Mobile Faecal Sludge Stations in Urban FSM

A case of two pilots in Kampala City

Yvonne Lugali
Brenda Achiro, Cate. Z. Nimanya
Water For People

water for people

KCCA
KAMPALA CAPITAL CITY AUTHORITY
For a better City

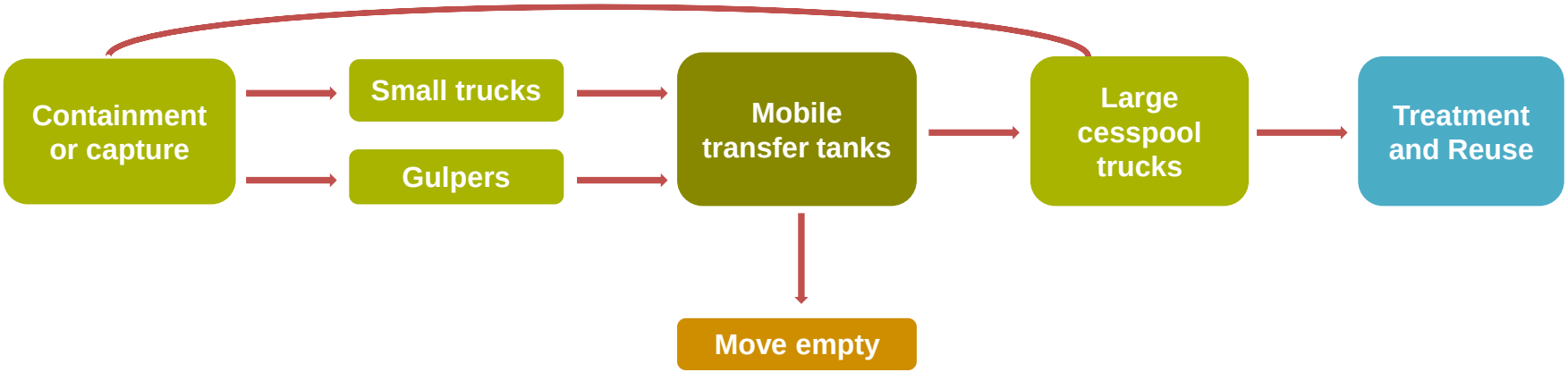
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

AfricaSan5 FSM5

Background

- Water For People is partnering with GIZ since 2013
- Project Objective: Increase access to sanitation services
- Major challenge was the high cost of gulping, *semi-mechanised pit emptying*
- Idea 1: Small Fixed Transfer Tank System - failed due to land challenges in Kampala
- Idea 2: Mobile Sludge Transfer Stations

Transfer Station in FSM



Approach/ Methodology

- Feasibility study
- Design process
- Fabrication process
- Pilot testing
- Continuous modifications

Feasibility Study

- Environmental and Social Impact Assessment (ESIA) carried out on mobile transfer tank concept
- Remedies from ESIA incorporated into design and operation guidelines
- Technical Applicability Framework conducted to ascertain technical and economic viability in informal settlements

Design Process

- Two 5m3 grounded cesspool emptier tanks were modified
- Design drafted using AutoCAD
- Design to accommodate semi-mechanical gulper operators
- Loading and offloading systems manual operation

Fabrication Process

Hydraulic Systems

Manual Loading Trough

Tank Mounted and Fixed

Chasis: Walking Beam axle; tire size 12.5/80; design strength of 10 tonnes

WETAASE!

Pilot Testing Phase

- Hauled by tractor to target areas
- Gulpers empty into Transfer Tank and hauled to treatment plant
- Prior sensitization in communities
- Operational costs of emptying per 200L barrel reduce significantly - USD 7.5 to USD 5
- Currently in operation and business model focused on having TT managed by Gulpers Association

Pilot Testing Phase

Current Business Model

- Gulper operator sources out clients who need toilets emptied
- Requests for Transfer Tank from Water For people
- Gulper covers operational costs of tractor fuel, driver labor, dumping charges and any other fines in case of spillage
- New access to operator and equipment handwashing water

Continuous Modification

- Operational challenges realized in pilot phase
- Conversion of the sludge loading system from a manual winch to an automatic 1tonne 24V DC powered winch system
- Water storage tanks, rubber stoppers and sludge guides fixed- sludge spillage and access to operator and equipment handwashing water

Challenges

- Unwillingness by gulpers to lower the pit emptying charges
- Only two tanks are available – inadequate for the many informal settlements
- High initial capital investment and tractor repair and maintenance costs

Way Forward

- Further field tests and adjustments in the operation
- Increase the number of mobile sludge tanks
- New Business Model: Transfer Tank managed by Gulper Association who will earn revenue from its use

Thank you for your attention