Manual Pit Emptiers
Freetown, Sierra Leone

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Structure of presentation

1. Context – Freetown
2. Context – Manual and Mechanical emptiers
3. Pilots and results
4. Lessons learnt
5. Next steps and refined approach
### The Context

**Freetown**

- 1.2 million inhabitants
- 90% are served by on-site sanitation
- High levels of solid waste in pits
- Steep topography and narrow roads cause poor accessibility for trucks
90% of population require FSM services

At least 100,000 m$^3$ of raw faecal sludge is produced each year

The rest (90%) is dumped illegally in and around Freetown

THE CONTEXT

Freetown
Manual Pit Emptiers (MPEs)

- Serve about 36% of Freetown
- Work informally
- Dump FS locally, illegally
- Poor regulation
- Dangerous work environment, stigmatisation and substance abuse
- Limited skills/education or interest to improve, expand or legitimise their business
Mechanical Emptiers (SMEs)

- Most are unregistered & unregulated
- 63% of population report using vacuum trucks
- 8 vacuum trucks operational
- Estimated to cover only 15-20% of market
- Poor access to financing for investment
- Potential annual revenue $4m
Initial Pilots

1. Improve working conditions and efficiency and reduce illegal dumping: 2012-2015


Pilot 1 - Improve working conditions, efficiency, reduce illegal dumping (2012-2015)

Description:
• Support of 5 – 10 MPE groups
• Trainings, capacity building
• Provision of protective gear
• Provision of specialist equipment: barrels and tricycle for transport to disposal site

Progress / Result:
• Trainings had little effect - practices didn’t change
• Protective gear was not much used, disappeared
• Transport equipment was not used at all

DIAPHRAGM PUMP

Description:
• Reproduced locally in Freetown
• Tested from 2012 to 2015 in various settings

Progress / Result:
• Not suitable for thick sludge (pit latrines) or solid waste content
• More time-consuming than (unhygienic) bucket method
• Not useful for MPE groups to be used regularly

Diaphragm pump in use
Pilot 2 – Testing of improved manual emptying equipment (2016)

GULPER2 & SLUDGE DIGGER

Description:
• Selected after detailed desk review (early 2016), reproduced locally
• Field testing finished in Dec 2016

Progress / Result:
• Suitability of equipment depends on conditions (sludge type, solid content, depth of pit)
• Both types of equipment can improve working conditions of MPEs
• Plan to make both equipment available to MPEs (through Freetown City Council)
Pilot 3 – Provision of transfer stations (2012)

Description:
• 3 transfer stations were constructed in 2012
• Different designs and management models

Progress / Result:
Never went operational due to:
• Political resistance
• Lack of legal frameworks
• Lack of community acceptance
• Disagreement about proposed management structures
Lessons learnt

• Need to consider holistic sanitation chain, involving all services and stakeholders
• Closely involve MPEs in selection (manual equipment)
• Institutional support and adequate legal frameworks are essential to allow MPEs (and SMEs) to operate effectively
• Public engagement and involving local and political leaders is paramount for success
• **MPE groups are not sufficiently able/interested to formalize, improve and expand their business. There is currently no viable business model.**
Next Steps

- **Tailor support to MPEs** in the short term to improve working conditions while being aware that this is not sustainable.

- Shift focus from MPEs to **business support for SMEs** (vacuum trucks) where there is a business model and demand for FSM (73% of Freetown households are accessible to trucks!)

- Work with one SME to operate (at least 1) **transfer station**

- **Link MPEs to SMEs** to integrate their services (manual labour) into SME businesses with a focus on inaccessible pits.

- Work with Freetown City Council to **develop enabling environment** (governance, regulation, monitoring, business friendly)

- Communication/Marketing strategy aimed at **generating demand** amongst target ‘customers’ – middle/upper class and raising awareness of services amongst broader Freetown residents.
Refined (systemic) approach

Fund Social Marketing Campaign to increase knowledge, stimulate demand and support reporting of illegal dumping

Link government with private operators (regulation) and the public (call centre, information). Assess the legal dumping site for investment

Access to BDS* (for SMEs) to increase business and marketing of services

BDS: Business Development Services