



# REPORT

Inventory for Formal and Informal Faecal Sludge Emptiers and the Resource Recovery and Reuse (RRR) Private Sector in Kampala



**KAMPALA CAPITAL CITY AUTHORITY**  
**PUBLIC HEALTH AND ENVIRONMENT DIRECTORATE**

# REPORT

## INVENTORY FOR FORMAL AND INFORMAL FAECAL SLUDGE EMPTIERS AND THE RESOURCE RECOVERY AND REUSE (RRR) PRIVATE SECTOR IN KAMPALA

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## ACRONYMS AND ABBREVIATIONS

BMGF	Bill and Melinda Gates Foundation
BMZ	Federal Ministry for Economic Cooperation and Development
CIDI	Community Integrated Development Initiatives
DWD	Directorate of Water Development
FS	Faecal Sludge
FS C&T	Faecal Sludge Collection and Transportation Operators
FSM	Faecal Sludge Management
GDC	German Development Cooperation
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
KCCA	Kampala Capital City Authority
KEA	Kampala Emptiers Association
MoU	Memorandum of Understanding
MWE	Ministry of Water and Environment
NEMA	National Environment Management Authority
NETWAS	Network for Water and Sanitation
NWSC	National Water and Sewerage Corporation
PEAU	Private Emptiers Association of Uganda
PPE	Personal Protective Equipment
RRR	Resource Recovery and Reuse
RUWASS	Reform of Urban Water and Sanitation Sector
SDC	Swiss Development Cooperation
VHT	Village Health Team
WFP	Water for People
WHO	World Health Organisation

# Executive Summary



## Background

In Kampala, about 90% of the people rely on on-site sanitation solutions, which cannot be considered “improved” or “acceptable” in most cases: too many households share one toilet; pit-latrines are unlined, filled with solid wastes, and hard to access for emptying services, ultimately leading to filled-up facilities that are either abandoned or directly emptied into the environment, posing health and environmental risks for the city and its people. It is estimated that 900m<sup>3</sup> of faecal sludge (FS) is generated in Kampala every day, whereas only 390m<sup>3</sup> are collected, representing a collection rate of 43% (KCCA/BMGF, 2014).

The GIZ Reform of the Urban Water and Sanitation Sector (RUWASS) Programme has a strong focus on supporting private sector engagement in the urban sanitation sector while at the same time strengthening the regulatory framework and governing institutions such as Kampala Capital City Authority (KCCA). The interventions towards improved sanitation in Kampala also draw on the results of the Resource Recovery & Safe Reuse (RRR) Project Phase I, funded by the Swiss Development Cooperation (SDC) between 2011 and 2014.

Phase II of the RRR Project is based on a co-funding agreement between SDC and the German Government (German Development Cooperation, GDC), implemented by GIZ RUWASS. It will involve piloting of different sanitation interventions by KCCA over the period of May 2016 to May 2017 in five pre-selected parishes in Kampala.

The specific objective of this assignment was to develop an Inventory of Faecal Sludge Emptiers and Resource Recovery and Reuse (RRR) Practitioners (both formal and informal) in Kampala in order to establish an overview of the current private sector set-up. The methodology for executing the assignment involved a literature review, stakeholder consultations with key institutions such as KCCA, National Water and Sewerage Corporation (NWSC) and National Environment Management Authority (NEMA). Interviews were also held with 7 private cesspool providers, 4 Gulper operators<sup>1</sup> who own tricycles, 4 manual emptiers and 2 RRR entrepreneurs. This was followed by data analysis and report writing.

## Faecal Sludge Emptying and RRR Businesses Setup Overview

Four main categories of FS collection and transportation emptiers and RRR private sector practitioners are operational in Kampala including: i) Cesspool truck operators; ii) Gulper operators; iii) Manual emptiers; iv) Re-users of FS<sup>2</sup>. Most of the cesspool operators work informally without a certificate of incorporation, trading license, NEMA license or a formal office. Only one company (W Mulindwa & E Nakanwagi General Agencies LTD) has a NEMA license for transportation of FS and a formal office based in Rubaga. Two of the cesspool companies had certificates of incorporation. A comprehensive list of the over 70 cesspool trucks, their owners and contacts in Kampala was developed to facilitate further selection and formal engagement of the operators. Only 4 Gulper entrepreneurs are active in Kampala and three of them have certificates of incorporation. The manual emptiers are largely informal in their operations while the RRR businesses are a mixture of both formal and informal operations.

## Management and Operational Arrangements

The FS/RRR businesses employ between 2 - 8 people mostly on casual terms. Pit emptying is the main activity carried out. However, some operators also carry out other tasks to supplement their income e.g. construction, maintenance, fumigation etc. The entrepreneurs get their business mostly through referrals/word of mouth, phone calls and commission agents. The business hours for the cesspool trucks and Gulpers are between 6 a.m. – 7 p.m. whereas the manual emptiers work mostly at the time convenient for the customer especially in the night to avoid being caught by the authorities and to minimize foul smell of FS to neighbours.

Households form the highest number of customers for the FS emptying business. On average, each cesspool truck collects two trips of FS per day; charges per trip vary from UGX 70,000 – UGX 190,000. Gulper charges range

<sup>1</sup> - 10 gulper operators exist in Kampala. However, only 4 own Tricycles for transportation of FS

<sup>2</sup> - This assessment focused of FS re-users. However, re-users of other waste streams such as solid biodegradable waste exist in Kampala.

between UGX 25,000 – UGX 40,000 per barrel (200L). Manual emptying costs vary between UGX 20,000 – UGX 500,000 depending on the nature of the sanitation facility. FS compost costs about UGX 5,000 per 50 Kg while briquettes cost UGX 70,000 per 50 Kg bag.

## Equipment and Financial Information

The cesspool trucks are bought second hand from the car bonds in Kampala. The price of the trucks ranges between UGX 60 – 120 million depending on the truck size. Gulpers are locally fabricated by Watcom Engineering LTD in Katwe. Tricycles are also locally assembled. The initial capital cost for the Gulper business varies depending on the mode of FS transportation to use (i.e. about UGX 1.3 million excluding pick-up/tricycle cost). The rest of the required tools and Personal Protective Equipment (PPE) are locally available in the hardware stores.

The capital cost estimate for the briquette machine and equipment (simple poly-tunnel, drum burner etc.) is UGX 1.5 million.

Most of the entrepreneurs used personal savings and loans to start-up their businesses. Access to bank loans is still a challenge in the sector due to the informal nature of the business operations.

## Business Challenges

Some of the cross-cutting challenges facing the FS/RRR businesses include:

- » Increment of dumping fees charged by NWSC (from UGX 7,000 to UGX 14,000 per trip of 4m<sup>3</sup>)
- » High competition from heavily subsidized partners like CIDI who charge below the market rates for emptying using cesspool trucks
- » High fuel costs
- » Low demand especially in the dry season
- » Slum areas are not well planned and difficult to serve
- » Poor quality second hand equipment with high maintenance costs
- » High capital costs for acquiring new trucks
- » Lack of a fund that can be accessed by entrepreneurs to expand their businesses
- » Limited operating hours (8 a.m. – 6 p.m.) of NWSC dumping facilities
- » High transport costs pose the biggest challenge for the Gulper entrepreneurs. Without ownership of a pick-up or tricycle, the Gulper model does not work effectively.
- » The constant direct contact with FS which affects the health of the operators
- » Unreasonable customers who refuse to effect payment after service delivery leaves the manual operators in a dilemma with nowhere to go for redress since the business is considered illegal
- » Low demand for FS compost products
- » Poor maintenance of latrines which make emptying and composting difficult
- » High capital cost for briquette making machines

## Recommendations for consideration in the RRR pilot project

1. Initiate engagement/discussions with the FS private sector players (especially the cesspool entrepreneurs) on the planned restructuring of the FSM operational framework where the city is to be zoned in a bid to secure their buy-in and participation. The information provided in the inventory report should be used as a starting point for contacting the different private players.
2. Develop and implement a capacity enhancement/training programme for the operators specifically targeting the following aspects: formalization of their businesses; acquisition of trading licenses; acquisition of environmental licenses; occupational health and safety requirements; training on keeping operational and financial records of their activities; access to financing opportunities, etc.
3. Pre-selection of private player partners to work with in the FS/RRR pilot phase under the RRR Project Phase II should be based on the following aspects: Status of formalization of their business operations e.g. certificate of registration, bank account, staff levels etc; capacity in terms of equipment sizes and numbers to suit/match the emptying needs in the selected pilot areas; work experience in terms of years of operating the FS/RRR business; willingness to work in a regulated market where prices are negotiated and fixed.
4. As part of the planned FSM/RRR pilots in Kampala, there is need to develop a system that allows linking the operations of manual operators, Gulpers, cesspool operators and FS re-users as an incentive to discourage inappropriate disposal of FS on the one hand and to develop the FS reuse market on the other. For example having FS transfer stations in different parts of the city would create the linkage between the Gulpers (dispose FS at the transfer stations) and cesspool operators (collect FS from the transfer stations). The Gulper entrepreneurs could also be encouraged to take on some of the manual emptiers as workers in their respective areas.
5. KCCA should fast track the development and promotion of emptiable latrine standards, their dissemination and adoption in Kampala to address the challenge of pits that cannot be emptied when full.

# Introduction

## 1.1 ASSIGNMENT BACKGROUND

**Kampala is experiencing rapid population and economic growth but provision of adequate sanitation has not been in tandem with these developments**

Sanitation issues are some of the most significant development challenges for Kampala City, Uganda. Like many other capital cities in developing countries, Kampala is experiencing rapid population and economic growth. However, provision of key services including adequate sanitation for the city population has not been in tandem with these developments.

