THE REPUBLIC OF UGANDA
MINISTRY OF WATER AND ENVIRONMENT

Umbrella of Water and Sanitation
"Safe Water For All"

SUSTAINABLE FAECAL SLUDGE MANAGEMENT THROUGH A CESSPOOL TRUCK LEASING MODEL

A Case Study of Small to Medium-sized Towns in Northern Uganda

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ACKNOWLEDGEMENTS

This work was made possible through financial support of the German Federal Ministry of Economic Cooperation and Development (BMZ), GIZ in close collaboration the Ministry of Water and Environment (MWE).

Thanks go to the Local Government partners of Apac Municipality, Aduku, Anaka, Ibuje, Amuru, Purongo, Olwiyo and Koch Goma Town Councils, and Private sector partners including British Hygiene Care, Lengo Ber Sanitation and Aswa Connection for the active participation in providing invaluable feedback on your experiences while on the frontlines of implementing the program.

Special thanks to the Northern Umbrella for Water & Sanitation (NUWS) and GIZ Sanitation for Millions Uganda teams for the insightful input, technical backstopping and the peer review of the document whilst providing helpful feedback.

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PUBLISHED BY

Ministry of Water & Environment (MWE) - Northern Umbrella for Water & Sanitation (NUWS)
with support from GIZ Sanitation for Millions Uganda.

FEBRUARY 2025

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giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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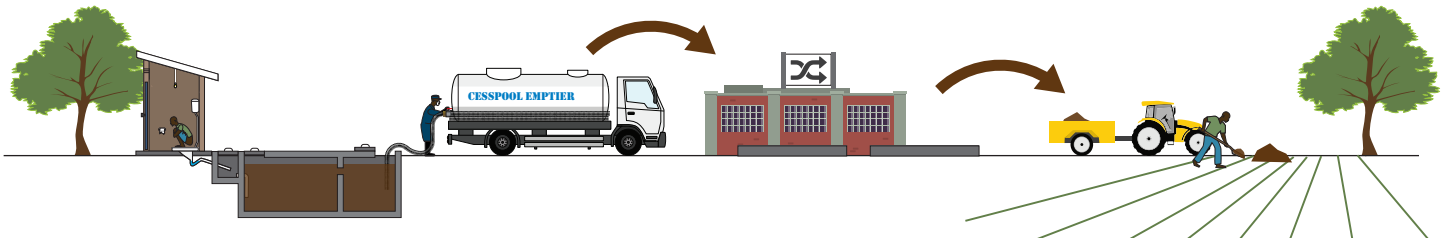
SUMMARY

Over 90% of population use onsite sanitation (OS) facilities in Uganda, implying a great need for safe emptying services to ensure a safely managed OS system. As a result, Uganda's Ministry of Water and Environment (MWE) utility Northern Umbrella for Water & Sanitation (NUWS) with support from GIZ Sanitation for Millions (S4M) programme in Uganda has piloted several innovations and concepts to improve Faecal Sludge Management (FSM) across the entire sanitation service chain in small to medium sized towns in Northern region of Uganda. Key interventions have focused on:



CAPTURE & STORAGE → **EMPTY & TRANSPORT** → **TREATMENT** → **REUSE**

- Testing of targeted household toilet incentives for safely managed sanitation.
- Development of minimum standards for containment (toilets).

- Leasing of cesspool trucks - (8,000 liters' cesspool truck with support from GIZ S4M.
- Scheduled emptying.
- Clustering of communities and towns.
- Capacity building on Standard Operating Procedures (SoPs).
- Digital tracking.

- Standardized infrastructural design of Faecal Sludge Treatment Plants (FSTPs) and construction (Apac).
- Development of Operation and Maintenance Guidelines for FSTPs.
- Capacity building on SoPs for FSTPs.

