This is because service is not consistent which hurts health outcomes even though collection structures are in place.

Kaza *et al*. (2018) [20] present global evidence indicating that collection coverage is the paramount predictor of enhanced sanitation outcomes. According to their report countries with more than 80% collection coverage have a lot fewer outbreaks of sanitation-related diseases than countries with less than 50% collection coverage. They also stress that for the system to work there needs to be more than just trucks and bins. Households also need to be able to count on their trash being picked up on a regular basis. services are not always available, people dump or burn trash illegally which defeats the purpose. In sub-Saharan Africa's urban areas, where collection is often incomplete, the promise of better sanitation is still far away even though efforts have been made to set up structured systems.

UN-Habitat (2020) says that fairness is a big part of effectiveness. A waste collection system that focuses on wealthy neighbourhoods and ignores informal settlements does not improve sanitation on a city-wide level. The report stresses that sanitation standards in cities are linked. For example trash left uncollected in one part of a city can lead to blocked drains, flooding, and health risks that affect other areas. So household-level systems can not be called effective unless they include everyone. This is especially important for cities like Lusaka where many people live in informal settlements but do not get the services they need.

Mulenga (2019) [23] examined household waste collection in Lusaka and discovered that, although coverage has increased through community-based enterprise (CBE) models, their efficacy in enhancing sanitation standards is still constrained. Households often said that collection schedules were not regular and that they did not get good information from providers. This led to piles of trash that never went away in public places, especially in hard-to-reach areas. Because of these conditions, sanitation improvements were only slight, even though households were technically part of a collection system.

According to UNEP (2022) there is a dire need of creating environmental education and awareness, practices and

knowledge in high schools with aim of enhancing environmental monitoring and management in the country for both present and future periods. This will go a long way in enhancing education on environment in an attempt to reorienting education so as to restore environmental competence owing to its basic aim of attaining personal and social competence (Shobeiri *et al*., 2017).

2.2 Personal Critique of the Literature Review

Authors like Kaza *et al*. (2018) [20] and Wilson *et al*. (2022) give strong global views that show clearly that the coverage of waste collection is a key factor in sanitation outcomes. Their work is helpful for putting household-level systems in the context of discussions about sustainable development. The strength of global reports is also their main weakness: they make broad statements about conditions and do not often show how things are really happening on the ground. In an informal settlement where trucks can not get to narrow paths or where families can not pay user fees what counts as "coverage" on paper often looks very different.

Baud *et al*. (2001) and Mulenga (2019) [23] emphasize the financial vulnerability of community-based enterprises (CBEs); comprehensive discourse regarding the sustainability of waste systems beyond donor or municipal subsidies is limited. Affordability continues to pose a challenge for households; however, comprehensive examinations of solutions involving subsidies, cross-subsidization or innovative financing models are infrequently undertaken. If long-term sustainability is not taken into account, literature could talk about waste collection systems that work in the short term but fall apart when funding runs out or people stop following the rules. This creates a significant gap in policy and research that subsequent studies need to fill.

2.3 Establishment of Research Gaps

Global studies like Kaza *et al*. (2018) [20] and Wilson *et al*. (2020) show that better health outcomes are linked to higher collection coverage but these studies are mostly general and comparative. They seldom consider the quotidian realities of waste management systems in informal settlements where infrastructure, income and governance frameworks markedly contrast with formal urban regions. This gap makes it unclear if lessons learned around the world apply directly to low-income neighbourhoods in Lusaka. Regional studies from sub-Saharan Africa such as Parrot *et al*. (2009) [24] and Otieno and Kibwage (2018), elucidate the challenges of affordability, inconsistent service and inadequate infrastructure. the majority of these studies conclude with merely descriptive accounts. They acknowledge the existence of challenges but infrequently assess sanitation outcomes directly. Few people connect how well household waste is collected to specific signs, like less flooding, cleaner drains or fewer cases of diarrhea. This means that the regional literature points out problems but it does not give much proof that working household collection systems actually lead to better sanitation standards.

3. Research Methodology

chapter explained how the study was carried out to answer the research questions in a clear and practical way. It outlined the research design, sampling plan, data collection tools and analysis procedures. A descriptive cross-sectional survey design was used because it captured household waste management practices and sanitation conditions at a single point in time. This approach provided reliable snapshot of the situation without requiring long-term data collection. The study focused on 80 households selected through a stratified sampling method to ensure fair representation across zones. Structured questionnaires were used to collect data on household waste practices, service reliability and sanitation perceptions.

Data were collected through face-to-face interviews conducted with adults responsible for household waste decisions. The questionnaire contained both closed and open-ended questions allowing for statistical comparison while also capturing detailed insights. Responses were coded and analyzed using descriptive statistics such as frequencies and percentages with results presented in tables and charts. Triangulation was used to strengthen validity by combining survey findings with field observations and secondary data from municipal and health reports.