Sustainable sanitation systems are available only to a very limited extent to the urban population. In Kampala, about 90% of the people rely on on-site sanitation solutions, which cannot be considered “improved” or “acceptable” in most cases. Only 34% of the urban population has access to improved sanitation (JMP, 2014).

The cross-cutting sanitation challenges identified include:

- » Too many households share one toilet, leading to unhygienic conditions;
- » Most pit-latrines are unlined, filled with solid wastes, and hard to access for emptying services;
- » Filled-up sanitation facilities that are either abandoned or directly emptied into the environment, posing health and environmental risks for the city and its people;
- » High population growth rates and increasing urbanisation add to the fact that especially in poor urban areas and informal settlements, access to sanitation is inadequate;
- » Collection, transportation as well as treatment of faecal sludge (FS) remain a great challenge in Kampala.

It is estimated that 900m<sup>3</sup> of FS is generated in Kampala every day, whereas only 390m<sup>3</sup> are collected<sup>1</sup>, representing a collection rate of 43% (KCCA/BMGF, 2014). There are several reasons for this, including the following:

- » The FS collection and transport (C&T) service providers currently operate in an environment that is informal and unregulated. This results in high price variations and unsatisfactory service delivery standards (response time, quality and completeness of service, appropriate discharging and treatment);
- » Around 80% of Kampala’s population relies on pit latrines, out of which 64% are not lined, making it hard for vacuum tankers to empty them. In many cases manual emptying is being practised, exposing workers and households to high health risks;
- » Access to the toilets for FS C&T vehicles is a challenge in unplanned and congested areas and often not possible;
- » Weak legal and institutional frameworks regarding FS management (FSM). This has led to unregulated and limited provision of FS C&T services to the different customer segments in the city;
- » Only one treatment plant in the city is designed for FSM, which reached capacity within the first month of operation.

FS is only one waste stream that requires management/oversight through public institutions. Alternative waste streams refer to solid

<sup>1</sup> - Cesspool trucks account for more than 99% of FS delivered to the treatment plant whereas the Gulpers only account for less than 1% of the total FS received (KCCA/BMGF,2014)

waste. The management of the latter similarly faced several challenges in the past, especially due to its informal and unregulated nature. However, Kampala Capital City Authority (KCCA), the governing body of Kampala City, managed to tackle a considerable number of those issues; KCCA successfully divided the city into municipal solid waste collection zones and contracted private companies for the management through an open bidding process.

KCCA recognizes the importance of water and sanitation to human health and well-being and their role as an engine for sustainable development for the population of Kampala. To ensure proper faecal sludge and waste management in Kampala, KCCA spearheads the coordination of sanitation planning and the harmonisation with urban development planning.

The Reform of the Urban Water and Sanitation Sector (RUWASS) Programme implemented by GIZ supports KCCA and other key stakeholders in improving the sanitation sector of Kampala. It has been supporting the Ugandan water and sanitation sector reforms for more than a decade to foster the sustainable access to water and sanitation in urban areas. Hence, GIZ has strong relationships with core institutions in the Ugandan water and sanitation sector, such as the Ministry of Water and Environment (MWE) and its Directorate of Water Development (DWD), the National Water and Sewerage Corporation (NWSC), and the KCCA. In the current programme phase (2014 – 2017) GIZ has a strong focus on supporting private sector engagement in the urban sanitation sector while at the same time strengthening the regulatory framework and governing institutions such as KCCA.

The interventions towards improved sanitation in Kampala also draw on the results of the Resource Recovery & Safe Reuse (RRR) Project Phase I funded by the Swiss Development Cooperation (SDC) between 2011 and 2014 that clearly state the feasibility of several RRR business model options recovering and reusing resources from different waste streams in Kampala, including FS. Currently, GIZ RUWASS is implementing the RRR Project Phase II under a co-funding agreement between the German Government (German Development Cooperation, GDC) and the Swiss Government (Swiss Development Cooperation, SDC). It will involve piloting of different sanitation interventions by KCCA over the period of May 2016 to May 2017 in five pre-selected parishes in Kampala.

**KCCA successfully divided the city into municipal solid waste collection zones and contracted private companies for the management through an open bidding process**

## 1.2 OBJECTIVES OF THE ASSIGNMENT

The specific objective of the assignment was to develop an Inventory of Faecal Sludge Emptiers and Resource Recovery and Reuse (RRR) Practitioners (both formal<sup>2</sup> and informal) in Kampala in order to establish an overview of the current private sector set-up.

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<sup>2</sup> - Formal in this context refers to service providers that have some basic level of organization such as having a certificate of incorporation, trading license, bank account etc. Informal refers to those operating without any of the above.

## 1.3 SCOPE OF THE ASSIGNMENT

The assignment was mainly limited to five divisions of Kampala city i.e. Nakawa, Rubaga, Makindye, Central and Kawempe. Although the private emptiers in Kampala also serve the surrounding areas of Wakiso and Mukono, these areas were not included since they are outside the KCCA mandate. However, some operators based in Nansana Town Council were captured since they mostly serve Kampala City.

## 1.4 STRUCTURE OF THE REPORT

The report consists of seven chapters as follows: Chapter 1 gives the background and scope of the assignment; Chapter 2 outlines the approach and methodology that was used in the assignment; Chapter 3 presents the findings from FS emptiers that use cesspool trucks; Chapter 4 highlights the findings from the Gulper emptiers; Chapter 5 summarises findings from the manual emptiers; Chapter 6 presents findings from RRR practitioners and Chapter 7 concludes the report. The report is supplemented by a list of appendices including a list of the different FS and RRR operators in Kampala and the data collection tool used.

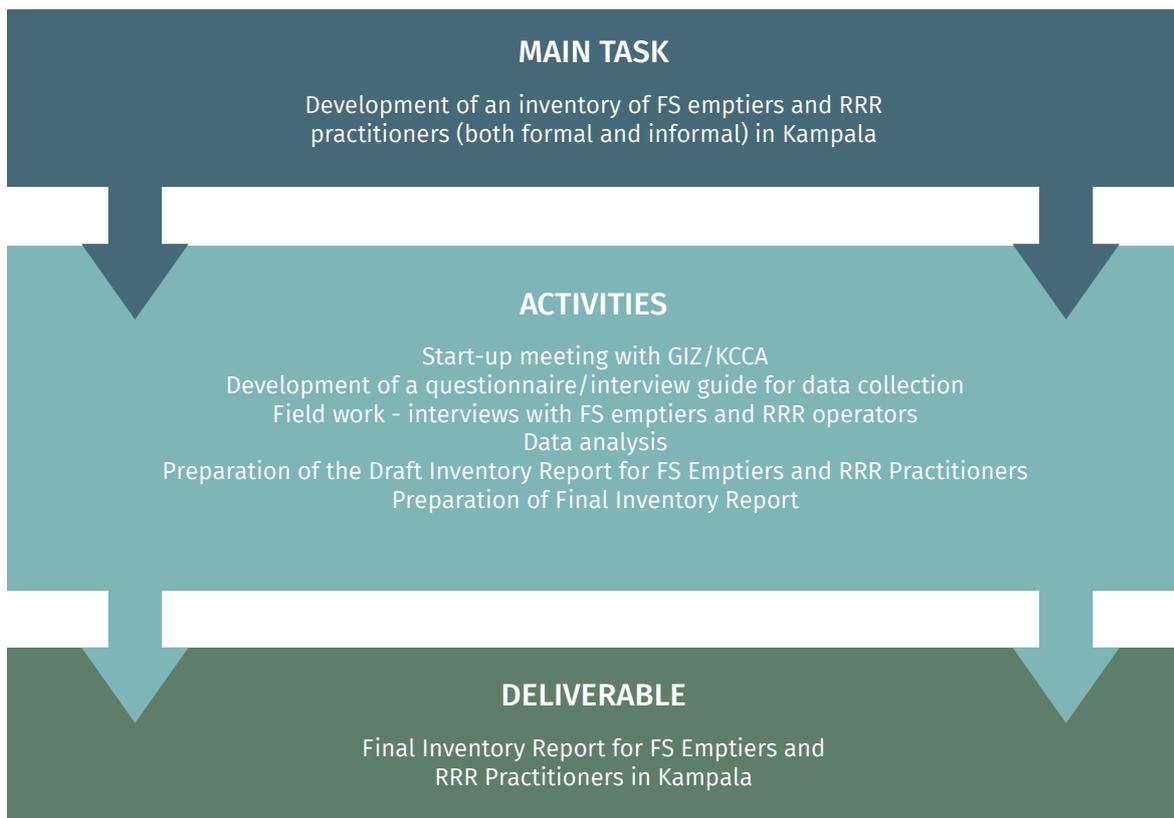
# Approach and Methodology

The background features a light green circular shape in the upper right and a darker green circular shape in the lower left, both overlapping a central light green area.

## 2.1 GENERAL APPROACH

The approach adopted for the assignment was of a consultative nature. Key stakeholders were consulted at each stage through scheduled meetings to secure their buy-in and ownership of the developed inventory. **FIGURE 2-1** summarises the main task, activities and output from the assignment.

**FIGURE 2-1 APPROACH USED FOR THE ASSIGNMENT**



## 2.2 METHODOLOGY

### 2.1.1 Start-up meetings

Start-up meetings were held with GIZ and KCCA in order to establish a common understanding of the assignment expectations and to clarify any concerns in the terms of reference and scope of work.

