

Building markets for local formal pit-emptying businesses: learnings from Uganda and Malawi

Summary of key findings

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Background and context

Fecal sludge management is a big challenge for rapidly growing cities in the developing world. Sewer connections remain limited, particularly in low-income areas and informal urban settlements, where households (but also institutions such as schools and businesses) typically collect fecal sludge in underground latrine pits (lined or unlined) or septic tanks. The removal and disposal of such sludge can pose health and environmental concerns, especially if done by informal pit emptiers who often operate without proper equipment, training, or disposal facilities. Unsafe fecal sludge management disproportionately affects the urban poor, who face income constraints and tend to live in densely populated areas which are hard to access with large vacuum cesspool tankers.

To mitigate these issues, Water for People (WFP) has worked with local authorities in Kampala (Uganda) and Blantyre (Malawi) since 2010 to develop sustainable, regulated local ecosystems of affordable and hygienic pit emptying services. Over time, interventions included: development and commercialization of a specialized manual desludging pump (the “Gulper”), introduction of licenses and standards, improvements in sludge treatment infrastructure, creation and capacity building of pit emptiers’ associations, set-up of call centers for customer service, provision of subsidies for pit emptiers (e.g. free equipment) or customers (e.g. vouchers), among others. As a result of these efforts, both cities are now served by a network of private, formal pit emptying businesses, though they vary in size, customer base, and financial performance.

To take stock of the work done so far and inform future efforts, WFP collaborated with [LeFil Consulting](#) to assess the state of the pit emptying market in these two cities by conducting extensive primary data collection through surveys with pit emptiers and end customers, as well as on-site visits and in-depth interviews with selected pit emptiers and other ecosystem players. These research efforts generated unprecedentedly rich demographic, financial and behavioral data about this sector.

Key findings on the state of the pit emptying market

A dynamic formal market for pit emptying services has emerged across both cities. There are three main emerging business models adopted by pit emptying businesses:

- Businesses focused on small jobs (3-6 barrels of 160-180L per day, typically using tricycles), with low per-job profitability but also leaner operations. This model is the entry point for entrepreneurs with little start-up resources. These businesses serve the lowest income segments and are most susceptible to any pressures on pricing or increase in costs
- Businesses focused on larger jobs (10+ barrels per day, typically using a pick-up truck and/or possibly a cesspool truck), with higher per-job profitability given fixed costs are spread over a larger volume of barrels. This model is often an evolution of the first one, after the entrepreneurs manage to invest into a larger vehicle and expand their capacity
- Businesses focused on “organized emptying”, which includes recurring institutional jobs (e.g. schools) as well as “emptying campaigns” which serve peripheral communities outside of the city for limited windows of time. This model is seen with well-established businesses, due to the level of complexity and capacity required.

No model prevails, but one notices various degrees of performance across all three, suggesting that they cater to different market needs and segments, with varying quality of execution.



Photo credit: Water For People

A majority of the pit emptying businesses included in this study are profitable, although revenue and margins tend to be low. Across all three models, entrepreneurs seem to have found reasonable strategies to keep costs down, such as variable/ flexible salary payments for operators, leveraging emptying staff as drivers, aggregating orders in an area to optimize fuel usage, etc. On the revenue side, the key profitability driver is the job size (i.e. number of sludge barrels per trip, subject to vehicle's capacity). Strategies adopted to maximize this include: allowing operators to become “freelance promoters” to fill in the truck/ tricycle “on the spot”, hiring a marketing person (whose job is to line up more barrels before or during jobs), or giving commissions to local “agents” who live in the communities and who garner clients.

However, organizing or rationalizing demand is very challenging, given that pit emptying is not something that households (particularly low-income ones) plan for or do regularly; rather, they tend to postpone until absolutely necessary, then empty as much as they can afford to pay for (which might be only part of the pit's volume). The frequency at which emptying is required therefore varies a lot (also depending on pit size), making it very difficult to predict overall demand over time in a given area. Indeed, most businesses have rather irregular levels of activity (as also corroborated by high day-to-day variability in volume delivered at the dumping bay). This irregularity, coupled with seasonality (lower business in the dry season), drives financial instability and vulnerability.

Probably as a result, many pit emptying businesses also carry out other activities. These additional activities can be related to sanitation (e.g., building toilets, selling sanitation hardware), but also any business that uses a truck, driver, etc. While from a financial perspective this does not seem to make much sense (as these activities add comparatively little additional revenue, have poor profitability, and drive higher complexity), it is probably done out of necessity, to smoothen out revenue and offer alternative work opportunities for key staff, plus increase the utilization of the vehicles.