Cesspool truck leasing model focus

To ensure efficient operation and management of the cesspool truck, innovative leasing approach of public owned fleet to private sector was piloted under NUWS. This approach is enhanced by scheduled emptying, digital tracking system, measures to improve containment and other enabling environment factors allowing the private operator to efficiently serve more than one cluster towns (i.e., Apac and Anaka clusters). As a result,

- Increases volume of faecal sludge delivered to treatment plants by 3.5 times from an average of 40 m^3 between 2019 and 2023.
- Safe and affordable faecal sludge emptying services have been promoted.
- Increased private sector involvement and catalyzed private sector investment in sanitation economy (emptying and transportation).
- Increased awareness of safe emptying practices catalysing households' investment in safely managed toilets for future emptying.
- Increased coverage of climate resilient sanitation systems.

This case study therefore highlights the successes of cesspool truck leasing model under the Public Private Partnership (PPP) mechanism to deliver sustainable Faecal Sludge Management (FSM) in Northern Uganda. The lessons shall support further refinement of tested sector approaches for potential upscale across Uganda and other developing countries.

OVERVIEW

Northern Umbrella of Water and Sanitation (NUWS) is one of the deconcentrated structures of Ministry of Water and Environment (MWE) under the Directorate of Water Development (DWD), in the Department of Urban Water Supply and Sewerage Services. It was registered as a government limited company (by guarantee) on the 3rd of February 2011. NUWS is mandated to manage piped water supply and sanitation systems in small towns (STs) and rural growth centres (RGCs) in Northern Uganda. NUWS is committed to improving the sanitation situation and this forms part of the on-going commitment by the government of the republic of Uganda to improve water and sanitation services in the RGCs and STs of Northern Uganda.

Northern Umbrella of Water and Sanitation with support from GIZ Sanitation for Millions program has over the years been promoting FSM in the Apac Cluster towns of Aduku and Ibuje Town councils and Apac Municipality with a catchment reach of over 62,834 people and in the Anaka cluster Towns of Anaka, Amuru, Purongo, Olwiyo and Koch Goma Town Councils with a catchment reach over 150,000 people.

Figure 1: *Geographical location of the cluster towns where the leasing model was piloted under NUWS.*

PROBLEM

Access to safely managed sanitation services in Uganda is still limited, currently standing at 39.2% (Urban) and 7.1% (rural), while up to 22% of rural Ugandans still defecate in the open (MWE, 2020)[1] . Onsite sanitation (OS) remains the most used sanitation system in Uganda, with over 90% of population using OS facilities (UBOS, 2019)[2] . This implies a great need for emptying services to ensure a safely managed OS system. However, unsafe practices like manual emptying, illegal dumping of faecal sludge (FS) and the poor implementation of Town Sanitation Plans affect provision of safely managed OS services in most small towns. Poor sanitation contributes up to 80% of the diarrheal disease burden in the country.

Despite substantial investments in FSTPs nationwide, they remain underutilized with low volume of faecal sludge received for treatment. This is partly due to high charges by operators of privately owned cesspool trucks. The involvement of the private sector actors to bridge the gap in FS emptying and transportation service provision is affected by high cost of acquiring privately owned appropriate cesspool trucks. And as a result, a few of the private sector players in FS are unregulated and utilize trucks in poor mechanical conditions, which puts the environment and human health at risk through leakage of FS during transportation, disposal of FS in ungazetted areas among others.

The Ministry of Water and Environment (MWE) with support from partners like the German Development Corporation and other development agencies have invested in cesspool trucks. However, ensuring sustainability requires innovative approaches like leasing of public owned fleet to private sector.

Figure 2: *Handover of the 8,000 litres capacity cesspool truck to MWE by German Development Cooperation.*

1 MWE Water and Environment Sector Performance Report 2020
2 UBOS - Uganda Statistical Abstract 2019

SOLUTIONS

Innovative Cesspool Truck Leasing Model

This approach was piloted in the Apac cluster and upscaled to the Anaka cluster towns, where the private sector took the lead in Faecal Sludge emptying and transportation service provision while government authorities with support from German Federal Ministry of Economic Co-operation and Development provided the asset (cesspool truck)[3] and regulatory oversight. This leasing model separates the legal ownership of the asset (cesspool truck) from the economic user. The lessor (MWE) leased the cesspool truck to the lessees (private operators) for a defined period. The lessee made monthly payments to the lessor, and at the end of the lease period, the cesspool truck would be returned to MWE. The approach has resulted into increased demand and access to quality and affordable emptying services in the small cluster towns of Apac and Anaka in Northern Uganda.