## 2.1.2 Development of data collection tools

An interview guide was developed to capture key questions that are relevant to establishing a comprehensive inventory of FS emptiers and RRR private sector in Kampala. The aspects captured include: organization/company information; human resources; operational information; material resources; marketing and customer satisfaction; perceptions and attitude; financial information and others. The Interview guide used is attached in **Appendix 6**.

## 2.1.3 Field work

Field work had two main aspects. These were i) identification of the different operators to interview and ii) conducting the interviews.

For the case of the cesspool operators, priority was given to operators who own trucks. In addition, companies/individuals that own more than a single truck were given preference to be interviewed. A total of seven cesspool entrepreneurs were identified and interviewed (**Appendix 1**). A full list of over 70 cesspool trucks with details of number plates, volume of tank, name and contact of registered owner was developed (**Appendix 5**).

The four most active Gulper operators in Kampala were identified and also interviewed (**Appendix 2**). Identification of the manual emptiers was based on the divisions of Kampala. A total of four manual operators were interviewed, one from each division except Central (**Appendix 3**). The RRR practitioners in FS are few and only two were identified and interviewed (**Appendix 4**).

The informal nature of the current operations in FSM made it quite difficult to trace and secure interviews with the owners of the cesspool trucks. Some of the truck owners do not want to be directly identified as being part of the FS business since they work elsewhere and have operators directly managing the trucks with agreed amounts of money to remit periodically. Manual emptiers were also difficult to get for the interviews. Their main fear was that of being arrested by the authorities since manual emptying is considered illegal. As such field work was a time consuming exercise and involved a lot of going back and forth to convince the respondents that the findings from the interviews were also for their benefit.

## 2.1.4 Data analysis and report writing

All the primary and secondary information collected was quantitatively and qualitatively analysed. The results of the analysis were used in developing the Inventory Report for Formal and Informal FS Emptiers and RRR Practitioners in Kampala.

The location of the different FS/RRR operators is shown in **FIGURE 2-2** overleaf.

FIGURE 2-2 LOCATION OF OFFICES/PARKING FOR THE FS EMPTIERS AND RRR OPERATORS INTERVIEWED



# Private Cesspool Truck Operators

The background is a solid light green color. It features several large, dark green, organic shapes that overlap and create a sense of depth and movement. These shapes are reminiscent of stylized leaves or abstract architectural forms, with smooth, rounded edges and some sharp points. The overall aesthetic is clean and modern.

### 3.1 INTRODUCTION

FS emptying services in Kampala are mostly provided by the private sector. The most visible service providers are the mechanical/cesspool truck emptiers. The cesspool truck operators are partially organized through their associations. Two parallel associations are currently in place i.e. Private Emptier's Association Uganda (PEAU) and Kampala Emptiers' Association (KEA). However, their operations are mostly informal and unregulated and they are not directly accountable to the authorities (National Environment Authority (NEMA), KCCA, and NWSC). The associations are meant to give the operators a better bargaining position when negotiating with the relevant authorities. In addition, the associations are supposed to have minimum code of conduct and operating standards to be observed by the members in executing their work. The associations are registered as companies limited by guarantee.

There are over 70 private cesspool trucks in operation in Kampala. Annex 5 shows the details of the cesspool trucks including the number plate, tank capacity, ownership and telephone contacts for owners. The private cesspool trucks mainly operate in Kampala but they also serve other areas. FIGURE 3-1 shows a cesspool truck on the streets of Kampala.

**FIGURE 3-1 CESSPOOL TRUCK  
IN KAMPALA**



### 3.2 ORGANIZATION/COMPANY SET-UP

Most of the cesspool operators work informally without a certificate of incorporation, trading license, NEMA license or a formal office. Most of the operators are based at the two NWSC sewage treatment plants at Lubigi and Bugolobi.

Out of the seven companies/entrepreneurs interviewed, only two had a certificate of incorporation. Only one company (W Mulindwa & E

Nakanwagi General Agencies LTD) has a NEMA license for transportation of FS and a formal office based in Rubaga. The entrepreneurs interviewed have been in operation for a period ranging from 1 – 10 years. Most of the owners who are also operators joined the business much earlier as drivers and later got their own trucks.

### 3.3 HUMAN RESOURCES

Three categories of setups were found to be operational in Kampala: i) A company with several trucks where operators and casual workers are hired and paid on a per job basis; ii) The truck owner is also the operator; iii) Truck owner<sup>1</sup> hands over truck to operator and only expects a fixed amount of money on a weekly/monthly basis. The number of trucks and staff per interviewed cesspool entrepreneur/company is shown in **TABLE 3-1**.

**TABLE 3-1 TRUCKS AND NUMBER OF STAFF PER ENTREPRENEUR**

Company/Entrepreneur Name	Number of Trucks	Number of staff
John XXXXXX*	2	8
Ssalongo XXXXXX	1	2
XXXXXX John Bosco	2	4
XXXXXX Yossam	1	1
XXXXXX Sanitation Ltd	2	3
Charles XXXXXX	1	1
W XXXXXX & E XXXXXX General Agencies Ltd	2	6

\* For privacy reasons names and telephone numbers have been removed from this report

### 3.4 OPERATIONAL INFORMATION

#### 3.4.1 Services provided

Pit emptying is the main business carried out by the cesspool entrepreneurs interviewed. However, two of the entrepreneurs (Cleanland Sanitation and Ssalongo Serunkuma) are also engaged in other activities such as construction and maintenance/refurbishment of buildings which account for less than 20% of their revenue.

#### 3.4.2 Management

All the cesspool operators predominately work in Kampala including the surrounding areas of Wakiso, Mukono and Entebbe. To request for the operators' services, customers use the following avenues: i) Phone calls requesting for service, the telephone numbers are usually displayed on the trucks; ii) Customers come to the parking yards at the two treatment plants; iii) Through referrals and commission agents.

1 - The truck owners in this category were difficult to secure for the interviews. They work somewhere else and don't want to be associated/identify with the emptying business. They only deal with their operators

The daily business hours of operations for the operators are from 6 a.m. – 7 p.m. The limitation in the operating hours is due to the fact that the NWSC treatment plants open at 8 a.m. and close by 6 p.m. This implies that FS trips emptied after 6 p.m are kept in the truck and are delivered to the treatment plant the following day. All the operators indicated that their services are being fully utilized by the public at the moment as they engaged most of the time.

## 3.5 MATERIAL RESOURCES

### 3.5.1 Basic equipment

The basic equipment used by the cesspool operators in Kampala includes the cesspool truck(s), spades, shovels and hoes. The tools are mostly used for removal of solid waste from pit latrines before emptying can be carried out. The trucks and sizes owned by the entrepreneurs interviewed are shown in Table 3-2.

**TABLE 3-2 TRUCK NUMBER AND SIZES OWNED BY DIFFERENT ENTREPRENEURS**

Company/Entrepreneur Name	Number of Trucks
John XXXXXX	2 Trucks @ 10m <sup>3</sup>
Ssalongo XXXXXX	1 Truck @ 3.6m <sup>3</sup>
XXXXXX John Bosco	2 Trucks @ 8m <sup>3</sup>
XXXXXX Yossam	1 Truck @ 4m <sup>3</sup>
XXXXXX Sanitation Ltd	2 Trucks @ 7m <sup>3</sup> & 4m <sup>3</sup>
Charles XXXXXX	1 Truck @ 4m <sup>3</sup>
W XXXXXX & E XXXXXX General Agencies Ltd	2 Trucks @ 10m <sup>3</sup>

All the cesspool trucks are bought second hand and imported from Japan. The cesspool entrepreneurs indicated that they buy the trucks from the bonds in Kampala. Spares are purchased from the local garages.

The main weaknesses with the cesspool equipment are as follows:

- » High maintenance costs since the trucks are bought second hand and spares are expensive;
- » Limitations experienced especially in emptying latrines that have solid wastes;
- » The trucks are big and cannot empty latrines in difficult to access areas with poor road infrastructure;
- » High costs of operation/ transport to far distances.

### 3.5.2 Personal protective equipment (PPE)

The PPE used by the cesspool operators includes gumboots, overalls, masks and gloves. All (100%) of the entrepreneurs were aware of the importance of using PPE in executing the work and indicated that they own PPE. However, they have no direct mechanism of ensuring that the workers actually put on the PPE while in the field. The main challenge mentioned with the PPE is the frequent wear and tear and the need for regular replacement.

## 3.6 MARKETING AND CUSTOMER SATISFACTION

Households constitute the highest proportion of the cesspool operators' customers (70% to 90%). On average, the highest numbers of customers served by the entrepreneurs are low income earners (62%) followed by middle income earners and institutions/businesses as shown in **FIGURE 3-2**.

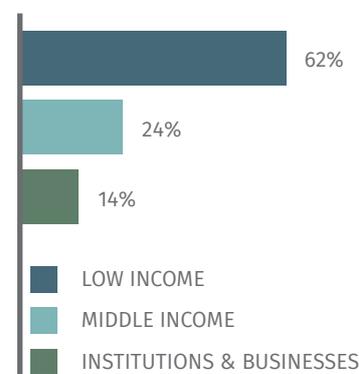
On average, each cesspool truck empties about two trips of FS on a daily basis. The number of trips and customers served tends to increase during the rainy season and goes down in the dry season. This is mainly attributed to the filling up of sanitation facilities by storm water/run-off.