Ethical standards guided every stage of the study. Participation was voluntary and respondents provided informed consent after being told the purpose of the research and their right to withdraw at any time. Personal identities remained confidential and data were stored securely. Enumerators were trained to act professionally, remain neutral and respect cultural norms. These measures ensured that the research upheld integrity, protected participants and produced credible findings to support improvements in urban waste management.

4. Research Findings and Discussions

Presentation of Results Based on The Background Characteristics of Respondents

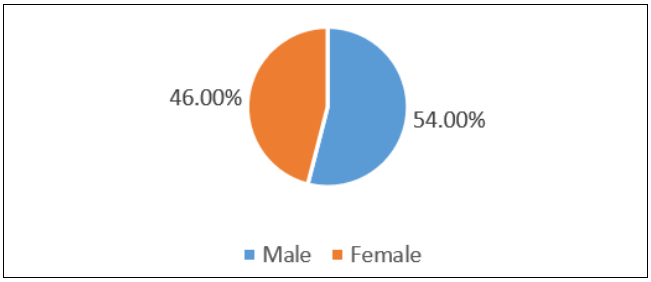

Table 4.1: Gender

Table 4.1 shows the gender distribution of respondents. Out of the 100 participants, 54% were male while 46% were female. This indicates that both genders were fairly represented in the study, with a slight dominance of male respondents.

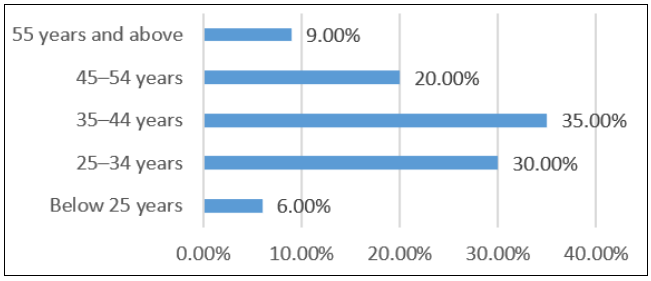

Table 4.2: Age Group

As shown in Table 4.2, the largest age group among respondents was 35–44 years, representing 35% of the sample. This was followed by 25–34 years (30%), 45–54 years (20%), 55 years and above (9%), and below 25 years (6%). The data indicate that most respondents were in their productive and economically active years, likely involved in household management and daily waste disposal activities.

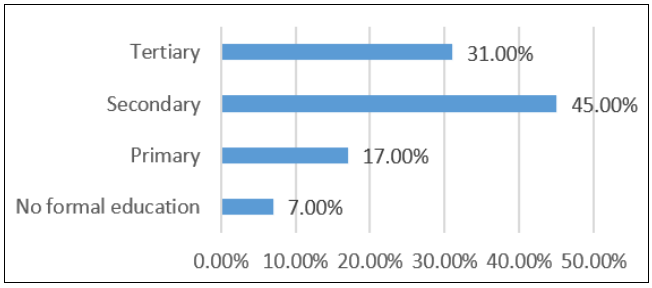

Table 4.3: Highest level of education

Table 4.3 presents the educational background of respondents. The majority, 45%, attained secondary education, followed by 31% with tertiary education, 17% with primary education, and 7% with no formal education. These findings suggest that most residents in Kanyama Compound possess at least basic literacy skills, enabling them to understand and participate in waste management initiatives.

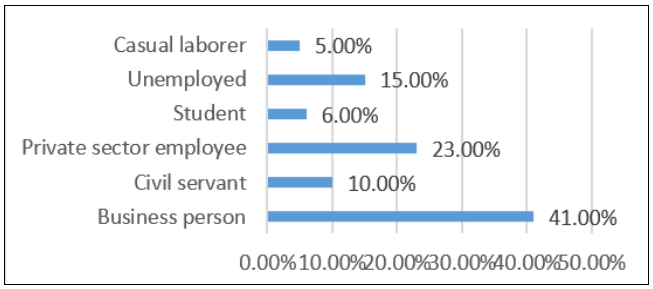

Table 4.4: Occupation

Table 4.4 presents the occupational distribution of respondents. The results indicate that a majority, 41%, of respondents were business persons, reflecting the high prevalence of informal and small-scale trading activities common in Kanyama. This was followed by 23% who were private sector employees, while 15% were unemployed and 10% worked as civil servants. A smaller proportion, 6%, were students, and 5% were engaged as casual laborers in short-term or informal jobs.