Figure 3: *Private operator during the sludge disposal at the FSTP at Aminteng, Apac Municipality.*

3 Whereas the FSM market is characterised by purchase of used cesspool trucks with hundreds of thousands of mileages on the odometer, GIZ - S4M purchased a brand-new truck with zero mileage on the odometer.

SUCCESS STORIES

Professionalization of Emptying Services

Capacity building of Private Sector actors for both mechanized (cesspool truck) and semi-mechanized (gulper) operators have been implemented to enhance their FS technical capabilities, hence guaranteeing their sustainability. The capacity building[4] measures included emptying business model, marketing, health and safety, and operational best practices. The private sector beneficiaries included: British Hygiene Care, Lengo Ber Sanitation Ltd and Aswa Connection Ltd. This not only ensured that the operators' entities are profitable, but also continuously provided the community with safe, affordable and quality emptying services.

Figure 4: *Private Operator emptying a customers' sanitation facility at an institution in the Apac Cluster.*

Increased Community Sensitization on FSM

The NUWS implemented measures through radio campaigns, road drives and constant community engagements which have greatly contributed to increased community awareness about safe emptying and transportation as well as construction of lined toilets. As a result, the community demand for lined sanitation facilities has increased and are more willing to pay for faecal sludge emptying service.

"Incorporating & enforcement of minimum standards for onsite sanitation technologies at household, institutional and public levels is key in increasing and improving emptying practices in small towns"

Milton Atati – Health Assistant, Anaka Town Council, Nwoya District

4 This included regular technical backstopping based on the prevailing identified operator needs.

Digitized Tracking Systems contribute to Improved O&M

As the custodian of the cesspool truck, NUWS installed a digital tracking system that enabled easy tracking and monitoring of the cesspool truck during the time it was deployed by the leasee (operator). This system enabled real time tracking by NUWS to establish the cesspool truck location, geofencing where real time alerts would be generated if the truck suddenly entered a marked geo-zone. Based on this pilot therefore, digitized tracking systems were observed to optimize emptying routes in real-time, allowing operators to reduce fuel consumption, time, travel distances, and allows for detailed and accurate records of when and where each cesspool truck has emptied a pit. This ensured transparency and reduced the risk of its misuse by the operators. This directly contributed to improvements in operation and maintenance of the Cesspool Truck.

Web-based applications intensify the adoption of FSM services

It was recognized that web-based applications like "Weyonje North" collected valuable data that can be used for informed decision-making, including information on the state of pit latrines, frequency of emptying, and the spread of FSM services throughout the small and medium sized towns. This data-driven approach enabled key stakeholders including local governments, development partners and the private sector to continuously monitor and improve FSM services based on targeting the areas particularly in need. The Weyonje North app went beyond its operational capabilities, fostering community engagement and awareness about the importance of proper sanitation were through the app, residents would receive information on sanitation best practices, waste disposal, and the consequences of poor hygiene. This educational component helped change behaviours' and promoted adoption of safe sanitation and hygiene practices.

Key role of Sanitation Promoters in amplifying adoption of emptying services

The pilot incorporated a unique structure consisting of Sanitation Marketers by initially enhancing their capacity especially around the emptying service offering, selling skills and customer care before deploying them to the community. Besides Health inspectors and VHTs, Sanitation marketers have played a huge role in promoting emptying services by serving as the first point of contact between the service provider and the customer by educating the community about the health benefits and the need to pay for the emptying services hence facilitating behavioural change within the community.

The role of Emptying Vouchers in Increasing the demand for safely managed sanitation

During the implementation of the pilot, it was observed that voucher/discount emptying have potential to increase demand for safely managed sanitation as offsetting the cost reduces the burden on households and incentivizes them to demand for emptying services. Thus, financial incentives have the potential to unleash private funds that would otherwise not be spent on sanitation services by the community.