The main challenges faced by the cesspool business entrepreneurs include:

- » Increment of dumping fees charged by NWSC;
- » High Competition from heavily subsidized partners who charge below the market rates for emptying;
- » High fuel costs;
- » Low willingness to pay for the emptying services at the current charges;
- » Low demand especially in the dry season;
- » Slum areas are not well planned and difficult to serve;
- » Poor equipment leading to regular/high maintenance costs;
- » High capital costs for acquiring new trucks;
- » Lack of a fund that can be accessed by entrepreneurs to expand their businesses.

Marketing of the services is minimal. The entrepreneurs indicated that they mostly market through referrals and having their telephone numbers displayed on the trucks.

**FIGURE 3-2 TYPE OF CUSTOMERS SERVED BY THE DIFFERENT CESSPOOL ENTREPRENEURS**



## 3.7 PERCEPTIONS AND ATTITUDE

All the entrepreneurs indicated that they like the job they are doing. The reason for this is that they are able to make a living of the business since it is profitable.

When tasked to explain the aspects of the business they do not like, the following were the main concerns:

- » Dishonest customers who do not want to pay after the service has been delivered;
- » Despising of the operators by the community;
- » Despising of the operators by customers;
- » Misuse of toilets by turning them into rubbish bins.

## 3.8 FINANCIAL INFORMATION

**TABLE 3-3 CURRENT MARKET PRICE ESTIMATES FOR EMPTYING SERVICES**

The emptying charges vary depending on the truck size, location and status of the sanitation facility among other factors as shown in **TABLE 3-3**.

Truck Size (m <sup>3</sup> )	Charge per trip (UGX)	NWSC disposal charge per trip (UGX)
< 2.5	70,000	10,000
3 - 4	100,000	14,000
8	150,000	20,000
10	190,000	20,000

The receipting system of the operators was not shared during the interviews and as such it was not possible to confirm whether they actually issue receipts. However, all the operators indicated that their employees are paid per job executed as opposed to fixed monthly payments. The money paid per trip/job to the operator and the helper ranges between UGX 5,000 to UGX 35,000 depending on the complexity of the work. This translates to an average of UGX 10,000 per m<sup>3</sup> for an average truck size with a 4m<sup>3</sup> tanker.

The informal entrepreneurs also indicated that they use their personal bank accounts to handle the money for the business. The formal ones use the business bank accounts.

The indicative capital costs of the second hand cesspool trucks are shown in **TABLE 3-4**.

**TABLE 3-4 COST ESTIMATES  
OF SECOND HAND CESSPOOL  
TRUCKS IN KAMPALA**

Truck Size (m <sup>3</sup> )	Capital Cost (UGX)
3.6	40,000,000
4	55,000,000 - 80,000,000
8	85,000,000
10	80,000,000 - 150,000,000

A set of PPE is estimated at UGX 80,000. Each truck requires about three sets of PPE one for the operator, another for the helper and the third as standby. The average lifetime of a second hand cesspool truck is about 10 years.

## 3.9 OTHER ASPECTS

### 3.9.1 Sources of financing

The entrepreneurs indicated that most of the equipment was financed from personal savings, pooling of resources by businesses partners and in some cases loans. Access to bank financing is however a challenge due to the informal nature of operations of most of the businesses. Some cesspool entrepreneurs have used loans to purchase trucks as shown in Appendix 5 where some 2 trucks are registered in the names of Stanbic Bank and East African Development Bank.

### 3.9.2 Disposal of FS

All the entrepreneurs reported that disposal of FS is carried out at the two NWSC treatment plants at Lubigi and Bugolobi. They indicated that illicit disposal of FS by the cesspool trucks in Kampala is not possible due to the vigilance of the communities and KCCA.

### 3.9.3 Aspects for government support

The following are the aspects where cesspool operators recommended enhanced government/KCCA support:

- » Provide guidelines/standards for toilets to households/institutions. The preference are lined facilities which are emptiable;
- » There is need for investment in more decentralized FS dumping/treatment facilities to reduce on FS transportation costs;
- » Promotion of proper hygiene in the communities is required;
- » Clamp down illegal dumping of FS by some industrialists;
- » Change the operational time of FS disposal facilities to 24 hours per day;
- » Secure more parking spaces for the cesspool trucks;
- » Ease accessibility for emptying trucks in informal and densely populated areas;
- » There is need to reduce taxes on new cesspool trucks to encourage business growth;
- » There is need to reduce dumping fees to make the cost more affordable to customers.

# Gulper Operators

## 4.1 INTRODUCTION

The “Sludge Gulper” was unveiled in Kampala by Captiva Africa Ltd/Water for People (WFP) in the early months of 2013. The Gulper is a sludge emptying device tailored for use in areas not accessible by tankers. It is a simple direct lift pump that operates in a similar way to a borehole pump. It is designed to empty the upper layer of the pit. The standard Gulper in current use as shown in **FIGURE 4-1** is able to reach 1m-1.5m into the pit. The standard Gulper can be locally assembled in Kampala.

The following are critical for Gulper business entrepreneurs: ownership/hire of a truck, Gulper, 30-litre buckets, 150/200-litre drums/barrels, personal protective equipment, and hire of operators.

**FIGURE 4-1 EMPTYING USING THE GULPER**



## 4.2 ORGANIZATION/COMPANY SET-UP

Ten (10) Gulper operators exist in Kampala. However, only four of them own tricycles for transportation of sludge to treatment plant. Three out of the four Gulper entrepreneurs interviewed have companies with a certificate of incorporation. All the companies had neither a trading license nor a NEMA license for transporting FS. The three gulper entrepreneurs with certificates of incorporation but lack trading licenses can be classified as semi-formal. The one without a certificate of incorporation and trading license is classified as informal.

**TABLE 4-1 LOCATION OF GULPER ENTREPRENEURS**

The entrepreneurs are strategically located in different areas of the city as shown in **TABLE 4-1** below and **FIGURE 2-2**.

Company/Entrepreneur Name	Place of Operation
Door Utility Services Ltd	Bwaise - Kawempe
Forever Sanitation Ltd	Kasubi - Kawaala
Isaac XXXXXX (Informal)	Kawempe - Mbogo
Newwayo Enterprises Ltd	Nansana

The Gulper entrepreneurs have been in operation since 2013 when the Gulper was first introduced in Kampala.

## 4.3 HUMAN RESOURCES

A summary of the number of staff per Gulper entrepreneur is shown in **TABLE 4-2**.

## 4.4 OPERATIONAL INFORMATION

### 4.4.1 Services provided

The services provided by the entrepreneurs include: i) Pit emptying; ii) Hiring of pick-up trucks to fellow operators; iii) Construction; iv) Latrine maintenance and fumigation. However, most (>80%) of the revenue is generated from pit emptying.

### 4.4.2 Management

All the operators indicated that they work anywhere in Kampala where they are called upon. Forever Sanitation Ltd. mostly works in the parishes of Bwaise, Mbogo, Kansanga, Gabba and Mpererwe. To request for the Gulper services, customers mostly use phone calls and referrals. The daily business hours of operations for the Gulper operators are from 6 a.m. – 7 p.m. This implies that beyond the plant operating hours, the operators keep the sludge in the containers overnight and dispose it the following day.

## 4.5 MATERIAL RESOURCES

### 4.5.1 Basic Equipment

The basic equipment used by the Gulper operators in Kampala includes the Gulper, pick-up truck/tricycle and barrels. The equipment owned by the different entrepreneurs interviewed is shown in **TABLE 4-3**.

The equipment used by the Gulper entrepreneurs is purchased from different sources as shown in **TABLE 4-4**.

The main strength of the Gulper technology is the ability to empty toilets in informal settlements which are inaccessible by trucks.

The main weaknesses with the Gulper equipment are as follows:

- » The technology is too manual;
- » Limited depth of sludge extraction up to 1.5 meters;
- » Barrels usually breakdown because of the acidic nature of sludge;
- » Health risks to the operators especially in cases where PPE are not used.

**TABLE 4-2 STAFF PER GULPER ENTREPRENEUR**

Company/ Entrepreneur Name	Number of Staff
Door Utility Services Ltd	3
Forever Sanitation Ltd	5
Isaac Turinawe (Informal)	2
Newwayo Enterprises Ltd	3

**TABLE 4-3 EQUIPMENT OWNED BY THE GULPER ENTREPRENEURS**

Company/ Entrepreneur Name	Equipment
Door Utility Services Ltd	1 Pick-up 1 Gulper 8 Barrels
Forever Sanitation Ltd	1 Pick-up 1 Gulper 8 Barrels
Isaac Turinawe (Informal)	1 Tricycle 1 Gulper 8 Barrels
Newwayo Enterprises Ltd	1 Pick-up 1 Gulper 8 Barrels

**TABLE 4-4 SOURCES OF EQUIPMENT FOR THE GULPER ENTREPRENEURS**

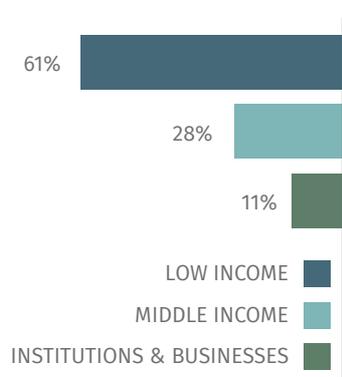
Equipment	Supplier
Gulper	Watcom Engineering Ltd - Katwe
Barrels	Hardware store - Namanve
Pick-up	Car bonds - Kampala
Tricycle	Kishen Enterprises Ltd - Ndeeba

## 4.5.2 Personal Protective Equipment (PPE)

The PPE used by the Gulper operators includes gumboots, masks, overalls, helmets, torches, disinfectants and gloves. The entrepreneurs were aware of the importance of using PPE while emptying. However, some indicated that when the weather is too hot, operators sometimes do not use the PPE due to the discomfort of the heat. This exposes the operators to health risks.

