



Faecal Sludge Management in Kampala, Uganda

Project insights from GIZ Uganda

Kampala, Uganda



189 Km²



Population 1.5 million

Daytime Population 3 million



Kampala



live in informal settlements



rely on unsewered on-site sanitation

Key Drivers for Poor Sanitation

- ✘ High population growth
- ✘ Rapid expansion of informal settlements
- ✘ Inadequate financing
- ✘ Land ownership and space for infrastructure development
- ✘ Wide range of conflicting interests from various stakeholders

The sanitation situation in most of Kampala can be summarized as follows:

- About 90% of Kampala's population relies on on-site sanitation facilities (pit latrines and septic tanks);
- 50% of households share one sanitation facility, leading to unhygienic conditions;
- On average, 5 households (~ 25 people) share 1 sanitation facility, however there are facilities shared by up to 17 households (~ 85 people);
- More than 50% of pit-latrines are un-lined and filled with solid waste;
- Only 20 – 25% of the toilets have ever been emptied by a service provider, the rest have either been abandoned or been emptied directly into the environment, posing health and environmental risks for the city and its people.

Against this backdrop, GIZ began to support Kampala Capital City Authority (KCCA) and other key stakeholders in 2012 to improve the sanitation sector of Kampala, with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ). This document highlights selected activities from the period 2015 – 2017, which were co-financed by the Swiss Agency for Development and Cooperation (SDC).



FAECAL SLUDGE MANAGEMENT PRIVATE SECTOR

The **Faecal Sludge Management (FSM)** market is **not regulated**, competition stems from customers choosing a supplier when needed and negotiating the charges directly; only the dumping fees at the treatment plants are fixed.

There are **88 cesspool emptying trucks** with sizes varying from 2m^3 - 10m^3 and **10 Gulper operators** active in Kampala. **ONLY ONE COMPANY HAS A LICENCE** from the National Environment Management Authority (NEMA) to transport FS legally, all the others are working informally.

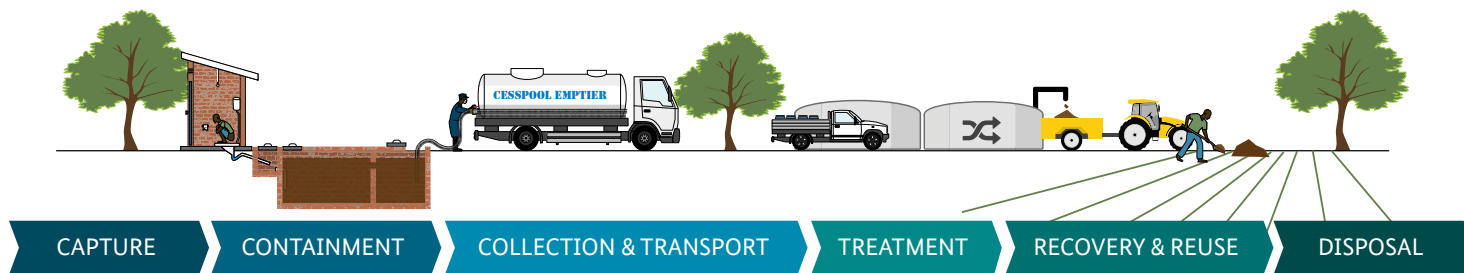
Two associations are to some extent organising the private cesspool truck operators, but this does not give them legal status.

The Gulping emptying charges range from **USD 7.00 - USD 11.00 per 200-litre barrel**. Cesspool trucks are proportionally cheaper, charging from **USD 20.00 for 2.5m^3 - USD 50.00 for 10m^3** of FS. With an average daily income of USD 2.00 in poor urban households, both services are considered expensive.

Bugolobi Sewage Treatment Work is designed to treat **only domestic and industrial effluents**, and has a capacity of 14.500m^3 (currently being expanded). It receives FS on a daily basis, even though it is not designed to treat it (no official data on the exact amount available).

Lubigi Sewage and Faecal Sludge Treatment Plant, commissioned in 2014, has a **sewage treatment capacity** of $5,000\text{m}^3$, which is to be expanded to $12,500\text{m}^3$, and **faecal sludge treatment capacity** of 400m^3 . It currently receives around 600m^3 of faecal sludge per day.