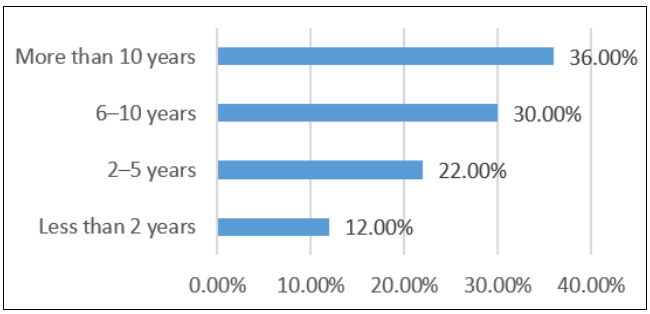

Table 4.5: Length of Stay in Kanyama Compound

Table 4.5 shows that 36% of respondents had lived in Kanyama Compound for more than 10 years, 30% for 6–10 years, 22% for 2–5 years, and 12% for less than 2 years. The findings reveal that a majority of respondents have resided in the area for an extended period, suggesting a deep familiarity with the waste collection system and its evolution over time.

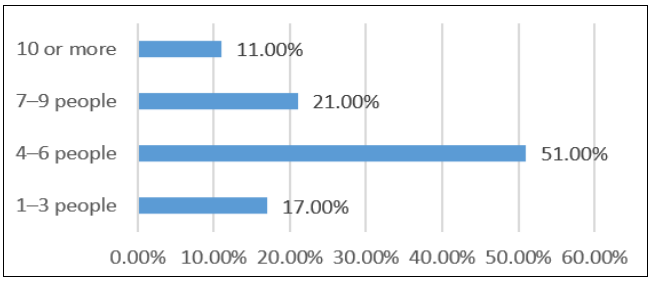

Table 4.6: Size of household

Table 4.6 presents the distribution of respondents according to household size. The results show that 51% of respondents lived in households with 4–6 members, followed by 21% with 7–9 members, 17% with 1–3 members, and 11% with 10 or more members. This indicates that most households in the study area are moderately large typically consisting of four to six people.

4.2 Presentation of Results Based on the Current Household Waste Collection Practices

Table 4.7: Primary Method of Waste Disposal

Waste Disposal Method	Frequency	Percent
Official collection by LCC/private company (collected from home or communal point)	38	38.0%
Burning it ourselves on our plot	28	28.0%
Paying an informal collector to take it away	17	17.0%
Dumping it in a nearby open space, drain, or river	13	13.0%
Burying it on our plot	4	4.0%
Total	**100**	**100.0%**

Table 4.7 presents the main methods used by households to dispose of general waste. The findings show that 38% of respondents reported using official collection services provided by the Lusaka City Council (LCC) or private companies, while 28% indicated that they burn their waste on their plots. In addition, 17% paid informal collectors to take waste away, 13% disposed of waste by dumping it in open spaces or drains, and 4% buried it on their plots.

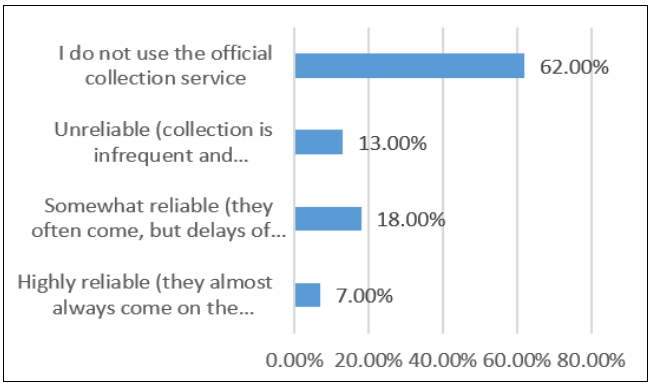

Table 4.8: Reliability of Waste Collection Services

As shown in Table 4.8, among respondents using official waste collection, only **7%** described the service as highly reliable, while 18% found it somewhat reliable, and 13% rated it as unreliable. The majority, 62**%**, indicated that they do not use official collection services at all. This means that most households either rely on self-disposal or informal collectors.

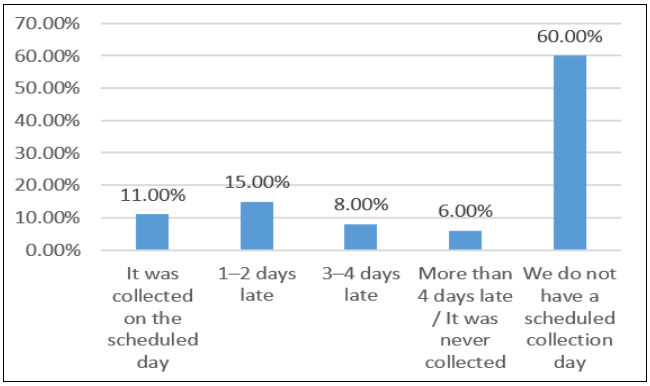

Table 4.9: Timeliness of Waste Collection

Table 4.9 shows the timeliness of waste collection services in relation to scheduled days. Only 11% of respondents reported that their waste was collected on the scheduled day, while 15% said it was 1–2 days late, and 8% experienced delays of 3–4 days. A small portion, 6%, stated that waste was collected more than 4 days late or not at all, while a significant 60% reported that they do not have a scheduled collection day.

