

# Is there a Business Case for Mechanical Emptying of Pit Latrines?

A closer look at the 'formal' pit latrine emptying market

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# Is there a Business Case for Mechanical Emptying of Pit Latrines?

## 1. The Current Market

- Customers
- Systems in Place
- Service Providers

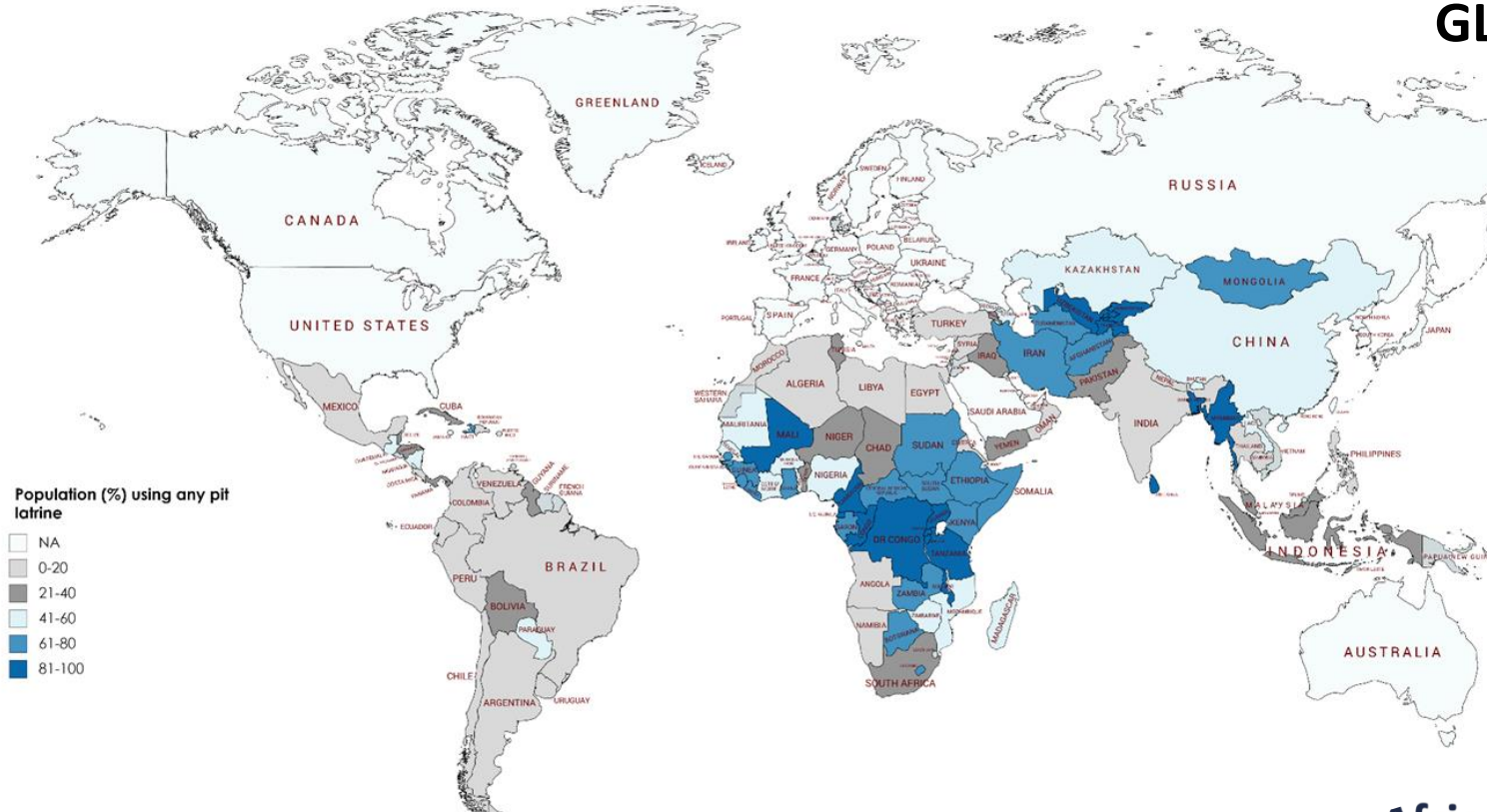
## 2. The Equipment

## 3. Business Case

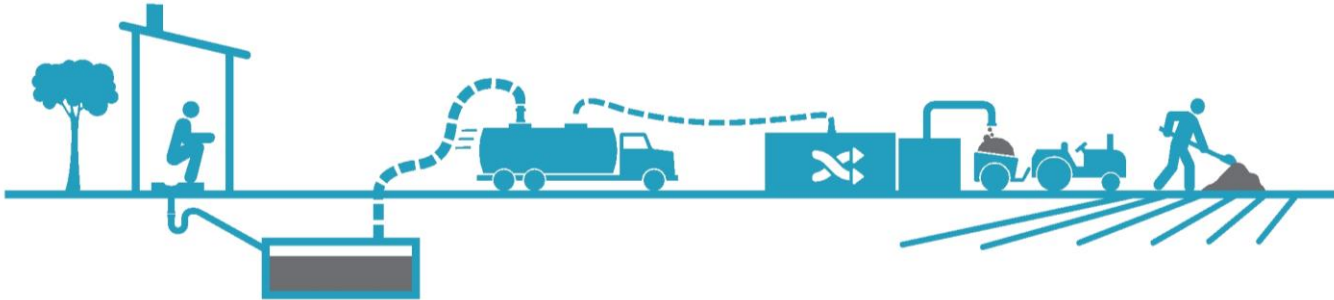
- Service Provider
- The Market Enablers
- Manufacturer

# 1. The Current Market: Customers

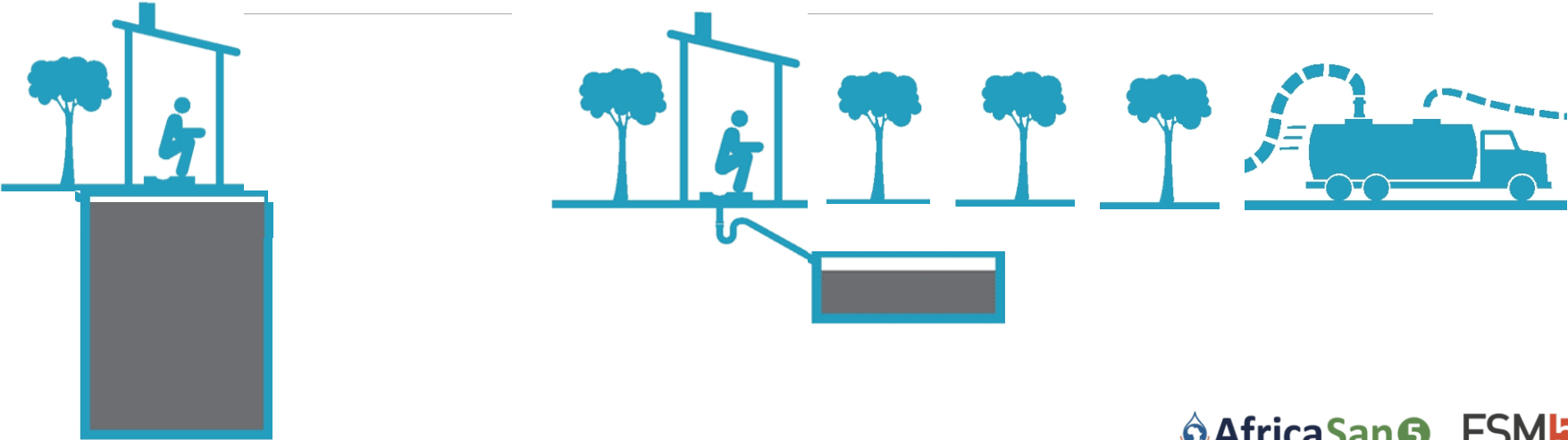
**~300-350 MILLION  
PIT LATRINES  
GLOBALLY**



