



Faecal Sludge Management in Freetown, Sierra Leone

Urban Sanitation



Containment



Emptying



Transportation



Treatment



Reuse / disposal





Problem statement: FSM situation in Freetown

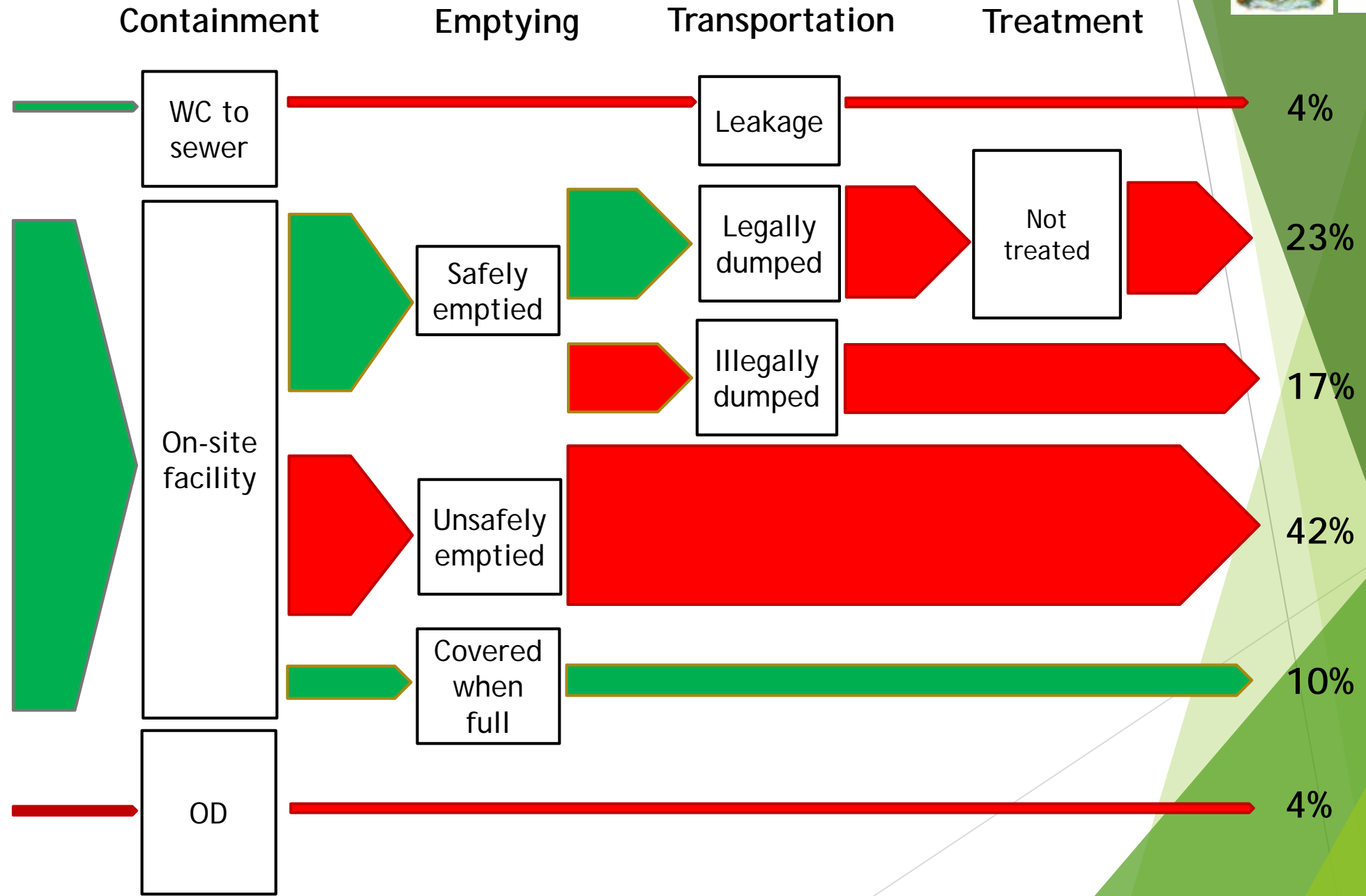
- ▶ 90% of population is served by on-site sanitation
- ▶ Challenges to pit emptying due to city's topography and unequal development: difficult to access pits in densely populated areas
- ▶ Pit emptying services are currently provided by unregulated informal service providers
- ▶ FCC has insufficient capacity in terms of skills and frameworks
- ▶ Reluctance to accept FSM facilities and services
- ▶ Non-existent effective treatment of faecal sludge