Table 4.10: Indoor Waste Storage Practices

Waste Storage Method	Frequency	Percent
A dedicated covered bin with a lid	28	28.0%
An open container (e.g., bucket, bowl)	25	25.0%
In a plastic bag, tied and placed in a corner	41	41.0%
We do not store it; we dispose of it immediately outside	6	6.0%
Total	**100**	**100.0%**

Table 4.10 outlines how households store waste indoors before disposal. The majority, 41%, store their waste in plastic bags tied and placed in a corner, 28% use a dedicated covered bin with a lid, and 25% store waste in open containers such as buckets or bowls. Only 6**%** reported disposing of waste immediately outside without storage. The dominance of temporary plastic bag storage and open containers suggests inadequate access to proper storage facilities, which may expose households to pests and unpleasant odors.

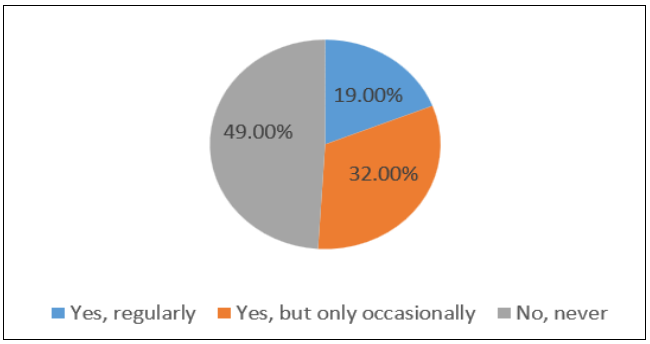

Table 4.11: Practice of Waste Separation

Table 4.11 presents information on whether households practice any form of waste separation such as setting aside bottles, plastics, or paper for recycling or selling. The findings reveal that 49% of respondents reported that they never practice waste separation, 32% indicated they do so occasionally, while only 19**%** said they regularly separate waste.

Table 4.12: Major Household Challenges in Waste Disposal

No.	Sample Response
1	The collectors come irregularly, and sometimes they skip our street for weeks.
2	We pay the waste collectors, but they still don't show up on time.
3	There are no bins nearby, so people just throw waste anywhere.
4	The waste skips are always full, and dogs or people scatter the rubbish.
5	We have to burn our waste because the trucks rarely come.
6	There's a bad smell near the dumpsite, especially during the hot season.
7	When it rains, uncollected waste blocks the drains and causes flooding.
8	Informal collectors mix all kinds of waste and make the area dirty.
9	We don't have proper containers for storing garbage before it's collected.
10	The fee for private collection is too high for most residents.
11	Sometimes, the waste collectors demand extra cash before they take the rubbish.
12	Flies and rats are a big problem because waste stays too long before collection.
13	We are never informed about the collection schedule or changes.
14	People dump waste in open spaces, and no one does anything about it.
15	Even when waste is collected, some is left behind and not cleaned properly.

A few random responses from residents revealed a range of frustrations regarding household waste disposal. Many complained about irregular collection schedules and poor communication from waste service providers.

4.3 Presentation of Results Based on the Effectiveness of the Collection System on Sanitation Standards

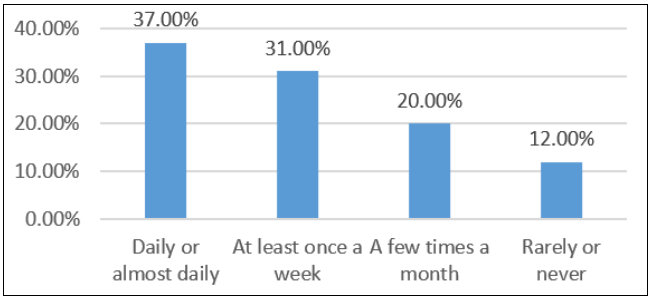

Table 4.13: Frequency of Overflowing Waste or Uncollected Piles

Table 4.13 shows how often respondents observed overflowing or uncollected waste in their neighborhoods over the past three months. The findings indicate that 37% reported seeing such waste daily or almost daily, 31% observed it at least once a week, and 20% a few times a month, while only 12% said they rarely or never saw it.

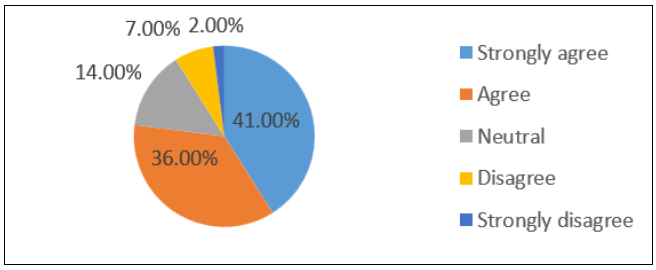

Table 4.14: Perceived Link between Irregular Collection and Littering

As shown in Table 4.14, a majority of respondents agreed that irregular waste collection directly contributes to increased dumping and littering. Specifically, 41% strongly agreed, 36% agreed, while only 7% disagreed, and 2% strongly disagreed. Another 14% remained neutral. The strong consensus among respondents reflects a clear understanding of how unreliable collection services lead to unsanitary behaviors, such as dumping in open spaces, drains, and roadsides.