# 1. The Current Market: Systems in Place



CONTAINMENT > EMPTYING > TRANSPORT > TREATMENT > REUSE/DISPOSAL

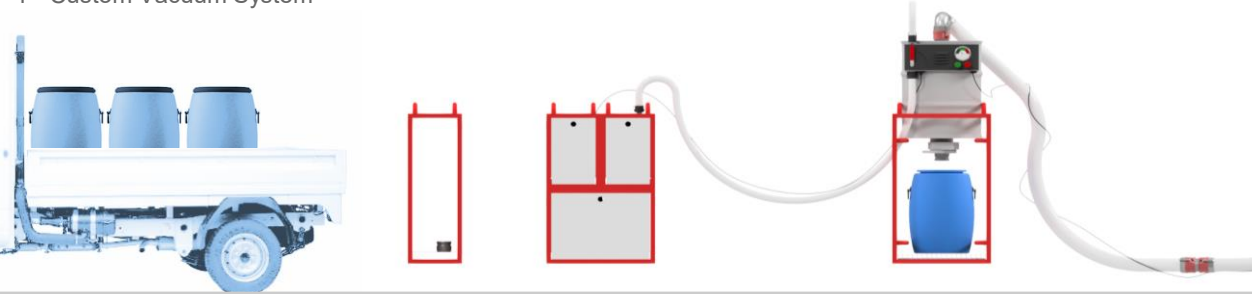


# 1. The Current Market: Service Providers

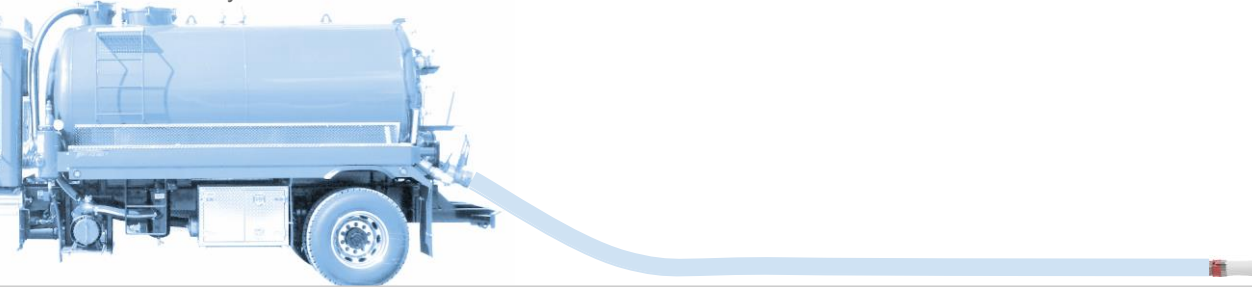
TYPE	Vacuum Truck Operators	Improved Pit Emptyier	Manual Pit Emptiers	
			Trash pump	Jerry can/ Bucket
Equipment	Vacuum Trucks	Gulper/ eVac	Trash pump	Jerry can/ Bucket
Capital Investment	USD 30,000 - 70,000	USD 500-20,000	USD 300	USD 50
Cost per job	USD 70-120	USD 60 - 120	USD 20-50	USD 10-150
Cost per m3	USD 10-40	USD 20	USD 10-40	USD 10-60