Research

- ▶ Compost market assessment: http://www.washlearningsl.org/wp-content/uploads/2015/04/Compost-Market-Survey_Freetown-2013.pdf
- ▶ Demand assessment for sanitation service: <https://www.dropbox.com/s/8aim5q35nlo0pq5/GM%20-%20Vol%20I%20-%20Demand%20Assessment%20for%20Sanitary%20Facilities%20in%20Freetown%20Final.pdf?dl=0>
- ▶ Assessment of faecal sludge emptying services: <https://www.dropbox.com/s/vjnprnjzr7ygd22/GM%20-%20Vol%20II%20-%20Assessment%20of%20Faecal%20Sludge%20Emptying%20Services%20-%20Freetown%20-%20R1.pdf?dl=0Sanitation>
- ▶ Research pilot report: http://www.washlearningsl.org/wp-content/uploads/2015/03/Briefing-paper_Faecal-sludge-management-enterprises_April-2014.pdf

Freetown's shitflow diagram





GOAL's work

- ▶ Local production of diaphragm pump for pit emptying
- ▶ Building of transfer stations - permanent and temporary
- ▶ Trialling of co-composting of faecal sludge
- ▶ Linking with MPE and building their capacity
- ▶ Creating awareness of challenges related to urban sanitation

Current projects

- ▶ Two year project that aims to reduce the amount of faecal sludge disposed illegally around Freetown



Local production of diaphragm pump for pit emptying

- ▶ Pump purchased internationally
- ▶ Local manufacturer and testing of prototype
- ▶ Equipping of MPE - 8 teams
- ▶ Training on O&M, business development, hygiene, customer care, marketing





Transfer stations – permanent and temporary

- ▶ Mabella/Marshall St: Modified shipping container on top of 10,000 tanks.
- ▶ Ferry: Permanent underground 10,000 tank
- ▶ Lowcost: Movable slurry tank
- ▶ None operational





Co-composting of faecal sludge

- ▶ Research:
https://www.dropbox.com/s/p6qzycz07j6ps84/2013%20Compost%20Market%20Survey_Main%20report.pdf?dl=0
- ▶ Produced compost using:
 - ▶ Spent grains
 - ▶ Palm kernels
 - ▶ Saw dust
- ▶ Testing for efficacy with Freetown based landscapers
- ▶ Testing for safety with Ramsey and lab in Nairobi
- ▶ Requires further tests with SLARI