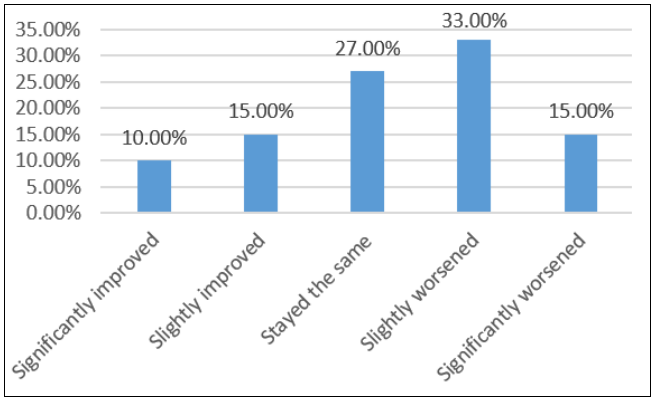

Table 4.15: Perceived Changes in General Cleanliness and Sanitation

Table 4.15 presents respondents' views on changes in cleanliness and sanitation compared to one year ago. About 33% felt that conditions had slightly worsened, 15% said they had significantly worsened, and **27%** believed they had stayed the same. Only 15% reported that cleanliness had improved to some degree. These findings indicate that despite ongoing collection efforts, sanitation standards have not significantly improved.

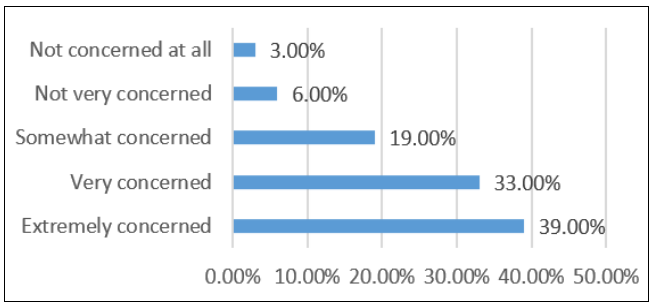

Table 4.16: Concern About Health Risks from Waste Accumulation

Table 4.16 shows that health concerns related to poor waste management remain high among residents. A total of 39% of respondents said they were extremely concerned, 33% were very concerned, and 19% were somewhat concerned. Only 9% were either not very concerned or not concerned at all. These findings show that the majority of households recognize the health risks associated with uncollected waste, such as cholera, diarrhea, and malaria.

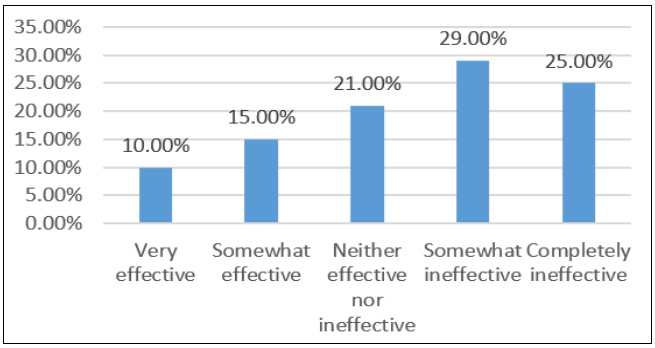

Table 4. 17: Effectiveness in Preventing Drain Blockages

As shown in Table 4.17, respondents expressed mixed opinions regarding the effectiveness of the waste collection system in preventing the blockage of drains. The largest group, 29%, rated it as somewhat ineffective, while 25% viewed it as completely ineffective. Only 15**%** considered it somewhat effective, 10% said it was very effective, and 21% remained neutral. These results reveal a general lack of confidence in the system's ability to control plastic and solid waste that clogs drainage channels. Blocked drains often lead to flooding and stagnant water, worsening sanitation and increasing the risk of waterborne diseases.

Table 4.18: Expected Environmental Improvements with Reliable Waste Collection

No.	Sample Response
1	The area would be cleaner and free from the bad smell of rotting waste.
2	We would have fewer flies and rats around our homes.
3	Children could play outside without stepping on rubbish.
4	There would be less flooding because waste would not block the drains.
5	The air quality would improve, and the environment would look neater.
6	Mosquitoes would reduce because there would be fewer stagnant waste pools.
7	People would stop dumping in open spaces since bins would be emptied on time.
8	The market area would be cleaner and more attractive to customers.
9	We would not need to burn waste, so the smoke problem would go away.
10	Fewer diseases like cholera and diarrhea would spread in the rainy season.
11	The community would look more organized and hygienic.
12	Foul smells would disappear, especially in the evenings.
13	The roadsides would be clear, making it easier for people to walk.
14	There would be fewer insects and pests entering homes.
15	The overall environment would feel safer and more pleasant to live in.

