

Subsidized pit latrine emptying through performance-based contracts with private operators piloted by Lusaka Waste Supply and Sanitation Company (LWSC), Zambia

Experts Dialogue on Challenges in Designing and Implementing City-Wide Inclusive Sanitation (CWIS) Projects
(Session 2)

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Background: Sub-Saharan Africa

- ❑ 84% of the urban population rely on onsite sanitation, including pit latrines and septic tanks.
- ❑ 50 – 70% of urban population lives in informal settlements (slums), where pit latrines are predominant.
- ❑ Septic tanks for the affluent, pit latrines for the poor:

Urban affluent (planned areas)

- Septic tanks, sometimes sewer connections,
- Plot access by road, reachable by vacuum tankers,
- Able to pay market prices for emptying.

Urban poor (informal settlements incl. slums)

- Pit latrines, often unlined and prone to collapse, **not suitable for mechanical emptying**,
- Dense, unplanned settlements with narrow lanes, often **inaccessible by vacuum tankers**,
- **Limited ability to pay**; pits abandoned or emptied unsafely.

- ❑ Emptying pit latrines in slums is labor-intensive (high cost) and residents can pay little, therefore:
 - Formal operators served mainly septic tanks,
 - Residents rely on informal manual emptying.

Background: Lusaka, Zambia

- ❑ 70% of Lusaka's 2.7 million people live in unplanned peri-urban areas.
- ❑ 64% of the population rely on pit latrines, mostly unlined/ 17% of the population on septic tanks.
- ❑ USD109 – 180: market price to empty a 6 m³ pit: unaffordable, so pits are abandoned or emptied unsafely.
- ❑ Formal vacuum truck operators mostly only serve septic tanks in the formal area of the city.
- ❑ Manual emptying for pit latrines: labor-intensive and more costly than mechanized emptying.

Mechanized emptying: USD75/ 6m³

Source: World Bank (2021)



Example of a vacuum tanker operator in Lusaka

Manual emptying of pit latrines:

Informal service: USD109-150/ 6m³

Formal service: USD 180/ 6m³ Source: World Bank (2021)



- ❑ **Consequence:** 83% of Lusaka's faecal sludge and wastewater was not safely treated.

Overview of the LWSC Scheme

- ❑ **Period:** February 2020 to August 2022, to be extended until February 2025 by using sanitation surcharge
- ❑ **Funder:** World Bank under the Lusaka Sanitation Program
- ❑ **Subsidy amount:** 60%-70% of the full cost of emptying a pit depending on the service provider's bid price
- ❑ **Objective:** Make safe pit emptying **affordable for the poor** while building a **market for formal private emptying service**

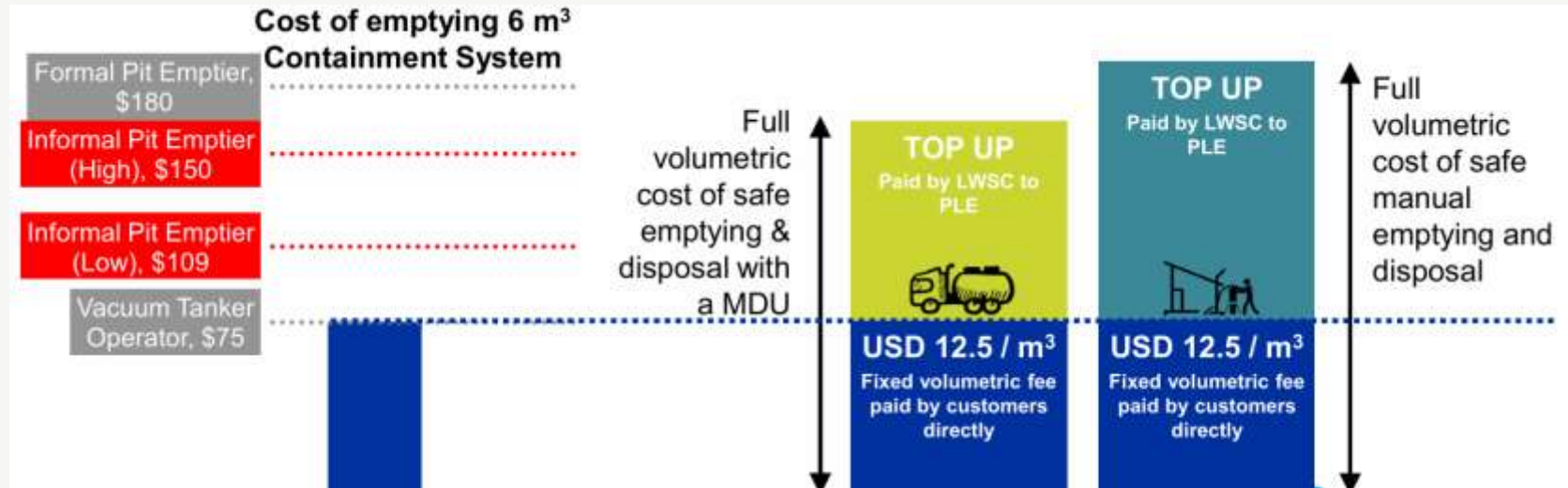
1 Affordability
Fix the household price per m³ below the informal market price to raise demand for regular emptying.