Importance of Locating FSTPs within the Viable distance ranges

Typically for emptying businesses, distances between the disposal point (FSTP) and the emptying customer location determines profitability to the private operator and affordability to the community (customer). The recommended viable distances range from 0km - 20km (Very viable) and 21km - 40km (Viable).

The establishment of a FSTP in Aminteng within Apac municipality with support from BMZ has provided a safely managed disposal point for FS and has greatly reduced the distances between the emptying customers and the disposal point. This has resulted into reduced prices for the emptying service hence increased affordability and adoption of the services by the community.

Currently, the Anaka cluster is utilizing the FSTP located in Gulu which is 40.6km away from Koch Goma T.C, 53.9km away from Anaka T.C, 64.6km away from Olwiyo T.C, 69.7km away from Purongo T.C and 55.4km away from Amuru T.C. However, MWE with support from GIZ S4M has worked with Nwoya District Local Government to identify a central location within Anaka Cluster. The FSTP construction design has been developed and approved for construction once resources are available. Once completed, this will reduce the distances between customers and disposal points which will result into increase affordability of emptying services within the Anaka Cluster.

LESSONS LEARNED

Below are some key aspects of the model that could be considered to enhance the operation and inspire uptake of affordable emptying practices.

Need for Enhanced Multi-stakeholder Approach

Even though most small towns have sanitation plans and bylaws, their implementation levels remain low due to limited public funding. The establishment of drainable facilities would be highly enabled by the enforcement of the regulations governing standards around design, construction, operation and maintenance. Therefore, there is need to establish very strong stakeholder engagements / partnerships beyond just with WASH partners to increase not only funding towards FSM promotion in small towns, but also enhance community participation (especially in emptying tariff setting) and ownership of the interventions.

Importance of Promotion of Emptying services in tandem with Drainable facilities

Given that access to pit emptying services can only be realised from communities that have established drainable facilities[5], promotion of drainable sanitation facilities within the community enhances the viability of emptying service. This can be achieved by increasing FSM products options for the communities to facilitate faster adoption based on a product choice and affordability for everyone.

Emptying Brand Perception

During implementation of this pilot, it was observed that the presence of both the logos of the funder German Development Cooperation and GOU being clearly visible on the cesspool truck to some extent impacted the community's willingness to pay for the emptying service. Therefore, development of an independent brand[6] that would act as the face of the emptying service to maintain a market-based perception by the community hence ensuring that a high level of willingness to pay for the emptying service is maintained without negatively distorting the market.

Basis for setting cesspool truck leasing fees

When setting leasing fees to be paid monthly by the lessee, thorough financial projections probing various scenarios should be developed taking into consideration factors such as Demand seasonality, affordability, number of nature of customers (Households Vs Institutions) served, related service expenses and profitability of the private operators. This is because the private operators would eventually pass on the cost of the leasing fees to the emptying customers which would affect the adoption rate of the emptying services by the community.

Criteria for recruiting emptying private sector partners

During the pilot, it was observed that there needs to be a deliberate and in-depth criterion when recruiting the private sector partner. This criterion could include a pitching[7] exercise by the applicants, and would evaluate the applicants based on their business experience and good understanding of the emptying business landscape, realistic business plan proposed as per emptying market size, proposed human resource plan that aligns with the size of the emptying business and a viable proposed leasing fee that would enable the private sector operator to be profitable while ensuring their emptying service remains affordable to the community.

5 These include facilities with lined pits and septic tanks.
6 The brand would preferably be in the local language to ease the community's understanding of the message and it's meaning hence faster adoption.
7 Pitching for a leasing emptying business opportunity would give applicants a chance to showcase their understanding of the emptying business model, and the market dynamics in a compelling way that would drive decision-making for NUWS.

USEFUL LINKS

https://www.sanitationformillions.org/wp-content/uploads/2022/06/2021-success-stories-and-lessons-learned.pdf

https://use.metropolis.org/case-studies/the-weyonje-app#casestudydetail.

https://www.sanitationformillions.org/wp-content/uploads/2022/06/giz2021-en-increasing-access-to-safe-sanitation-and-hygiene-innovative-financing.pdf

FURTHER READING AND REFERENCES

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