As shown in table 4.18, a few random responses from residents highlighted that regular weekly waste collection would bring visible improvements to their surroundings. Most respondents expected cleaner streets, fewer foul smells and a reduction in pests such as flies, rats and mosquitoes.

4.4 Presentation of Results Based on the Challenges and Limitations of the Existing System

Table 4.19: Major Barriers to Effective Waste Collection

Barrier to Effective Waste Collection	Frequency (100)	Percentage (%)
Lack of funding/infrastructure (too few trucks, skips)	33	33.0
Poor coordination and management by authorities	23	23.0
Lack of accountability (no one to complain to when service fails)	15	15.0
Physical inaccessibility of the area for trucks	13	13.0
Low willingness of residents to pay for services	16	16.0
Total	**100**	**100.0**

Table 4.19 presents respondents' views on the most significant barriers to effective waste collection in Kanyama. The majority, 33%, identified lack of funding and infrastructure such as too few trucks or skips, as the main challenge. This was followed by 23% who cited poor coordination and management by authorities, and 16% who mentioned low willingness of residents to pay for services. Another 15% pointed to lack of accountability, while 13% mentioned physical inaccessibility of some areas to collection trucks.

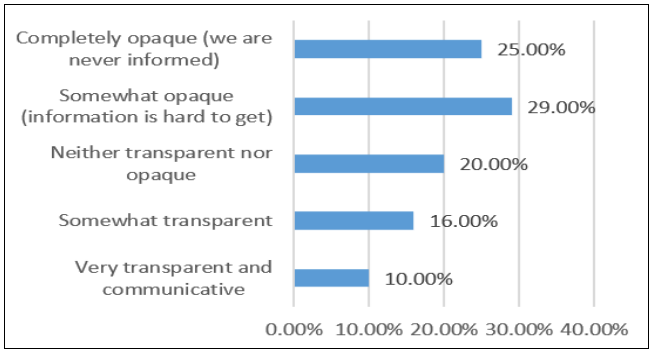

Table 4.20: Communication and Transparency from Authorities

As shown in Table 4.20, perceptions of communication and transparency from the Lusaka City Council (LCC) or its contractors were generally low. About 29% of respondents described communication as somewhat opaque, while 25% said it was completely opaque, meaning they were never informed of collection schedules or service changes. Only 10% rated the system as very transparent and communicative, and 16% said it was somewhat transparent. Another 20% felt it was neither transparent nor opaque. The findings reveal a lack of effective communication between service providers and the community.

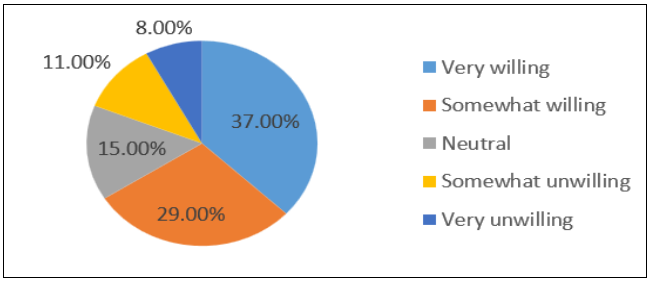

Table 4.21: Willingness to Pay for Improved Collection Services

Table 4.21 indicates the level of willingness among households to pay for more reliable waste collection services. A total of 37% of respondents stated they were very willing, and 29% were somewhat willing, showing a strong readiness to contribute financially if services improved. However, 15% were neutral, 11% were somewhat unwilling, and 8% were very unwilling.

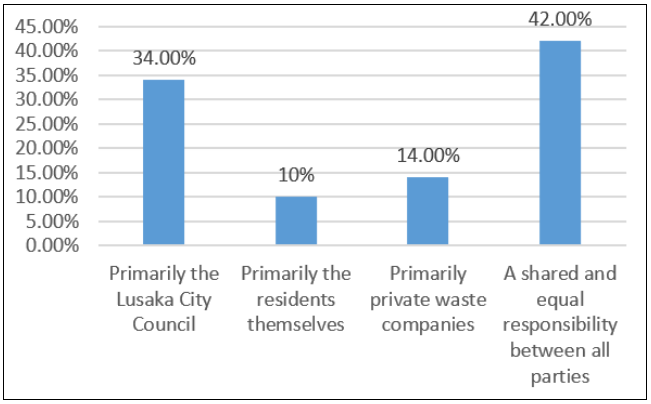

Table 4.22: Responsibility for Waste Collection and Disposal

Table 4.22 explores who respondents believe holds the greatest responsibility for ensuring proper waste collection and disposal. The largest proportion, 42%, stated it is a shared responsibility between all parties, including the LCC, private companies, and residents. About 34% felt the Lusaka City Council is primarily responsible, while 14% pointed to private waste companies, and 10% believed it rests mainly with residents themselves. These findings suggest that while residents recognize their role, they still expect greater leadership and oversight from public authorities.