GIZ together with KCCA appreciates that onsite sanitation will be the reality in Kampala in the mid or long-term. It has therefore decided to take a holistic approach to tackle the sanitation challenges in Kampala by improving the so called Faecal Sludge Management (FSM) of the city. This entails, considering the entire sanitation chain from containment, collection, transport and treatment to disposal or reuse.



The main principles that are being followed include:

1. **Strengthening of the legal and institutional framework conditions with clear roles and responsibilities for sector players**
2. **Private sector engagement to support the operators in the reform process**
3. **Awareness and demand creation among user groups**

Achievements: Containment



Minimum standards for sanitation technologies

These guidelines incl. architectural drawings are for the first time setting the standards for minimum requirements, which toilets have to meet in order to be emptiable and environmentally friendly. They support both the users in providing practical assistance for choosing an appropriate sanitation technology and for its construction as well as the regulator in its enforcement efforts.



Above: Minimum Standards document showing technical drawings and sketches

Awareness creation and enforcement support

Development of streamlined behavioural change communication material in close collaboration with all relevant stakeholders that focuses on three key behaviours:

Construction of emptiable toilets according to the minimum standards for on-site sanitation technology options for Kampala.

The use of safe pit emptying services.

Understanding basic toilet hygiene practices to promote health and minimize spread of disease in the communities.

KCCA is now only using these key messages in the city and urges all stakeholders to do the same in order to avoid too many different and/or diverging messages.

Approach: focus on only a few messages to make sure they stick.



Clockwise from top left: A KCCA official locks a sub-standard toilet; pull-up banners highlight good hygiene and proper emptying practice; construction of an emptiable pit latrine; behaviour change communication booklets

Achievements: Emptying & Transportation



Clockwise from top left: private Gulper operators empty a toilet; KCCA officials sensitizing private sector operators and communities; private sector operators at a Sanitation Safety Planning training on how to use personal protective equipment.

Private Sector Engagement

Constant and productive collaboration and exchange between the private emptying operators and KCCA has been facilitated to overcome the atmosphere of mistrust and instead create a platform for joint planning and implementation of the sector reform. Input is sought from the operators on their challenges and needs and in turn, KCCA informs them about upcoming regulatory measures and legal requirements. An MOU has been signed between KCCA and the two FS emptying associations that for the first time sets out the roles and responsibilities of both parties.



MAIN LESSONS LEARNED

To build up trust between the private operators and the regulator, regular exchange formats have to be conducted that are facilitated by a neutral person.

Make sure that input by the operators is taken seriously to create a real spirit of collaboration.

Achievements: Emptying & Transportation

Call Center

- To link private sanitation service providers with potential customers
- To serve as an information and complaint platform for customers
- To monitor and evaluate sanitation service provision through a data capture dash board

As an incentive for the private operators to collaborate and an attempt to better regulate the sector, a sanitation call center has been set up at KCCA in November 2016. What started as a pilot is now a fully-fledged call center with three KCCA staff members working full time and the Ministry of Health identifying options of attaching themselves to the call center. The call center system comprises of a toll-free number (+256 0800990000) and has been very successful in creating a link between users, service providers and the regulator and has increased the market for the private sector significantly. From November 2016 to July 2017 the number of sanitation-related calls rose to a total of 1652 (on average 46 calls per week) and over 50% of those calls result in effective emptying of toilets. Most of the calls are requesting for sanitation services, others are seeking advice or filing complaints (e.g. abandoned toilets, opening of toilets to the drain etc.).



MAIN LESSONS LEARNED

A great hindrance for many people to engage service providers for emptying of their toilet is mistrust and/or lack of information – a call centre can overcome this barrier.

Make sure that the software used is flexible enough to allow for future developments and integration with other systems.

Make sure that staff is not dependant on project budget but integrated into the partner's payroll structure to allow for sustainability beyond project duration.

KCCA call center personnel at work



KCCA
TOLL FREE
HOTLINE



0800
990000

Achievements: Emptying & Transportation



Clockwise from top left: map showing results from tracking exercise; Lubigi Sewage and Faecal Sludge Treatment Plant; “Epicollect” app; a private cesspool operator truck

Tracking

In order to promote and to regulate the FS emptying and transportation sector, it is necessary to understand the existing patterns of service delivery. A citywide GPS tracking exercise of the cesspool and gulper operators’ activities was conducted to answer the following questions:

1. **What is the current demand for FS emptying services (or lack of it) in the different areas of Kampala?**
2. **Which areas are not (frequently) served?**
3. **What would be possible ways of optimizing the existing work patterns?**

Two distinct tracking approaches had been tested before the exercise (GPS tracker versus smart phones) and the smart phone had proven to be more precise and informative for the set objectives. The App called “Epicollect” was installed on smart phones and the operators trained in filling out an online form when emptying and de-loading the FS. In total 54 private cesspool emptier and 5 Gulper operators were tracked over a period of two month from January to March 2017.