Key lessons

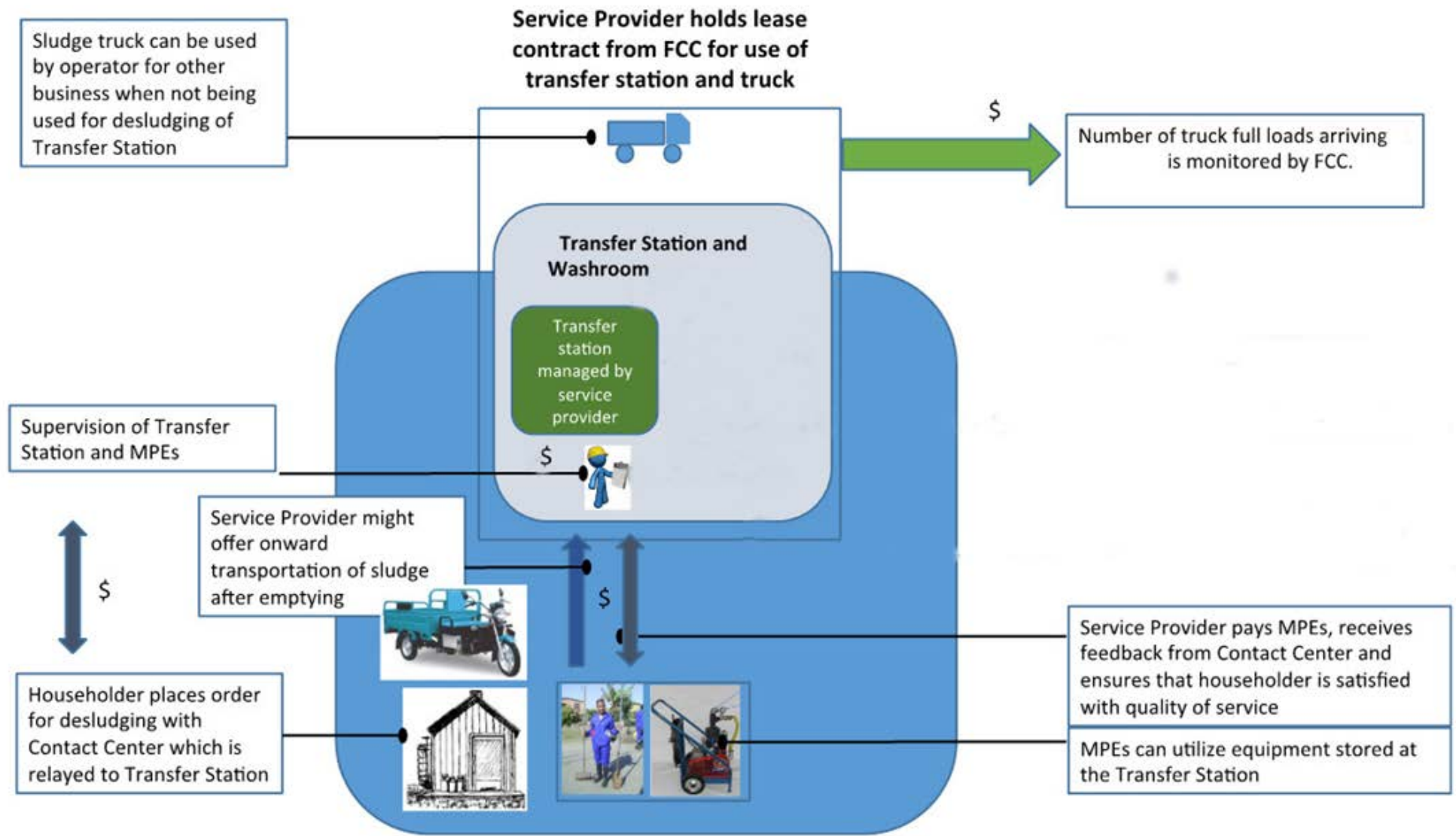
- ▶ Huge public health impacts but they are “Hidden”
 - ▶ Diarrhoea
 - ▶ Environmental enteropathy
 - ▶ Intestinal worms
 - ▶ Anaemia
 - ▶ Very complex issue, requires multiple stakeholders i.e. FCC, GVWC, MPE, Masada, Tanker operators, customers, MoHS, etc.
 - ▶ Skills required to tackle issue not readily available
 - ▶ Politically very sensitive
 - ▶ Large potential for private sector growth
 - ▶ Role of NGO?
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- ▶ **Global Issue!!**