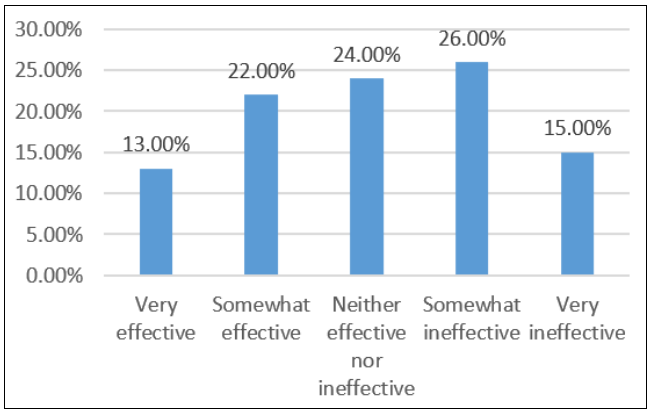

Table 4.23: Effectiveness of Local Community Leaders in Advocating for Better Waste Management

Table 4.23 shows respondents' views on how effective local community leaders, such as ward councillors and members of neighborhood health committees, have been in advocating for improved waste management services. The results reveal that 26% rated them as somewhat ineffective, while 24% felt they were neither effective nor ineffective. A further 22% considered them somewhat effective, 15% viewed them as very ineffective, and only 13% found them very effective. These results suggest that community leaders play a limited role in promoting waste management improvements.

Table 4.24: Fix the waste collection problem in Kanyama

No.	Sample Response
1	Increase the number of trucks and bins so waste can be collected on time.
2	Hire more workers and make sure they follow a fixed schedule.
3	Educate residents about proper waste disposal and penalties for littering.
4	Monitor private contractors closely to ensure they do their job properly.
5	Provide free or subsidized bins to households.
6	Repair and clear blocked roads so trucks can reach all parts of the compound.
7	Establish clear communication channels for residents to report missed collections.
8	Create local waste collection committees in each zone to oversee service delivery.
9	Increase funding and support from the Lusaka City Council for waste management.
10	Start recycling initiatives to reduce the amount of waste dumped.
11	Introduce strict fines for illegal dumping and burning of waste.
12	Engage community leaders and residents to take joint responsibility.
13	Publish and follow a fixed waste collection timetable.
14	Partner with private companies to invest in modern waste management equipment.
15	Launch awareness campaigns on how proper waste management improves health.

According to 4.24, a few random responses from participants highlighted practical and community-driven solutions to the waste collection challenges in Kanyama. The most common suggestion was to increase the number of trucks and waste bins, ensuring timely and reliable collection across all areas. Respondents also emphasized the need for better management and monitoring of private contractors as well as consistent schedules to avoid irregular waste pickups.

5. Conclusion and Recommendation

5.1 Conclusion

The study examined how the household waste collection system in Kanyama Compound Lusaka, affected sanitation standards. The results showed that although waste management structures existed, they were inadequate to meet community needs. Only 38% of households used official collection services, while most relied on burning or dumping waste in open spaces. Accessibility issues, high costs and irregular collection contributed to poor sanitation, with 37% of respondents reporting uncollected waste daily. Irregular collection also increased illegal dumping and littering leaving many streets dirty and drains blocked, especially during the rainy season. findings revealed that poor coordination between the Lusaka City Council, service providers and residents continued to hinder progress toward cleaner environments.

Major challenges included limited funding, weak infrastructure and low resident participation. About 33% of respondents cited lack of resources as the main obstacle while 23% pointed to poor coordination among authorities. many residents expressed a willingness to pay for reliable services and supported stronger community involvement. The study concluded that effective waste management requires both institutional improvement and community empowerment. Residents, local leaders and the city council must share responsibility through better communication, awareness campaigns and education on proper waste practices. With improved coordination, transparency and investment, Kanyama can move toward a more sustainable waste collection system that protects health and enhances urban living conditions.

5.2 Recommendation

The study recommended a set of practical steps to improve sanitation and household waste collection in Kanyama Compound. First the Lusaka City Council and its partners should strengthen logistics and infrastructure by adding more skips, collection trucks and public bins. Clear routes and fixed collection times would help households plan better and reduce illegal dumping and open burning. Second, the study stressed the need for strong community awareness. Local campaigns through schools, churches and neighborhood groups should explain the health risks of poor disposal and promote better practices such as proper storage and composting.

The findings also highlighted the importance of fair and simple payment systems for waste services. Flexible options like low monthly fees, mobile payments or shared community schemes would increase uptake. Subsidies should support low income households so that no one is excluded. Clear rules and transparent charges would build trust between residents and service providers and support more reliable collection. Overall the study showed that better infrastructure, stronger community engagement and affordable payment systems must work together to create a cleaner and healthier community.