## 2. The Equipment: The Excluder

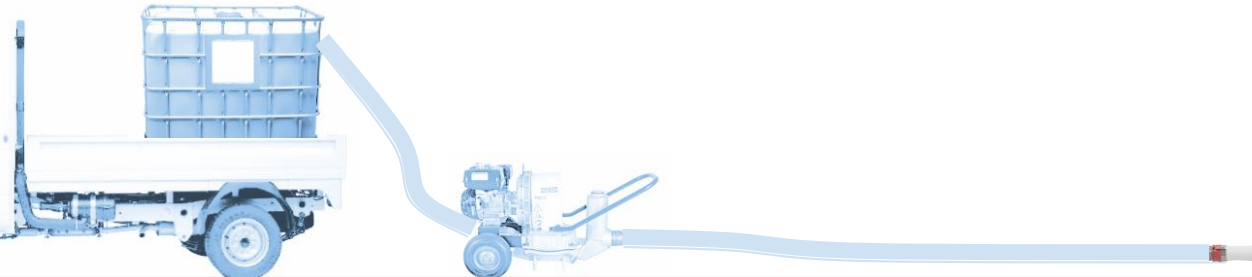
1 - Custom Vacuum System



2 - Vacuum Truck System

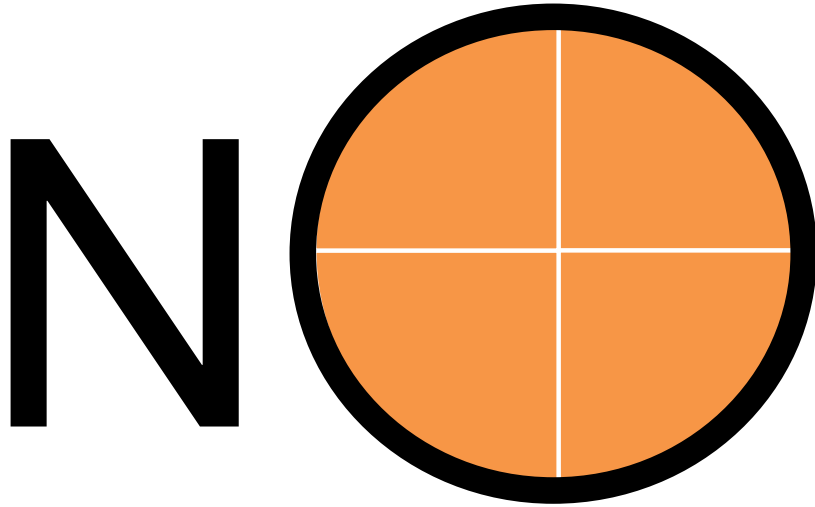


3 - Trash Pump System



## 2. The Equipment: Can it solve poor pit emptying practices?

**NO**

The word 'NO' is written in a large, bold, black sans-serif font. The letter 'O' is replaced by a large orange circle with a thick black border. A white cross is centered within the circle, dividing it into four equal quadrants.

**TECHNOLOGY/INFRASTRUCTURE**

**POLICY/ REGULATION**

**BEHAVIOUR/HABIT**

**CAPACITY OF STAKEHOLDERS**

# 2. The Equipment: Its all about the...

**M**  **N E Y**

**SERVICE PROVIDER**

**MARKET ENABLERS**

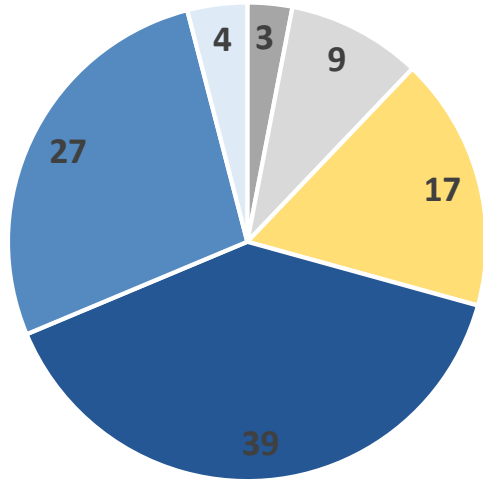
**MANUFACTURER**



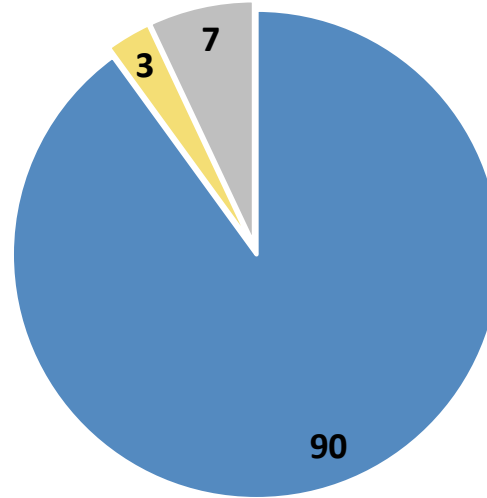
### 3. The Business Case: Service Providers – Who would use it?

