

The Toilet Tracker: mapping sanitation in peri-urban Lusaka

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This Practice Note introduces the Toilet Tracker, a new tool for supporting sanitation business development and public health monitoring. Currently being tested in the peri-urban area (PUA) of Kanyama, the Tracker enables information on the ownership, location, quality and emptying history of pit latrines in Lusaka to be stored in the same place for the first time.

Developing a safely managed FSM service in Kanyama

Kanyama is Zambia's largest PUA, with a population of over 200,000 people. In the absence of any sewer network, households in Kanyama are dependent on pit latrines of widely varying standards; in recent years, Kanyama's high water table has combined with poorly constructed pit latrines and a lack of widespread safe emptying practices, exacerbating the spread of diseases like cholera.

Since 2013, WSUP has worked in partnership with Kanyama Water Trust - a community-based organisation mandated by Lusaka Water and Sewerage Company (LWSC) to provide water and sanitation services in the PUA - to address the sanitation service gap, by developing one of the first safely managed FSM services in Africa targeted at and funded by low-income customers.

Enhancing FSM business viability through improved customer data

The FSM service in Kanyama is now well established, reaching 33,000 people to date. However, it was apparent that business development would be enhanced by improved information about new and existing customers, including if their pits are ready for emptying; and if their latrine should be upgraded. The Tracker concept was developed, with the aim of providing a registry that could monitor and predict pit latrine upgrades and FSM service demand, enabling pit emptying businesses and toilet construction companies to improve their customer targeting.

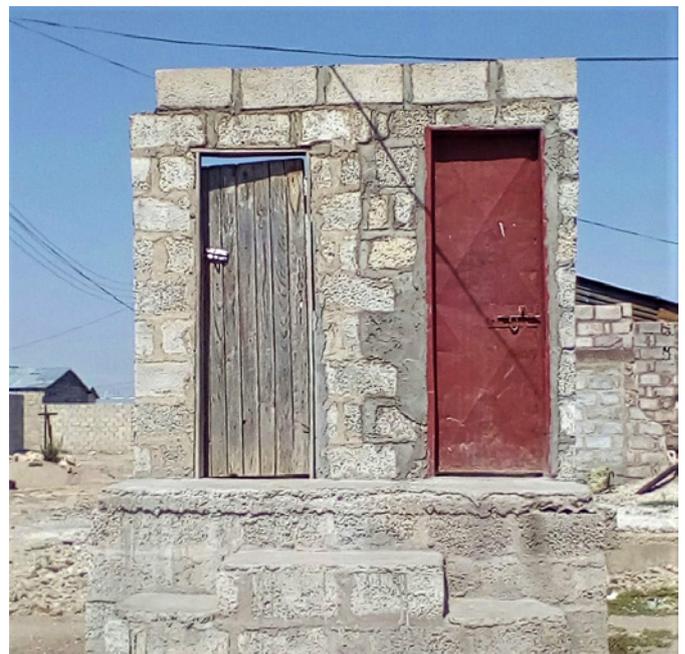


Image: An example of pit latrines in Kanyama, as surveyed for the Toilet Tracker.

The concept received buy-in from institutional partners including LWSC and Lusaka City Council (LCC), who understood how improvements in the quality of data about Kanyama's pit latrines could contribute to better public health outcomes.

Collecting the data

Almost 16,500 toilets were surveyed in Kanyama from March to June 2017. Data was collected through a combination of structured questionnaires (recorded on mobile tablets programmed with mWater software), observation and image capture. Questionnaires recorded the location of the toilet, key demographic information and the status of the facility (Table 1 overleaf); completed questionnaires were randomly selected to verify data. The collection and funding of spatial data for street mapping by GIZ was combined with the questionnaire data to display Kanyama's toilets and their status on an up-to-date map of the area (Figure 1 overleaf).

Table 1: Questionnaire data recorded in the Toilet Tracker.

Toilet location	GPS location data
Demographic information	Number of users Plot owners Contact details Occupancy status
Status of the facility	Quality of the structure Amount of sludge Approximate maximum volume Date of most recent emptying service Date of most recent upgrade to the facility User motivation for improving the toilet

The Toilet Tracker: potential applications

Quantifying the market potential of sanitation services

A core function of the Toilet Tracker to date has been to quantify the size of the market for 1) toilet upgrades and 2) pit-emptying services in Kanyama.

Toilet upgrades: Of the 16,500 toilets surveyed - all of which were on-site - 12,000 toilets were pit latrines of varying quality, including Ventilated Improved Pits (VIP), lined and unlined pits, and disused and/or buried pits. The majority of toilets surveyed were in residential plots (although toilets in schools, bars, churches and markets were also included). This information could prove invaluable for toilet construction companies and other actors in promoting uptake of pour-flush latrines in Kanyama, where survey data also revealed that only 7% of toilets had been upgraded in the last two years.

Pit-emptying services: The Toilet Tracker contains the details and location of about 1,000 pit latrines which are categorised as 'ready for emptying', a third of which are almost full, with around 10% completely full and in urgent need of emptying. Of the pits that are not yet totally full, it is estimated that a quarter will be ready for emptying by December 2018. Most toilets surveyed are used by six or more people, indicating that they fill up quickly, while just over 7% of household toilets had been emptied before. The data affirms the substantial market for pit emptying services in Kanyama, and provides the basis for the existing service led by Kanyama Water Trust to conduct targeted marketing at the household level.

Long-term sanitation planning support

Sanitation in Lusaka is at the cusp of major change as the World Bank-led US\$ 250 million Lusaka Sanitation Project (LSP) begins. The Toilet Tracker could play an important role in providing context for planned interventions, including in Kanyama where a pilot will see 12,000 new toilets constructed; and by mapping sanitation in Lusaka's other PUAs.

Figure 1: Kanyama's pit latrines - located and colour coded according to fullness. Red = full pit latrine, blue = almost full, green = half full, purple = almost empty, yellow = empty. Source: mWater.



Public health monitoring

Overflowing pit latrines in Kanyama and other PUAs in Lusaka are linked to outbreaks of illness and disease. The Toilet Tracker stores data that can be used by public health bodies to target inspections of sanitation facilities which are close to full, at key periods - just before the start of the rainy season, for example - to reduce the potential for disease outbreaks. The Toilet Tracker is currently performing this function for the Ministry of Water, Development, Sanitation and Environmental Protection and the Ministry of Health, who are working alongside LWSC and LCC to combat a cholera outbreak in several areas of Lusaka (including Kanyama) which began in October 2017.

Next steps

The Toilet Tracker and its data is expected to come under the control of LCC and LWSC, with the latter utilising it in the planning and implementation of the LSP. The future of the tool will hinge on careful and regular maintenance to ensure data is accurate and up-to-date; WSUP aims to facilitate this through continued capacity development support as part of its ongoing partnership with LWSC and other key actors in Lusaka. Effective maintenance of the Toilet Tracker will require sustained institutional commitment, but the immediate and long-term impact of well-managed and comprehensive data will be substantial.

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