6. References

1. Agboje AI, Alake OA, Babalola MA. Municipal solid waste management in Nigeria: A case study of Lagos. International Journal of Environment and Waste Management. 2018; 21(2):97-109.
2. Ali M, Wang J, Khan S. Municipal solid waste management in Karachi: Current practices and future challenges. Journal of Solid Waste Technology and Management. 2019; 45(3):321-330.
3. Bernstad A, *et al*. Community participation and solid waste management: A case of peri-urban Zambia. Journal of Environmental Planning and Management. 2022; 65(3):541-556.
4. Bundhoo ZMA. Solid waste management in developing countries: A critical review. Waste Management. 2018; 75:258-272.
5. Chanda M. Community participation and household waste management in Lusaka's informal settlements. Zambia Journal of Social Development. 2020; 5(2):45-59.
6. Chulu K. By-law enforcement and solid waste management in Lusaka. Zambian Journal of Public Policy. 2017; 3(2):72-85.
7. Cofie O, Kranjac-Berisavljevic G, Drechsel P. The fate of urban waste: Perspectives of organic waste management in developing countries. International Journal of Environmental Technology and Management. 2019; 22(1):56-68.
8. Cointreau-Levine S, Coad A. Private sector participation in municipal solid waste services in developing countries. World Bank, 2000.
9. Creswell JW, Creswell JD. Research design: Qualitative, quantitative, and mixed methods

approaches (5th ed.). Sage, 2018.
10. Disaster Management and Mitigation Unit (DMMU). Annual report on disaster risk and sanitation in urban Zambia. Government of Zambia, 2020.
11. Douti NB, Abanyie SK, Ampofo S. Pricing challenges in private sector solid waste management in Ghana. Waste Management & Research. 2017; 35(2):150-158.
12. Edema M, Banda S, Zulu T. Attitudes toward solid waste management in Ndola: An empirical review. Zambian Journal of Environmental Health. 2022; 8(1):14-29.
13. Environmental Council of Zambia (ECZ). National solid waste management strategy. Government of Zambia, 2008.
14. Fink A. How to conduct surveys: A step-by-step guide (7th ed.). Sage, 2020.
15. Hair JF, Page MJ, Brunsveld N. Essentials of business research methods (4th ed.). Routledge, 2020.
16. Henry RK, Yongsheng Z, Jun D. Municipal solid waste management challenges in developing countries – Kenyan case study. Waste Management. 2016; 26(1):92-100.
17. Hoornweg D, Bhada-Tata P, Kennedy C. Waste production projections for developing countries. Waste Management & Research. 2018; 36(3):199-210.
18. Kasseva ME, Mbuligwe SE. Waste composting in Dar es Salaam: Sustainability and implications. Resources, Conservation and Recycling. 2000; 30(1):23-36.
19. Kawai K, Tasaki T. Revisiting estimates of municipal solid waste generation per capita and their reliability. Journal of Material Cycles and Waste Management. 2016; 18(1):1-13.
20. Kaza S, Yao L, Bhada-Tata P, Van Woerden F. What a Waste 2.0: A global snapshot of solid waste management to 2050. World Bank, 2018.
21. Medina M. Waste picker cooperatives in developing countries: Sustainability and challenges. Waste Management. 2020; 100:84-94.
22. Moh Y. Solid waste management in Lusaka: Emerging health risks. Zambia Public Health Review. 2017; 12(1):22-34.
23. Mulenga B. Assessing the performance of community-based enterprises in solid waste collection in Lusaka. Zambian Journal of Environmental Studies. 2019; 4(1):23-36.
24. Parrot L, Sotamenou J, Dia BK. Municipal solid waste management in Africa: Strategies and livelihoods in Yaoundé, Cameroon. Waste Management. 2009; 29(2):986-995.
25. Patton MQ. Qualitative research & evaluation methods (4th ed.). Sage, 2015.
26. Phiri T. Household waste disposal and cholera risks in Lusaka's high-density areas. Zambia Public Health Journal. 2020; 2(1):15-27.
27. Saunders M, Lewis P, Thornhill A. Research methods for business students (8th ed.). Pearson, 2019.
28. Simelane T, Mohee R. Waste management challenges in African cities. African Journal of Environmental Management. 2022; 14(2):55-71.
29. Tembo C, Banda S. Solid waste management and public health risks in peri-urban Lusaka: Evidence from Kanyama and George Compounds. Zambia Health Review. 2022; 7(2):33-48.
30. United Nations Environment Programme (UNEP). Africa waste management outlook. UNEP, 2019.
31. Wilson DC, Velis C, Rodic L, Modak P. Global status of waste management and future directions. Waste Management & Research. 2019; 37(1):1-7.
32. World Bank. Urban sanitation and waste management in developing countries. World Bank, 2018.
33. World Health Organization (WHO). Sanitation safety planning: Manual for safe use and disposal of wastewater, greywater and excreta. WHO Press, 2018.