## 4.6 MARKETING AND CUSTOMER SATISFACTION

**FIGURE 4-2 TYPE OF CUSTOMERS SERVED BY THE DIFFERENT GULPER ENTREPRENEURS**



Households constitute about 89% of the Gulper entrepreneurs' customers. About 61% of the customers are classified as low income earners as shown in **FIGURE 4-2**.

On average, each Gulper entrepreneur serves about ten customers per month. The main challenges faced by the Gulper business entrepreneurs include:

- » Dishonest workers/operators;
- » Lack of sufficient demand for the services especially in the dry season;
- » Limited operating hours of NWSC dumping facilities;
- » Too much time is spent emptying (5 hrs on average per pit);
- » High transport/truck hiring costs pose the biggest challenge for the entrepreneurs. Without ownership of a pick-up or tricycle, the Gulper business model doesn't work effectively due to the high hiring costs. In addition an operator needs a minimum of 6 barrels per job to be able to defray the transportation costs.

Marketing of Gulper services is done through community radios, distribution of fliers in the communities, door to door marketing, utilisation of Village Health Teams (VHTs), agents and referrals. The KCCA-VHTs also identify full pits in the course of their work and link the Gulper entrepreneurs with the prospective customers. The start-up marketing activities for the Gulper businesses were mainly sponsored by the NGO WFP.

## 4.7 PERCEPTIONS AND ATTITUDE

All the Gulper entrepreneurs indicated that they like the job they are doing. The main motivation is that they are able to earn a living from the business. The aspects that they do not like about the business include:

- » Being despised by the communities since the job is considered dirty;
- » The fact that sometimes it takes up to two weeks without a job.

## 4.8 FINANCIAL INFORMATION

The emptying charges by the Gulper operators vary between UGX 25,000 – UGX 40,000 per barrel<sup>1</sup>. The charge is higher when the toilet has a lot of solid waste mixed with the FS and has to first be removed by the operator.

The customers pay for the service after the job is done. Some entrepreneurs indicated that they pay their workers per job executed. An average of UGX 5,000 per barrel emptied or UGX 30,000 per job (about 6 barrels) is paid out.

The semi-formal Gulper operators (with companies) indicated that they have bank accounts for their businesses while the informal operator did not have any bank account.

The capital cost breakdown for the Gulper business is as shown in **TABLE 4-5** below.

**TABLE 4-5 COST ESTIMATES OF EQUIPMENT FOR THE GULPER BUSINESS**

Equipment	Estimated Cost (UGX)	Remarks
Pick-up truck	8,000,000 - 28,000,000	Cost depends on make and age of the truck
Gulper	450,000	Locally available
Barrels (x8)	480,000	A minimum of 8 barrels is required
Tricycle (Three wheeled motorcycle)	5,400,000	Locally fabricated. Used as an alternative to a pick-up truck

## 4.9 OTHER ASPECTS

### 4.9.1 Sources of financing

The sources of financing for the Gulper entrepreneurs were mostly from personal savings and loans.

### 4.9.2 Disposal of FS

All the entrepreneurs reported that disposal of FS is carried out at the two NWSC treatment plants at Lubigi and Bugolobi. Disposal at the decentralized waste water treatment plant at Nyanama is minimal due to the limited plant capacity.

### 4.9.3 Aspects for government support

- » Simplify the process of getting permits from NEMA and KCCA. The current process is too long and the requirements<sup>2</sup> are very stringent for most of the FS private players to meet;
- » Create decentralized FS dumping facilities that are suitable for disposal of sludge that is manually emptied.

<sup>1</sup> - 1 Barrel is about 200 Litres

<sup>2</sup> - The requirements include: Company certificate of registration; Articles of association; VAT registration certificate; Trading license; Company profile; Number of staff; Type of equipment owned; PPE; Specific training in waste management; OHS (training is provided by the department of OHS in the Ministry of Gender); Evidence of Vehicle ownership (or an agreement with the vehicle owner); Recommendation letter from KCCA and NWSC.

# Manual Emptiers

The background is a solid light green color. It features several large, dark green, organic shapes that overlap and create a layered effect. One shape is a large, rounded rectangle in the upper right. Another is a large, rounded shape in the lower left. A third is a large, rounded shape in the center, overlapping the others. The overall composition is abstract and modern.

## 5.1 INTRODUCTION

The service providers involved in manual emptying operate informally. This is due to fact that the health risks associated with manual emptying make it unacceptable to the local authorities and society. Due to the low social status associated with the manual pit emptying work, operators usually do this work on a part-time basis. Additionally, manual emptying operators have no interaction with KCCA and other relevant authorities. Manual operators rarely have physical points of contact but are mostly contacted through word of mouth.

Charges for manual pit emptying services are not standard but vary depending on the size of pit to be emptied and method of disposal among other factors.

## 5.2 ORGANIZATION/COMPANY SET-UP

The manual emptiers largely operate as private unregistered and informal entities. They operate in different parts of the city mostly in the informal settlements. The four manual emptiers that were interviewed were based in the following areas: Nkere Zone – Makindye; Lungujja – Rubaga; Kiwatule Zone Balintuma – Nakawa; and Kalerwe-kimombasa Zone – Kawempe as mapped out in Figure 2-2. They indicated that they have been in operation for 7 – 10 years which shows that there is demand for their services.

## 5.3 HUMAN RESOURCES

The number of people working in each group was between two and four. Each group has a leader who organizes the emptying jobs and required tools. The rest are labourers who performed tasks required to complete the job.

## 5.4 OPERATIONAL INFORMATION

### 5.4.1 Services provided

All the manual emptiers had some other activities that they are engaged in such as fumigation, solid waste collection etc. However, emptying of pit latrines was their primary source of income.

### 5.4.2 Management

The manual operators do not limit the provision of their emptying service to a restricted geographic location but rather meet demand wherever they are called upon. For example one group in Makindye indicated that their services have been offered in Kampala and the neighbouring towns of Bombo and Mukono.

Households requiring the services of the manual operators either inform one of the members of the group in person or through a third-party/referral who knows them. Some of the groups reported having a contact phone number. Many of the group members do not have phone contacts.

The manual operators indicated that they offer services any time and day of the week as requested by the customers. However, they seemed to prefer operating in the night hours. This is to enable them keep away from being caught by the authorities and also to mitigate the nuisance to neighbours created by the foul smell of FS.

## 5.5 MATERIAL RESOURCES

### 5.5.1 Basic Equipment

All materials and equipment used by the manual operators can be found at most local hardware shops in Kampala. The basic equipment includes: Gumboots, ropes, jerry-can/buckets, pick axes, shovel, hoes and spades. One of the challenges is the frequent wear and tear and need for regular replacement of the equipment.

### 5.5.2 Personal Protective Equipment (PPE)

Three groups indicated that they do not use any form of PPE in the execution of the emptying work due to limited finances. The fourth group reportedly uses PPE in form of gumboots and overalls. However, this could not be independently confirmed.

## 5.6 MARKETING AND CUSTOMER SATISFACTION

The services of manual operators are predominantly in the low income communities. The customers served by each operator per month varied between seven and twenty.

Marketing of manual operator services is not carried out. The operators get their business through referrals/word of mouth and sometimes through phone calls.

Some of the challenges faced by the manual emptiers include:

- » Some dishonest customers do not pay after the service has been delivered;
- » Lack of proper equipment for the emptying job;
- » Exposure of workers to health risks because of direct contact with FS.

## 5.7 PERCEPTIONS AND ATTITUDE

All the manual operators indicated that they like the job they are doing. The main motivation is that they earn some income from the job. The aspects that they do not like about the job include:

- » The constant contact with FS which affects their health;
- » The fact that sometimes customers cheat them on payments and have nowhere to go for redress since the business is considered illegal.

## 5.8 FINANCIAL INFORMATION

The manual operators interviewed reported not having any financial records of their FS emptying activities. The cost of emptying a toilet facility ranges between UGX 200,000 – UGX 500,000 for institutions. Households pay between UGX 20,000 – UGX 50,000. The pricing depends on a number of factors such as: volume of sludge to be emptied or size of the containment facility; presence of solid waste inside the pit and perceived customer income and/or relationship to the operators.

The customers make payments usually after the service has been delivered. The money is shared by the operator group immediately after the customer has paid.

The capital cost breakdown for the manual emptying business is as shown in **TABLE 5-1**.

**TABLE 5-1 COST ESTIMATES FOR EQUIPMENT FOR THE MANUAL EMPTYING BUSINESS**

Equipment	Estimated Cost (UGX)
Hoes & handles (x2)	22,000
Spades (x2)	16,000
Pick Axe (x2)	30,000
Jerrycans/ Buckets (x2)	10,000
Gumboots (x2)	30,000
Overalls (x2)	30,000
<b>Total</b>	<b>138,000</b>

## 5.9 OTHER ASPECTS

### 5.9.1 Sources of financing

The sources of financing for the manual operators were mostly from personal savings. None of the group members had ever applied for a loan.

### 5.9.2 Disposal of FS

All the manual operators indicated that the FS emptied is usually discharged into a dug pit at the customer's premises and safely/unsafely buried onsite. In practice, some of the manually emptied FS is actually discharged in open drains, streams, disposed on the surface etc.