2 Market for Formal emptying service
Undercut informal manual emptiers and shift demand to registered, licensed formal operators.

3 Safe transport and disposal
Pay the subsidy (“top-up”) only when sludge is delivered to an LWSC treatment plant.

Affordability and Formalization

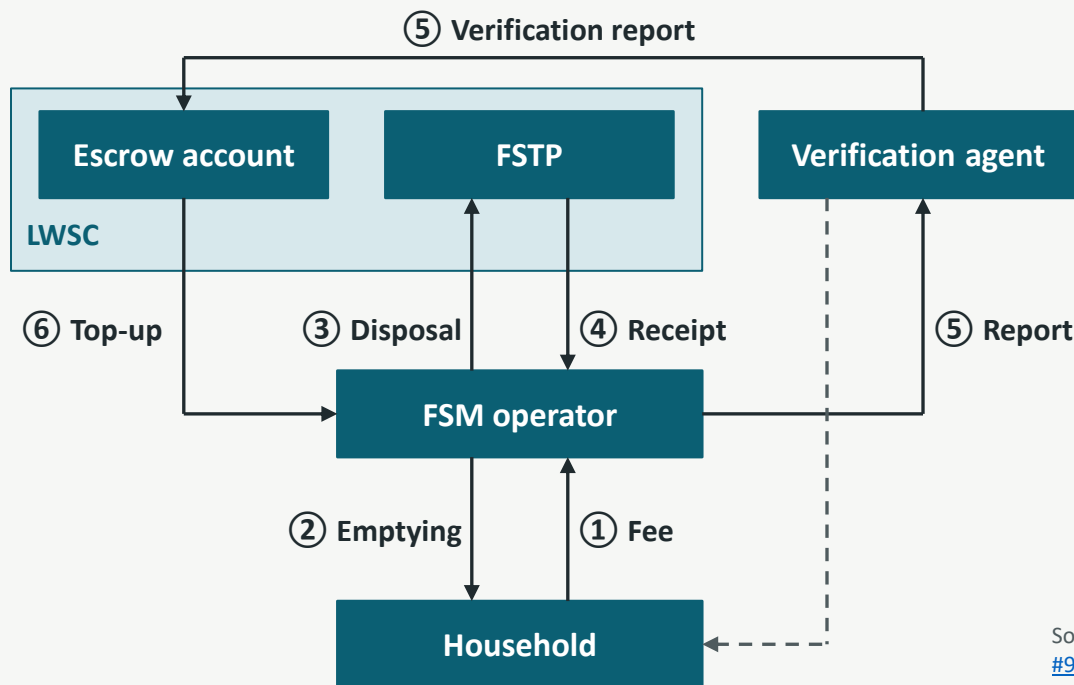
- ❑ Households pay a fixed fee per m^3 ; LWSC tops up the operator's bid price for safe emptying and disposal.
- ❑ By fixing price of formal emptying service below cost, informal pit emptying market is undercut.



Source: World Bank (2021), *Lessons Learned Onsite Sanitation and Fecal Sludge Management from the Lusaka Sanitation Project: moving the service provision agenda at scale for low-income communities in Zambia*

Performance based contract

- ❑ LWSC divided the city into three zones with four operators contracted in each zone by open bidding:
 - Two “technology neutral” operators regardless of their degree of mechanization,
 - Two formal manual pit emptiers.
- ❑ Service provision and payment:



- ① Household requests service and pays the fixed fee
- ② Operator empties the pit
- ③ Operator delivers sludge to the LWSC FSTP
- ④ FSTP issues a disposal receipt
- ⑤ Operator reports; agent verifies receipts and payments, then reports to LWSC
- ⑥ LWSC pays the top-up monthly from an escrow account

Results

14,661

pit latrines emptied, Feb
2020 – Aug 2022 (target
12,800)

46,483 m³

faecal sludge delivered for
treatment

USD 494,700

total transitional subsidy, ≈
USD 34 per pit or ≈ USD 10.6
per m³ (calculated)

2 days

average response time

56% → 64%

households hiring formal
emptiers (baseline →
endline)

264,000

people with improved faecal
sludge management
services (project total)

Source: [World Bank ICR \(2024\)](#); [CWIS Learning Brief #9 \(2024\)](#); LWSC & World Bank (FSM6, 2021); [World Bank \(2025\)](#)

Challenges

Pit latrine emptying

- ❑ Thick pit sludge forced even vacuum truck to empty manually; LWSC supplied tools and PPE for manual emptying.
- ❑ Operators underestimated costs of pit emptying, and bid too low.
- ❑ Some operators prioritized septic tank clients who paid market prices over pit latrine emptying

Administrative issues

- ❑ Documentation burden: Operators struggled to compile evidence for payment; LWSC provided training.
- ❑ Payment delays: Bureaucratic processing hurt operators' cash flow and will to continue in the scheme.

Lessons learned

- ❑ Pit latrine emptying requires careful consideration on applicable technologies and realistic cost estimates in the local context.
- ❑ Financial incentives must align with service objectives: When subsidized pit emptying was less profitable than market-based septic tank services, some operators prioritized higher-paying clients. Tariff structures and contract arrangements should ensure operators' commitment.
- ❑ Capacity building of operators is essential for implementation of a new scheme.
- ❑ Timely payments by the utility are critical for private sector participation in a new scheme.