## Expenditure per job (%)

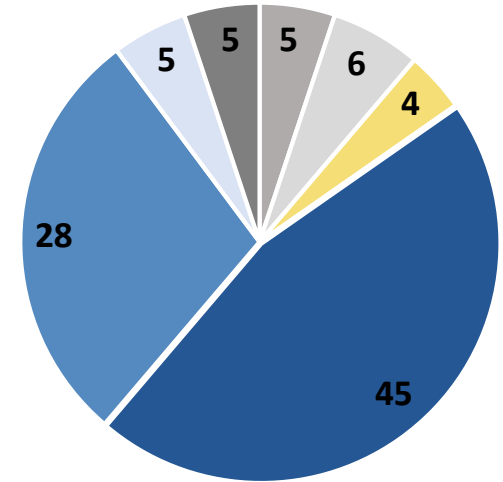
Vacuum Truck Operator ~\$55



Manual Pit Emptier ~\$30



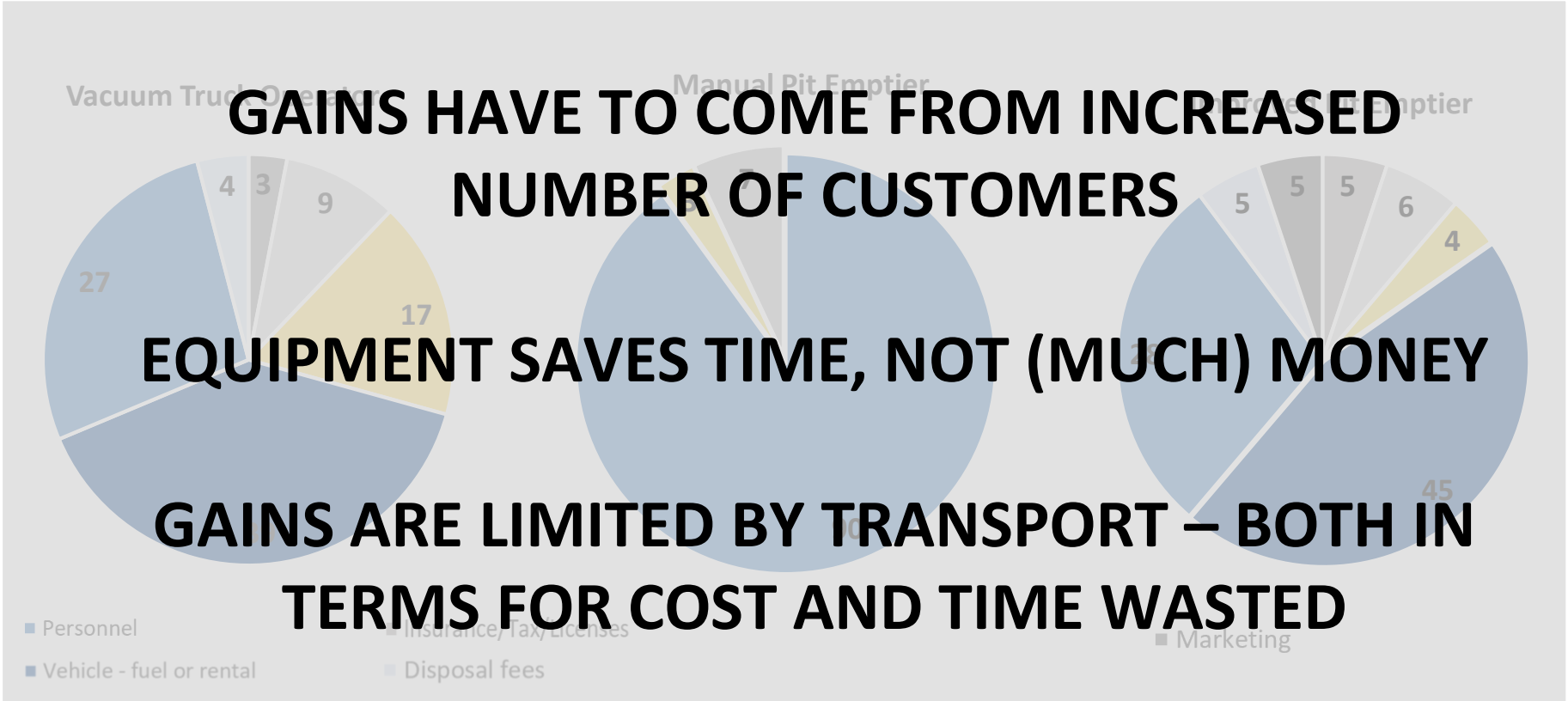
Improved Pit Emptier ~\$70



- Personnel
- Vehicle
- Maintenance
- Rent/Comms/Health and Safety
- Insurance/Tax/Licenses
- Disposal fees