### 5.9.3 Aspects for government support

The operators indicated a need for the government to provide some funds that could be accessed to help them grow their businesses.

# Resource Recovery and Reuse Private Sector

The background features a dark green color with several overlapping, semi-transparent shapes in a lighter shade of green. These shapes include a large circle on the right side, a smaller circle on the left, and various curved, organic forms that create a layered, abstract composition.

## 6.1 INTRODUCTION

Treated sludge from the NWSC treatment plants at Lubigi and Bugolobi is used as a soil conditioner and organic fertilizer and also as a fill material. On average, the sludge from the drying beds costs about USD10/tonne. Small scale florists, foresters, gardeners, briquette manufacturers and livestock farmers are some of the major users of wastewater sludge in Kampala (NETWAS, 2011).

The private sector involved in this sector is mainly the truck owners who get the orders for dried sludge from the customers, buy the product from NWSC and sell to the farmers/end-users at a profit. In addition, briquettes and compost are also being processed from FS by a few private sector players.

## 6.2 ORGANIZATION/ COMPANY SET-UP

Two main categories of the RRR entrepreneurs were identified and interviewed. These included: One compost entrepreneur and a briquette manufacturer. The operations of the composter are informal. The composter is based in Nkere Zone - Makindye Division and has been in operation since 2008. The raw material for the compost is dried faecal matter from ecosan (UDDT) toilets in Kampala.

The briquette manufacturer (Strong Youth Development Group) has a certificate of incorporation, is based in Nansana town and has been in operation since 2012. The briquette manufacturer mainly uses solid waste as raw material and complements it with FS. The reuse of FS as raw material for briquettes is still at a pilot stage and is supported by WFP.

## 6.3 HUMAN RESOURCES

The number of staff working with the composter is three. The briquette manufacturer has seven employees. The staff is employed as casual workers.

## 6.4 OPERATIONAL INFORMATION

### 6.4.1 Services provided and management

Most of the RRR private sector actors combine a number of jobs to be able to break-even. For example the composter indicated that they also carry out construction and FS emptying (from ecosan toilets in Kampala) in addition to the composting. The breakdown of revenue streams contribution is estimated as follows: Building - 20%; Emptying - 30% and Composting - 50%.

The services of the composter are mainly in Makindye Division (Kibuye) and Rubaga Division (Lungujja, Makerere-Kivulu). Households requiring the service of the RRR entrepreneur contact him through telephone calls, referrals and word of mouth.

On the other hand, Strong Youth Development Group supplies briquettes to all areas in Kampala. 80% of the briquettes are made out of organic solid waste while the remaining 20% is from FS. However, the demand for briquettes is still low and the products are not fully utilized by the public.

## 6.5 MATERIAL RESOURCES

### 6.5.1 Basic Equipment

The basic equipment used by the composter includes: Spades, trowel, saw blade, hammer, sacks and a vehicle (hired). All material and equipment used by the operators can be found at most local hardware shops in Kampala. One of the challenges with the equipment is the frequent breakdown due to their poor quality.

The main equipment used by the briquette entrepreneur is the briquette machine which is locally fabricated in Katwe-Kampala.

### 6.5.2 Personal Protective Equipment (PPE)

The compost operator does not use PPE. They indicated that the soap and disinfectants are used to protect the workers. However, the briquette entrepreneur indicated the use of gloves, gumboots and overalls as PPE.

## 6.6 MARKETING AND CUSTOMER SATISFACTION

**TABLE 6-1 CUSTOMERS SERVED BY COMPOSTER PER MONTH**

Customer Category	Number Served
Low income	5
Middle income	3
Businesses and Institutions	7

On average, the composter serves about 15 customers per month. The classification of customers served by the composter is as shown in Table 6-1.

Some of the challenges experienced by the composting entrepreneur include:

- » Low demand for compost products;
- » Poor maintenance of latrines which make emptying and composting difficult.
- » Marketing of services is mainly through word of mouth and referrals.

The briquette entrepreneur serves about 10 customers per month but indicated that there is potential for business growth. Over 80% of the briquette customers are low income earners. Some of the challenges experienced by the briquette entrepreneur include:

- » Drying of FS is difficult;
- » Carbonisation is still at a minimal rate;
- » Accessing transport for dried FS is difficult and costly.

## 6.7 PERCEPTIONS AND ATTITUDE

The entrepreneurs indicated that they like the job they are doing. The main motivation is that they are able to earn some income from the business despite the challenges. The aspect that they do not like about the business is the poor maintenance of latrines by households which makes composting of the FS difficult. The machine for briquette making is largely manually operated and this limits on the quantity of briquettes produced per day.

## 6.8 FINANCIAL INFORMATION

The composter interviewed reported not having any financial records for the business. However, the unit costs of the services/products provided are as shown in **TABLE 6-2**.

The customers make payments usually after the service/product has been delivered. The compost operator has a personal bank account. Payments to workers are effected on a per job basis and the amount varies from job to job. The capital cost requirements for setting up the compost business is estimated at UGX 70,000.

The selling price of the briquettes is UGX 70,000 per 50 Kg bag. The capital cost estimate for the briquette machine and equipment (simple poly-tunnel, drum burner etc.) is UGX 1,500,000.

**TABLE 6-2 UNIT COST OF COMPOST PRODUCTS/SERVICES**

Product/Service	Estimated Cost (UGX)
FS emptying (per ecosan toilet)	40,000
Compost (per 50 Kgs)	5,000
Ash (per 50 Kgs)	10,000

## 6.9 OTHER ASPECTS

### 6.9.1 Sources of financing

The sources of financing for the RRR operator were mostly from personal savings. None of the operators had ever applied for a loan.

### 6.9.2 Disposal of FS

All the FS emptied is disposed as a raw material at the composting site.

### 6.9.3 Safety precautions with compost product

The measures put in place to ensure that the compost is safe for reuse include:

- » The compost is only sold when it is at least 6 months<sup>1</sup> old to allow to die off of any harmful bacteria;
- » Use of disinfectants after handling compost;
- » Customer sensitisation on how to handle the compost.

<sup>1</sup> - This is according to NWSC

The safety measures taken by the briquette manufacturer include:

- » The dry sludge obtained from Lubigi treatment plant is burned with limited oxygen supply for 16hrs and all the pathogens are destroyed. The sludge drying time at the NWSC plant is about 6 months according to NWSC.
- » The final products (briquettes) are packed in bags

#### 6.9.4 Aspects for government support

The government should encourage reuse of sludge to reduce on the high rate of fill-up of latrines and hence create a market for RRR private sector. This should be complemented with stronger enforcement to ensure that filled pits are emptied and FS safely taken to the treatment plants.

# Conclusions and Recommendations



## 7.1 CONCLUSIONS

### FS emptying and RRR businesses setup overview

Four main categories of FS C&T and RRR private sector practitioners are operational in Kampala's sanitation sector. These include: i) Cesspool truck operators; ii) Gulper operators; iii) Manual emptier; iv) Re-users of FS. Most of the cesspool operators work informally without a certificate of incorporation, trading license, NEMA license or a formal office. Only one company (W Mulindwa & E Nakanwagi General Agencies LTD) has a NEMA license for transportation of FS and a formal office based in Rubaga. Two of the cesspool companies had certificates of incorporation.

A comprehensive list of the over 70 cesspool trucks, their owners and contacts is provided in Annex 5 to facilitate further selection and formal engagement of the operators in the FSM. Ten Gulper operators exist and operate in Kampala. However, only four of them own tricycles for FS transportation. Three of the four gulper operators interviewed have certificates of incorporation. The manual emptiers are largely informal in their operations while the RRR businesses have both formal and informal operations.

### Management and operational arrangements

The businesses employ between 2- 8 people mostly on casual terms. All entrepreneurs pay their staff on a per job basis as opposed to fixed monthly payments. Pit emptying is the main activity carried out. However, some operators also carry out other tasks to supplement their income e.g. construction, maintenance, fumigation etc. The entrepreneurs get their business mostly through referrals/word of mouth, phone calls and commission agents. The business hours for the cesspool trucks and Gulpers are between 6 a.m. – 7 p.m. whereas the manual emptiers work mostly at the time convenient for the customer especially in the night to avoid being caught by the authorities and to minimize foul smell of FS to neighbors.

Households form the highest number of customers for the FS emptying business. On average, each cesspool truck collects two trips of FS per day; charges per trip vary from UGX 70,000 – UGX 190,000. Gulper charges range between UGX 25,000 – UGX 40,000 per barrel (200L). Manual emptying costs vary between UGX 20,000 – UGX 500,000 depending on the nature of the facility. Compost costs about UGX 5,000 per 50 Kgs. Ash costs UGX 10,000 per 50Kgs while briquettes cost UGX 70,000 per 50 Kg bag.

### Equipment and financial information

The cesspool trucks are bought second hand from the car bonds in Kampala. The price of the trucks ranges between UGX 60 – 120 million depending on the truck size. Gulpers are locally fabricated by Watcom Engineering LTD in Katwe. Tricycles are also locally assembled. The initial capital cost for the gulper business varies depending on the mode of FS transportation to use (about UGX 1.3 Million without transportation equipment cost). The rest of the required tools and PPE are locally available in the hardware stores.

The capital cost estimate for the briquette machine and equipment (simple poly-tunnel, drum burner etc.) is UGX 1,500,000.

Most of the entrepreneurs used personal savings and loans to start-up their businesses. Access to bank loans is still a challenge in the sector due to the informal nature of the business operations. Some cesspool entrepreneurs have used loans to purchase trucks as shown in Appendix 5 where some two trucks are registered in the names of Stanbic Bank and East African Development Bank.