Serving institutional customers is another key strategy to achieve more financial security, given these contracts ensure a certain regular level of revenue during the year and better profit margins (due to higher volume and better use of vehicle capacity). This allows businesses to improve their growth prospects and invest more confidently in vehicles and staff for more professional operations. However, most entrepreneurs, particularly the smaller ones (who struggle the most to stay afloat), report difficulties in bidding for institutional contracts, as this requires a lot of paperwork and investment into licenses, etc.

Key findings on how to support and strengthen the pit emptying ecosystem



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Capacity-building support

While there are clearly more or less successful sanitation entrepreneurs, there is no ideal profile (e.g. in terms of demographics, background, motivation, etc.) associated with success. As a result, it is very difficult to identify from the onset which entrepreneurs are worth investing into. Additionally, it takes time for any new entrepreneur to figure out the market and build a customer base. Therefore, rather than investing directly to launch new businesses and provide early-stage support, it might be more effective for local governments and donors to “let many flowers bloom” and see which businesses become more dynamic over time, and invest only then to support their further growth. Another complementary option is to encourage the more solid existing businesses to open “franchises” in other areas, coaching and supporting new entrepreneurs for a period of time, thereby reducing the initial learning curve and facilitating replication of successful models.

Technological innovation

The introduction of the Gulper has lowered market entry costs for smaller players and allowed to transition away from unsanitary practices (such as manual emptying using rope and bucket). However, despite multiple iterations and improvements, the Gulper can only be used in specific situations (lined pits which cesspool trucks cannot access, and where the sludge is liquid enough without adding much water). Coupled with the pressure of maximizing the space on the vehicles (especially for tricycles) and the difficulty of training the ever-churning operators for proper use, this leads to a relatively low adoption of this equipment.

Subsidies

Direct subsidies such as customer vouchers or free equipment can kick-start the market and help new businesses launch and build a customer base. However, they tend to introduce adverse distortions over time.

For example, the voucher program in Kampala had a price point that was below market prices; while this was meant to drive affordability for low-income segments, it “forced” pit emptiers to operate at cost or at a loss, i.e. unsustainably. A similar program in Blantyre allowed pit emptiers to reach more customers, but this did not translate to repeat jobs after the one-off subsidy was over. On the other hand, free or subsidized equipment (particularly vehicles) can lead to over-capacity in the market (in Kampala there are signs of this, such as businesses taking jobs at a loss or increasingly going out of town to look for business). In general, local authorities and donors should be very cautious with measures that introduce distortions in a market that already struggles to find an equilibrium, as they might end up driving a number of entrepreneurs (particularly the smaller ones catering to small jobs and low-income segments) out of business or toward informality (e.g. non-renewal of licenses, illegal dumping).

Service coordination

One idea that is being considered by local authorities revolves around organizing and coordinating geographically-clustered, scheduled pit emptying services, with a focus on underserved areas. While this idea appears to have some advantages (e.g. demand aggregation, more rational route management), in practice it might not work due to the unpredictable nature of the demand for pit emptying services, as well as the limited ability to pay of low-income households.

Regulatory and policy-setting

Rather than direct handouts or measures that attempt to fix pricing, the most useful and effective interventions are likely those related to leveling the playing field and improving the rules of the game for all players, while letting market forces determine prices and the number of players. Establishing and strengthening pit emptiers’ associations has been useful in this regard across both Kampala and Blantyre: by setting joint rules for all members, they facilitate adoption of better safety and hygiene standards and prevent some providers from undercutting others by operating at different standard levels. Additionally, they constitute a forum to jointly identify and address market needs and challenges. After providing some initial capacity building, local authorities and donors should let such associations be self-managed by members, while they should mostly focus on the systemic and infrastructure issues (e.g., regulation, enforcement, dumping infrastructure construction, etc.). A specific area of opportunity is facilitating access to institutional customers for pit emptiers, particularly smaller ones that serve the low-end of the market and would most benefit from the financial security of larger contracts.



Photo credit: Water For People

Conclusion

All in all, the efforts to formalize and grow sanitation services in Kampala and Blantyre have been a success. This study has shown that there is no single recipe for a successful pit emptying business, but entrepreneurs will find a number of strategies to serve the market effectively, while the most crucial and helpful role that local authorities and donors can play is to ensure a level playing field.

For much more detailed descriptions of the pit emptying market in Kampala and Blantyre, and the sanitation businesses that serve them, please read the full report [here](#).