A lot of valuable information was gathered during the exercise (a total of 900 points with > 90% validity) that will

Achievements: Emptying & Transportation

inform KCCA's decision making on the sanitation sector's reform process and questions like pro-poor subsidies, a division of the city into FS collection zones and the development of Service Level Agreements.

Some of the findings

Only 24% of emptying takes place in informal settlements; pro-poor incentives should to be considered.

61% of all FS transports are de-loaded at the Lubigi Treatment Plant, 39% at Bugolobi. This is alarming since the latter is not designed to treat FS at all and suggests that additional treatment capacity for FS is urgently needed.

42% of all latrines emptied by Gulper entrepreneurs are located in formal areas. Gulping is supposed to be a pro-poor service, especially designed for densely populated informal urban settlements; however, this statistic suggests that the services are still too expensive for the poorest segments of the population.



MAIN LESSONS LEARNED

Provide enough time for testing of different technologies in order to find one that suits the needs most.

Literacy levels can be low among the emptying operators both in terms of English language and digital literacy; plan with enough time and human resources for (on-site) training.

The availability of GIS data, e.g. for road networks, can be a limiting factor the success of the exercise.

Achievements: Emptying & Transportation

Mobile FS Transfer Tanks

A new innovative technology has been tested in selected areas of Kampala to reduce the price for Gulping services and therewith make toilet emptying in informal settlements more affordable. Gulper operators are supposed to be a pro-poor solution for densely populated urban settlements, where cesspool trucks cannot reach; however, they can empty only relatively small volumes of FS with a maximum of six 200-litre barrels at a time and the fuel costs for long haulage distances to either of the two treatment plants, make their services un-proportionately expensive. The idea is hence to reduce the transport ways for Gulpers by offering an intermediate de-loading solution.

Quick facts

Refurbishment of two old and discarded cesspool emptying trucks and procurement of a tractor for hauling of the FS transfer tanks.

Development of a business model that includes a mobile transfer tank entrepreneur, Gulpers and customers.

Branding of the tanks: bright green colour and the slogan “Wetaase” – “Help yourself” + “Aba Kabuyonjo” – “Those who deal with faeces” + “KCCA call center number”.



MAIN LESSONS LEARNED

High capital investment costs

Spillage of FS when transferring it from the barrels to the tank

Gulper entrepreneurs who have to rent a transport vehicle for the barrels do not make enough profit with current business model



MAIN SUCCESSES

Price of Gulping services can go down by 20 – 30% due to shorter transport distances

Increasing numbers of pit latrines being emptied safely in informal settlements due to the transfer tank services

Clockwise from top left: KCCA engineers inspect technical plans for the mobile FS transfer tanks; defunct cesspool emptying tanks prior to refurbishment; refurbished FS transfer tank with branding



Achievements: Resource Recovery & Safe Reuse



Clockwise from top: RRR entrepreneurs complete a training module; plastic sheet greenhouse speeds up the briquette drying process; mechanized briquette-making machine

All photos © GIZ/KCCA

Resource Recovery & Safe Reuse

GIZ and KCCA acknowledge that with improving the city's FSM and the currently limited treatment capacities of FS at the two existing treatment plants, there needs to be an alternative solution to the potentially increasing amounts of emptied FS. This is why an additional focus is placed on the topic of resource recovery and safe reuse (RRR) of different waste streams including FS.

16 start-up entrepreneurs have undergone two 5-day training modules on “Business Model Development in RRR”.

14 of them have taken part in a business ideas competition.

6 of them have been selected and supported through intensive coaching and mentoring with national and international coaches.

The 4 most promising ones – all engaged in briquette production – have signed an MOU with GIZ and received equipment to boost their production processes.



MAIN LESSONS LEARNED

It is a challenge and takes a lot of time to reach out to the right (and a critical number of) people who are interested in RRR business development.

Access to finance is limited and small-scale entrepreneurs almost do not have any capital investment at hand; for successful project implementation within a limited time frame, financial support is necessary.



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