### Business challenges

Some of the cross-cutting challenges facing the FS/RRR businesses include:

- » Increment of dumping fees charged by NWSC (from UGX 7,000 to UGX 14,000 per trip of 4m<sup>3</sup>)
- » High Competition from heavily subsidized partners like CIDI who charge below the market rates for emptying using cesspool trucks.
- » High fuel costs
- » Low demand especially in the dry season

- » Slum areas are not well planned and difficult to serve
- » Poor quality second hand equipment with high maintenance costs
- » High capital costs for acquiring new trucks
- » Lack of a fund that can be accessed by entrepreneurs to expand their businesses
- » Limited operating hours of NWSC dumping facilities (8 a.m. – 6 p.m.)
- » High transport costs pose the biggest challenge for the Gulper entrepreneurs. Without ownership of a pick-up or tricycle, the Gulper business model does not work effectively.
- » The constant direct contact with FS affects the health of the operators
- » Unreasonable customers who refuse to effect payment after service delivery leaves the manual operators in a dilemma with nowhere to go for redress since the business is considered illegal
- » Low demand for compost products
- » Poor maintenance of latrines which make emptying and composting difficult.
- » High capital cost for briquette making machines

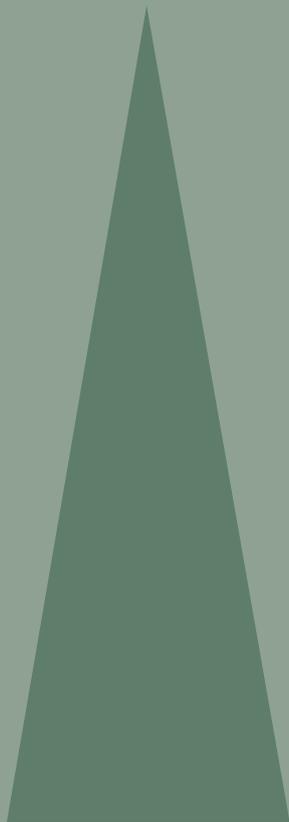
## 7.2 RECOMMENDATIONS FOR CONSIDERATION IN THE RRR PILOT PROJECT PHASE II

1. Initiate engagement/discussions with the FS private sector players (especially the cesspool entrepreneurs) on the planned restructuring of the FSM operational framework where the city is to be zoned in a bid to secure their buy-in and participation. The information provided in the Inventory Report should be used as a starting point for contacting the different private players.
2. Develop and implement a capacity enhancement/training programme for the operators specifically targeting the following aspects: formalisation of their businesses; acquisition of trading licenses; acquisition of environmental licenses; occupational health and safety requirements; training on keeping operational and financial records of their activities; access to financing opportunities, etc.
3. Pre-selection of private player partners to work within the FS/RRR pilot phase should be based on the following aspects:
  - » Status of formalisation of their business operations e.g. certificate of registration, trading license, business bank account ownership, staff levels etc.
  - » Capacity in terms of equipment sizes and numbers to suit/match the emptying needs in the selected pilot areas.
  - » Work experience in terms of years of operating the FS/RRR business.
  - » Willingness to work in a regulated market where prices are negotiated and fixed.
4. As part of the planned FSM/RRR pilots in Kampala, there is need to develop a system that allows linking the operations of manual operators, Gulpers, cesspool operators and FS re-users as an incentive to discourage inappropriate disposal of FS on one hand and develop the FS reuse market as well. For example having FS transfer stations in different parts of the city would create the linkage between the gulpers (dispose FS the stations) and Cesspool operators (Collect FS from the transfer stations). The Gulper Entrepreneurs could also be encouraged to take on some of the manual emptiers as workers in their respective areas.
5. Fast track the development and promotion of emptiable latrine standards, their dissemination and adoption in Kampala to gradually address the challenge of pits that cannot be emptied when full.

## REFERENCES

1. KCCA (2014), Improving Faecal Sludge (FS) Management for On-Site Sanitation in Kampala City, Uganda.
2. MWE/WSP, 2013. National Faecal Sludge Assessment for small towns in Uganda.
3. WSP (2008). Market Analysis of On-Site Sanitation & Cesspool Emptying Services in Kampala, Water and Sanitation Program.
4. NETWAS Uganda, 2011. Market Study on Demand for Use of Wastewater, Excreta and Faecal Sludge and Other Related By-products

# Annexes



## ANNEX 1

### List of Mechanical/Cesspool FS Collection Operators Contacted in Kampala

No.	Name of Person Consulted	Title	Organization	Telephone Contact	Location Coordinates	Location
1	John XXXXXX	Cesspool Entrepreneur	Informal	0752XXXXXX	N: 000,19' 18.264" E: 0320,36' 30.866"	Bugolobi
2	Ssalongo XXXXXX	Cesspool Entrepreneur	Informal	0751XXXXXX	N: 000,20' 46.972" E: 0320,32' 35.286"	Lubigi
3	XXXXXX John Bosco	Cesspool Entrepreneur	Informal	0772XXXXXX	N: 000,20' 46.972" E: 0320,32' 35.286"	Lubigi
4	XXXXXX Yossam	Cesspool Entrepreneur	Informal	0753XXXXXX	N: 000,20' 46.972" E: 0320,32' 35.286"	Lubigi
5	Daniel XXXXXX	Cesspool Entrepreneur	XXXXXX Sanitation Ltd*	0782XXXXXX	N: 000,19' 18.264" E: 0320,36' 30.866"	Bugolobi
6	Charles XXXXXX	Cesspool Entrepreneur	Informal	0777XXXXXX	N: 000,19' 18.264" E: 0320,36' 30.866"	Bugolobi
7	Wilson XXXXXX	Director	X XXXXXX & X XXXXXX General Agencies Ltd**	0755XXXXXX	N: 000,19' 18.264" E: 0320,36' 30.866"	Bugolobi & Rubaga

\* Has certificate of Incorporation

\*\* Has Certificate of Incorporation and NEMA License

## ANNEX 2

### List of Gulper Operators Contacted in Kampala

No.	Name of Person Consulted	Title	Organization	Telephone Contact	Location Coordinates	Location
1	John XXXXXX	Director	XXXXXX Services Ltd	0774XXXXXX	N:000,21' 07.164" E:0320,34' 09.307"	Bwaise-Kubiiri
2	John XXXXXX	Gulper Entrepreneur	XXXXXX Sanitation Ltd	0777XXXXXX	N:000,20' 18.084" E:0320,33' 02.936"	Kasubi-Kawaala
3	Isaac XXXXXX	Emptying Entrepreneur	Informal	0757XXXXXX	N:000,21' 42.816" E:0320,34' 09.060"	Kawempe - Tuula
4	Charles XXXXXX	Director	XXXXXX Enterprises Ltd	0772XXXXXX	N:000,22' 06.678" E:0320,31' 40.278"	Nansana

## ANNEX 3

### List of Informal (Manual) FS Collectors Contacted in Kampala

No.	Name of Person Consulted	Title	Organization	Telephone Contact	Location Coordinates	Location
1	Sam XXXXXX	Manual Emptier	Informal	0751XXXXXX	N: 000,17' 44.730" E: 0320,34' 46.743"	Nkere Zone Makindye
2	Charles XXXXXX	Manual Emptier	Informal	0752XXXXXX	N:000,18' 34.758" E:0320,32' 26.761"	Lungujja - Rubaga
3	Hassan XXXXXX	Manual Emptier	Informal	None	N:000,22' 14.928 E:0320,37' 08.618"	Kiwatule Zone Balintuma
4	XXXXXX Tofa	Manual Emptier	Informal	None	N:000, 21' 14.388" E:0320, 34' 16.709"	Kalerwe - Kawempe

## ANNEX 4

### List of RRR Private Sector Contacted in Kampala

No.	Name of Person Consulted	Title	Organization	Telephone Contact	Location Coordinates	Location
1	XXXXXX Ssenyonjo	Emptying & Composting Entrepreneur	Informal	0775XXXXXX	N:000,17' 43.854" E:0320,34' 48.199"	Nkere Zone Makindye
2	XXXXXX Fred	General Manager	Formal	0706XXXXXX	N:000,22' 42.168" E:0320,31' 11.329"	Nansana

## ANNEX 5

### Inventory of Cesspool Trucks and Their Ownership in Kampala

CESSPOOL TRUCKS IN KAMPALA- OCTOBER 2015				
Ownership (As per PEAU discussions)	Registration Number	Truck Capacity (m <sup>3</sup> )	Names of Owner (As per URA database)	Telephone Contact
KCCA Trucks	LG0XXX-01	5,000		
	LG0XXX-01	5,000		
XXXXXX(U) LTD	UAAXXXZ	4,000		
	UABXXXK*	4,000	John XXXXXX	0752XXXXXX
	UAEXXXF	4,000		
	UAEXXXU	7,000	William XXXXXX	0788XXXXXX
XXXXXX (U) LTD	UAFXX XU	7,000		
	UAFXX XY	4,000	Haruna XXXXXX	0712XXXXXX
Truck Operator is Owner	UAFXX XM	3,600	Haddaadi XXXXXX	0782XXXXXX
	UAGXX XT	2,700		
	UAGXX XU	7,000		
	UAGXX XF	10,000		
School	UAGXX XX	3,600		
	UAGXX XU	3,000	XXXXXX LTD	0752XXXXXX
Hotel- XXXXXX	UAHXX XT	4,000		
	UAHXX XP	3,000	Ishaka XXXXXX	0712XXXXXX
School	UAHXX XP	4,000	XXXXXX Foundation	078XXXXXX
Truck Operator is Owner	UAHXX XD	4,000	George W. XXXXXX	0772XXXXXX
Truck Operator is Owner	UAJXX XH	4,000		
XXXXXX (U) LTD	UAJXX XU	4,000		
Not available	UAJXX XZ	10,000		
XXXXXX (U) LTD	UAJXX XD	4,000		
	UAJXX XD	3,700	Peter XXXXXX	0772XXXXXX
	UAKXX XM	4,000		
XXXXXX (U) LTD	UAKXX XZ	3,600		
	UAKXX XZ	2,000		
	UALXX XZ	2,000	Fahad XXXXXX	0782XXXXXX
	UALXX XH	8,000	Richard XXXXXX	0718XXXXXX
	UALXX XZ	6,000	XXXXXX Bank	0772XXXXXX