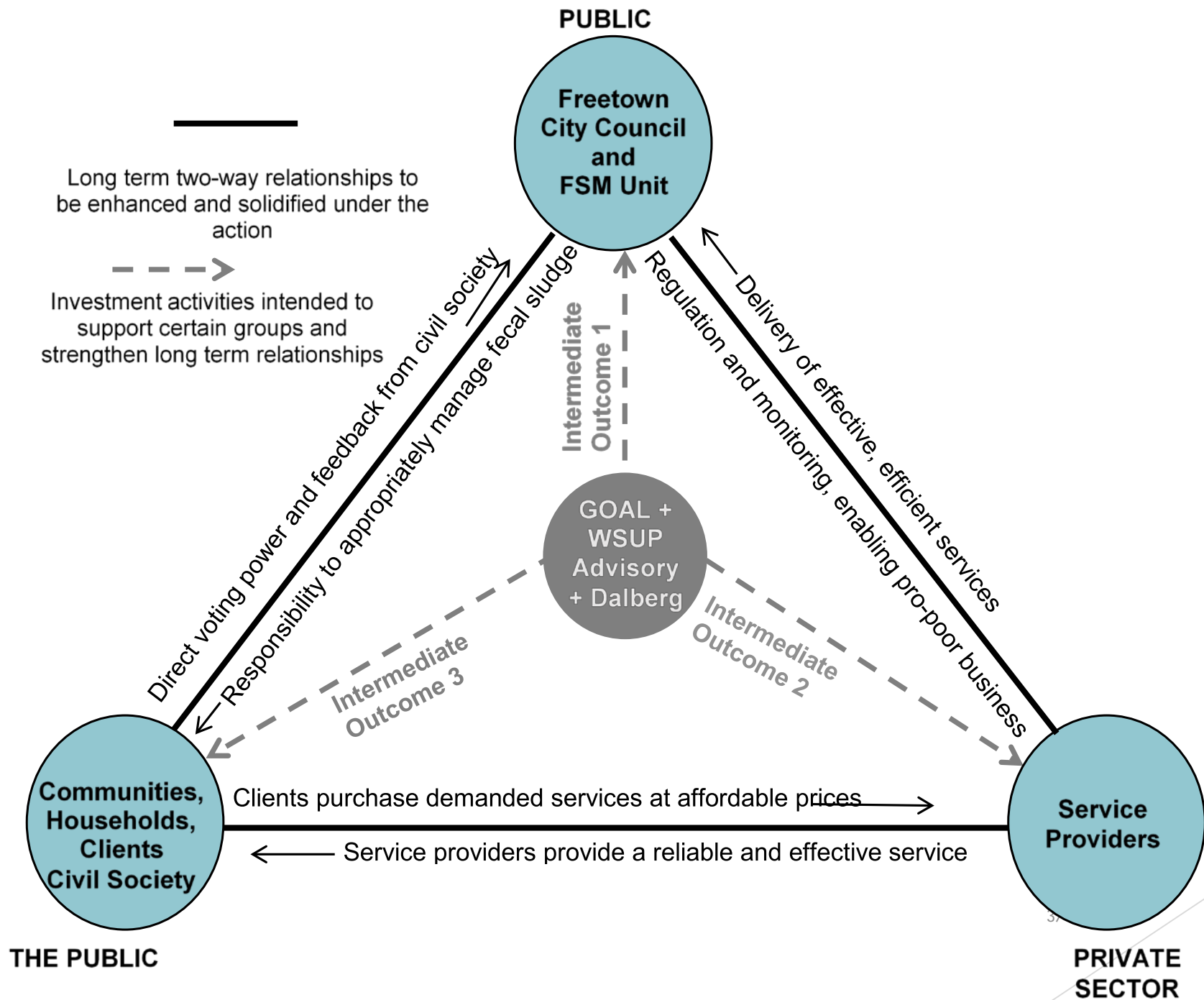


Current project

- ▶ Concentrating on emptying and transportation, objectives:
 1. Strengthened Regulatory Environment and Improved Public Infrastructure for FSM
 2. Strengthened Private Sector Entities in collection and transport of FS
 3. Increased community awareness, acceptance and use of appropriate FSM
- ▶ Centred and led by Freetown City Council
- ▶ Partners with expertise in private sector development and FSM in urban areas
- WSUP Advisory & Dalberg Development Consultants
- ▶ Role of NGO (GOAL) is facilitating and creating awareness at household level

Example Management Model





BMGF-DfID City Partnerships for Urban Sanitation Services - Phase 2





Factsheets for additional information

- ▶ Composting:
<https://www.dropbox.com/s/jfl3vltukkod9pp/Factsheet%20compost%20site.pub?dl=0>
- ▶ Transfer station:
<https://www.dropbox.com/s/3dxwa7lsmya9ddt/Factsheet%20transfer%20station.pub?dl=0>
- ▶ Diaphragm pump:
<https://www.dropbox.com/s/4zg48r8zni7dfil/Factsheet%20pumps.pub?dl=0>