

FSM BY PRIVATE ENTREPRENEURS FOR SUSTAINABLE BUSINESS MODEL

-A case study

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INTRODUCTION

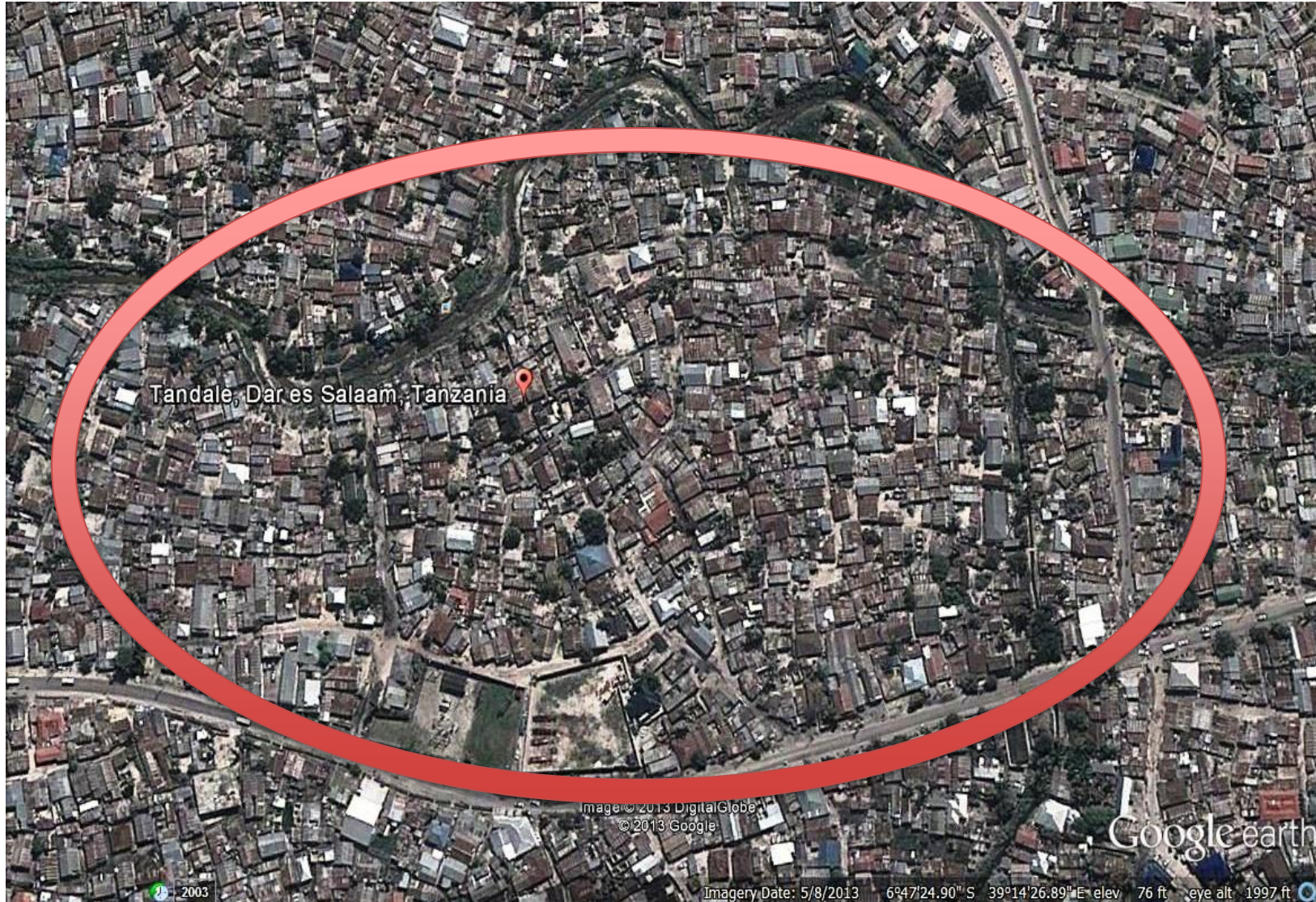


Facts

- ❑ 97% of the unplanned & densely populated sub-wards use onsite sanitation technologies (Jenkins M.W, et al2014)
- ❑ In such situations, sanitation facilities are likely to be emptied (Thye et al.2011)

INTRODUCTION Cont...

In this situation the questions to ask our self are:-



- Who should do emptying services as a 'business'?
- What devices/tools should be use?.
- How to get access to these sanitation facilities ?.
- How to transport emptied sludge to treatment plant ?



OBJECTIVES



- Identification of barriers that hinder service provider to grow into FSM business.
- Ways of maximizing profit by overcoming barriers related to FSM Business.
- Identification of key areas to be considered in FSM business.