Ownership (As per PEAU discussions)	Registration Number	Truck Capacity (m <sup>3</sup> )	Names of Owner (As per URA database)	Telephone Contact
	UALXXXZ	3,000		
Truck Operator is Owner	UALXXXL	5,000	Meddie XXXXXX	0788XXXXXX
	UANXXXD	4,000	XXXXXX Muhammad	0772XXXXXX
	UANXXXN	3,000		
	UANXXXN	10,000		
	UANXXXN	4,000		
XXXXXX	UANXXXN	10,000	Peter XXXXXX	0772XXXXXX
	UANXXXN	1,800		
	UANXXXU	2,700	XXXXXX Muhmood	0772XXXXXX
	UANXXXU	2,500	Joseph XXXXXX	0772XXXXXX
	UANXXXD	5,000		
XXXXXX	UANXXXN	10,000	Peter XXXXXX	0772XXXXXX
Fabricated from forward truck	UAPXXXZ	4,000		
	UAPXXXB	3,000		
Fabricated from forward truck	UAQXXXL	4,000	Hassan XXXXXX	0702XXXXXX
XXXXXX	UAQXXXW	10,000	Mwesigwa XXXXXX	0752XXXXXX
	UAQXXXZ	4,000		
	UASXXXV	6,500		
	UASXXX	3,000	Multi Auto Uganda Ltd	0701XXXXXX
	UASXXXS	4,000	XXXXXX Charles XXXXXX	0773XXXXXX
	UASXXXV	2,700	Malik Trading LTD	0772XXXXXX
	UASXXXG	7,200	Bashir XXXXXX	0392XXXXXX
	UATXXXN	4,000	Abubaker XXXXXX	0772XXXXXX
School	UATXXXM	4,000	Emmaus Foundation	0782XXXXXX
Company	UATXXXU*	10,000	XXXXXX XXXXXX General Agencies	0712XXXXXX
Wanyange (U) LTD	UATXXXG	10,000	XXXXXX Grain Millers	0714XXXXXX
	UATXXXU	4,000	Muhamed XXXXXX	0772XXXXXX
Truck Operator is Owner	UATXXXZ	4,000	James XXXXXX	0772XXXXXX
M.M PUB	UATXXXT	10,000	Peter XXXXXX	0772XXXXXX
	UATXXXJ	1,800	XXXXXX Motors co LTD	0702XXXXXX
XXXXXX & Sons	UATXXXE	3,700	Zaituni XXXXXX	0782XXXXXX
XXXXXX Company	UATXXXV	10,600	Peter XXXXXX	0772XXXXXX
Not available- taken to Sudan	UATXXX	20,000	SunXXXXXX	0776XXXXXX
	UATXXXZ	4,000	Ronald XXXXXX	0775XXXXXX
	UATXXXB	3,000	Lemessa XXXXXX	0777XXXXXX
XXXXXX (U) LTD	UAUXXXD	10,000	John Barry XXXXXX	0772XXXXXX
	UAUXXXB	2,700	Sarah XXXXXX	0782XXXXXX
	UAUXXXG	4,000	XXXXXX LTD	0782XXXXXX
	UAUXXXC	4,000	XXXXXX Bank	

Ownership (As per PEAU discussions)	Registration Number	Truck Capacity (m <sup>3</sup> )	Names of Owner (As per URA database)	Telephone Contact
	UAUXXXB	4,000	MH Auto trading Co. LTD	0772XXXXXX
Truck Operator is Owner	UAUXXXD	3,000	Emmanuel XXXXXX	0772XXXXXX
Company	UAUXXXC	10,000	Richard XXXXXX	0772XXXXXX
	UAVXXXC	4,000	XXXXXX Trading LTD	0772XXXXXX
	UAVXXXB	3,600	XXXXXX Enterprises	0772XXXXXX
XXXXXX company	UCSXXX	7,000	Richard XXXXXX	0757XXXXXX
	UAWXXXL	3,000	Richard XXXXXX	075XXXXXX
	UAXXXXK	2,700	XXXXXX Investments LTD	0706XXXXXX
Police Truck- has 2 trucks in No	UPXXXX	8,000		
UPDF- has 2 trucks in No.				
CIDI- has 4 No. Trucks of 4.5m3 each				

# ANNEX 6 INTERVIEW GUIDE

## SEMI-STRUCTURED INTERVIEW QUESTIONS FOR FAECAL SLUDGE EMPTIERS AND RESOURCE RECOVERY AND REUSE PRACTITIONERS INVENTORY IN KAMPALA

### 1. INTRODUCTION

KCCA with support from GIZ is assessing ways of supporting the private sector involved in faecal sludge emptying and resource recovery and reuse in Kampala. The assessment will identify who the service providers are and the kind of support required for better management of sanitation in Kampala.

The results will be used confidentially and we request you to answer the questions as sincerely as possible. The interview will take about 30 minutes of your time.

### 2. INTERVIEWEE INFORMATION

1. Name of interviewee(s): \_\_\_\_\_

2. Job Title of interviewee: \_\_\_\_\_

3. Telephone of interviewee: \_\_\_\_\_

4. Date/Time of interview: \_\_\_\_\_

### 3. ORGANISATION/COMPANY INFORMATION

1. Organisation/Company name \_\_\_\_\_

2. Type of Organisation/ Company  
\_\_\_\_\_ *e.g. Formal, informal, limited liability company etc.*

3. Office location/Coordinates in Kampala \_\_\_\_\_

4. Year when the business was established or when operations started \_\_\_\_\_

5. Any legal documents for the company *e.g. Certificate of Incorporation, License for FS etc.* \_\_\_\_\_

### 4. HUMAN RESOURCES

1. Who owns the organisation/ company \_\_\_\_\_

2. Total number of employees \_\_\_\_\_

## 5. OPERATIONAL INFORMATION

### 1. Services Provided

a. Describe type of services offered by your organisation	b. Indicate percentage of time spent or % of revenue generated from each service

### 2. Management

1. In which parishes/wards do you frequently operate/work:

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2. How do customers request for your business (e.g. call your phone, come to your home or business, word of mouth etc.)

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3. What are your usual business days/hours:

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4. Are your services or products being fully utilised by the public at the moment? (Yes/No)

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5. If 4 is No, please explain why?

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## 6. MATERIAL INFORMATION

1. Describe basic equipment you use  
(*type, condition, quantity, make etc.*)

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2. Who are your equipment /  
materials suppliers  
(*Provide name & address*)

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3. What are the strengths and/  
or weaknesses of the available  
equipment

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1. Do you use any PPE? Describe PPE  
used and who uses it (*type quantity  
e.g. boots, mask, safety glasses,  
gloves etc.*)

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2. Is it mandatory to wear PPE?

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3. What are the barriers that  
discourage you from using PPE (*e.g.  
too hot, restrict movement, etc.*)

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## 7. MARKETING AND CUSTOMER SATISFACTION

1. Describe the typical type of customers you have (e.g. 30% individual low income, 40% individual medium-income & 30% businesses or institutions)

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2. Estimate the number of customers you serve per month

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3. What are challenges do you face with your Organisation/Company (e.g. low demand, lack of labor, poor equipment etc.)

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4. How do you ensure that your target customers find out about your service? (Radio, Fliers, Community radios, Referrals )

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## 8. PERCEPTIONS AND ATTITUDE

1. Do you like your job?

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2. What do you like about your job?

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3. What aspects of the job do you not like?:

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## 9. FINANCIAL INFORMATION

1. How much do you charge per job (e.g. emptying per trip, etc.)

*Private Households:* \_\_\_\_\_

*Institutions:* \_\_\_\_\_

2. How do you manage customer payments (e.g. payment prior to or after service, invoices, receipt, book keeping etc):

\_\_\_\_\_

\_\_\_\_\_

3. How do you manage payments to employees or hired labour?: (e.g. monthly payments, payment per job etc)

\_\_\_\_\_

\_\_\_\_\_

4. How much do you pay each employee or hired labour? (e.g. Turnman-150,000 UGX per month etc)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Describe initial capital investment and estimated replacement frequency (e.g. Truck, pump, shovel etc)

Item & Replacement Frequency	Total Cost

4. Do you have a business bank account where you bank all your revenue?

\_\_\_\_\_

## 10. OTHERS

1. What were the sources of financing for the business  
(e.g Loans, Savings, grant etc.)

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2. Where do you dump FS after emptying (**only for FS operators**)

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3. How do you ensure safety of your final product (**only for RRR operators**)

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4. In what aspects of your business is Government support required?

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**Thanks for your Time**