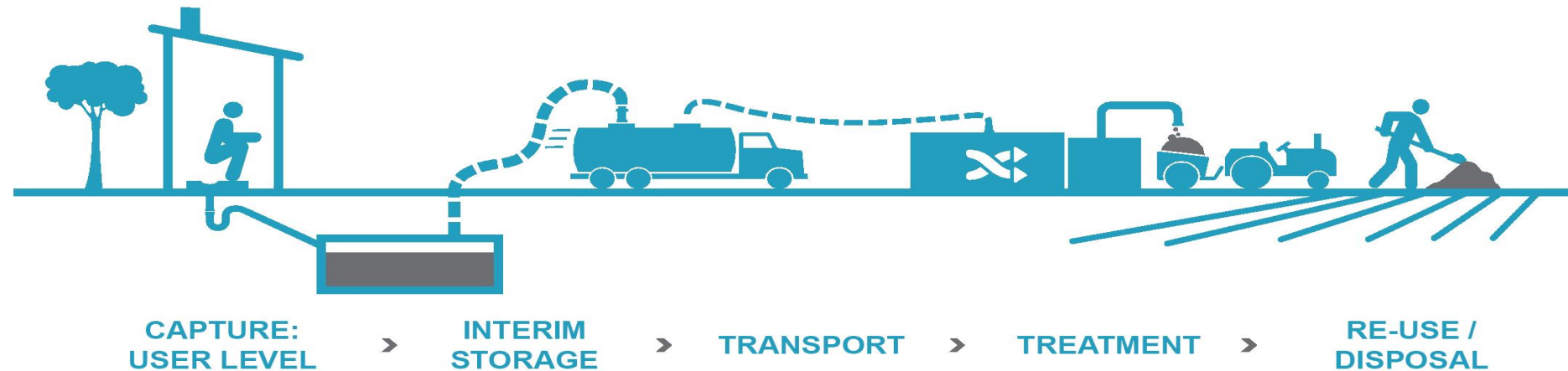
“UMAWA” as Service Provider
for FSM



RESEARCH APPROACH USED

- ❑ Working with Service provider 'UMAWA'
 - Questioners for service provider and
 - Community who are getting emptying services.
- Field testing of manufactured pit emptying devices.

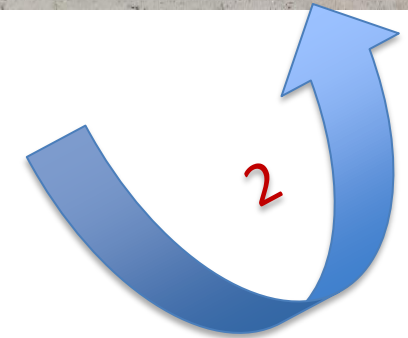
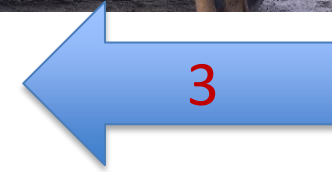
Sanitation Value Chain



INITIAL BUSINESS ENTERVATION

1. Transfer station-2010

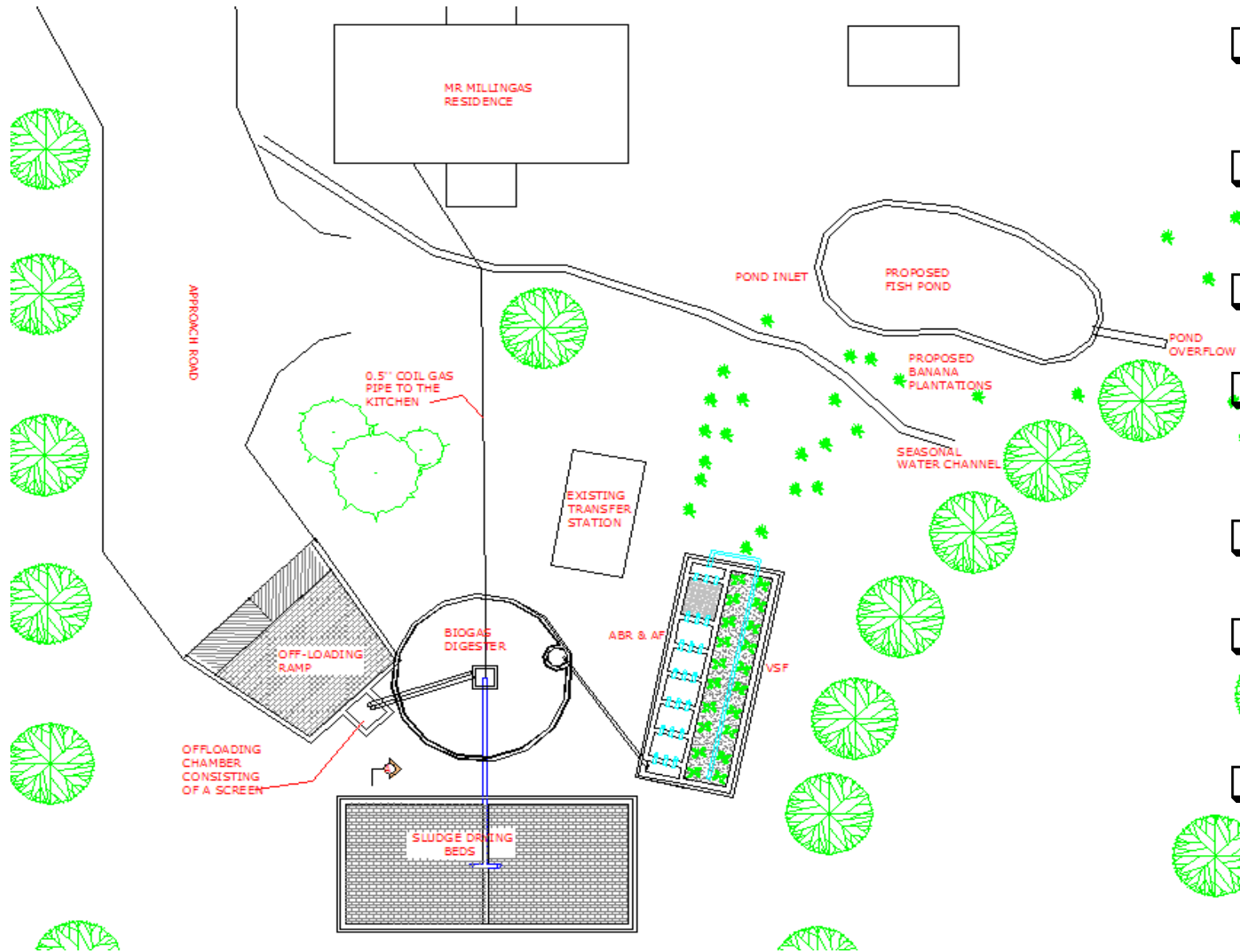
- ❑ 2,000 HH's was Served
- ❑ Profit was generated in low amount
- ❑ 5 workers was employed



1. Transfer station Cont.....



2nd Intervention:- Construction of Fecal Sludge Treatment Plant [FSTP]



- Capacity of 4 m³/day
- Area coverage = 500 m²
- Transportation cost are saved
- Biogas for cooking is produced, 2-4 m³/day
- Fish ponds
- Using treated effluent for irrigation
- Sludge for agriculture uses

2nd Intervention



3rd Intervention: Manufacturing of Pit emptying & Collection device

SN	Description	Specification
1	SludgeGo Components	<ol style="list-style-type: none"> 1. Vacuum tanker mounted into trailer 2. Tractor
2	Power by	<ol style="list-style-type: none"> 1. Vacuum pump engine, 9.75kw with 13HP 2. Tractor engine 20HP output,
3	Size	- 3.9m x 1.4m x 2.1m [Approx.]
4	Weight	- 1200 kg including sludge contents
5	Pumping rate	- 160 l/min
6	Tank capacity	- 1m ³
7	Application	<ol style="list-style-type: none"> 1. For all watery, medium and heavy sludge 2. For settlement area with limited access [street roads width 2-3m]
8	Discharge hose	- Flexible pipe Ø 3" x 20m.
9	Operating depth and distance from the pit	- Up to 4 m head and 50-100m distance to the pit
10	Type of fuel	- Diesel
11	People required for operations	- 2 minimum





3rd Intervention

SludgeGo

4th Intervention:- Establishment of BORDA-UMAWA Training center

- ❑ It can accommodate Max. of 30 people
- ❑ Area coverage ~ 84 m²



Achievements of All interventions

- ❑ 20 Workers are employed now
- ❑ Over 8,000HH are getting service
- ❑ Community are happy with the service provided
- ❑ UMAWA has good reputation with local Government
- ❑ UMAWA has access to Loan from Banks



LESSONS LEARNED

- ❑ Professional service providers are one of the key personnel in sanitation chain. So there is a need to be supported to go into this business
- ❑ Proper emptying and collection Multi-devices are required
- ❑ Marketing approach of sanitation business to the Communities
- ❑ Sensitization & law enforcement [Social acceptability]
- ❑ Initial Capital is an issue for new service provider
- ❑ Faecal sludge management business setup is required



WAY FORWARD

- UMAWA to expand business coverage area, and construction of another Faecal sludge treatment plant.
- Further Research on pit emptying devices by considering:-
 - Affordability
 - Easily maintained
 - Emptying and collection efficiency
- Research on by-products from Faecal Sludge Treatment Plant i.e. Sludge, Biogas and effluent.
- Community and Local government awareness via Training centre.
- Develop training centre programs and cost for the trainings together with UMAWA.





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