- Marketing

### 3. The Business Case: Service Providers – Who would use it?



**GAINS HAVE TO COME FROM INCREASED NUMBER OF CUSTOMERS**

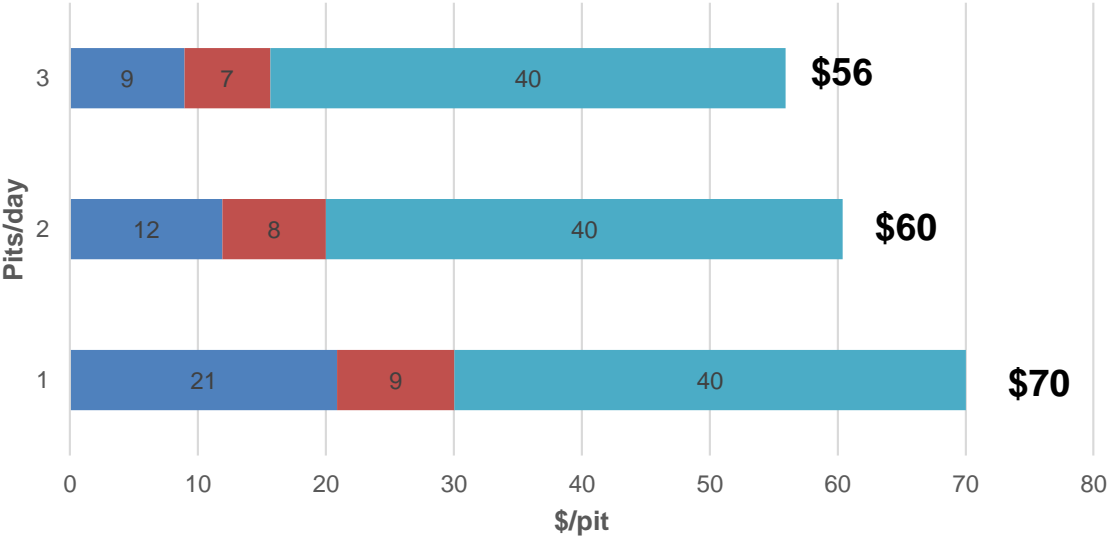
**EQUIPMENT SAVES TIME, NOT (MUCH) MONEY**

**GAINS ARE LIMITED BY TRANSPORT – BOTH IN TERMS FOR COST AND TIME WASTED**

- Personnel
- Vehicle - fuel or rental
- Maintenance
- Rent/Comms/Health and Safety
- Insurance/Tax/licenses
- Disposal fees

# 3. The Business Case: Improved Pit Emptying

## Cost of Emptying – Excluder + Trash Pump



■ Equipment + staff   ■ Overheads   ■ Sludge to disposal

**Custom Vacuum**  
**\$62**

**\$70**

**\$85**

### 3. The Business Case: Improved Pit Emptying

Profit proportional to:

(i) How much you manage to charge

Pit/Day	1	2	3
Charge/pit (\$)	Profit (\$/annum)		
50	- 5,305	- 5,295	- 5,285
75	1,070	7,455	13,840
100	7,445	20,205	32,295

(i) Availability of customers

(ii) Disposal infrastructure access

(iii) Subsidy for services?

### 3. The Business Case – The Market Enablers

STAKEHOLDER	PROPOSITION STRENGTH
Client	MEDIUM
Service Provider – MPE	LOW
Service Provider – VT	MEDIUM
Service Provider – IPE	STRONG
Regulator	VERY STRONG
Treatment Operator	STRONG
Donor/NGO	VERY STRONG
Community	VERY STRONG

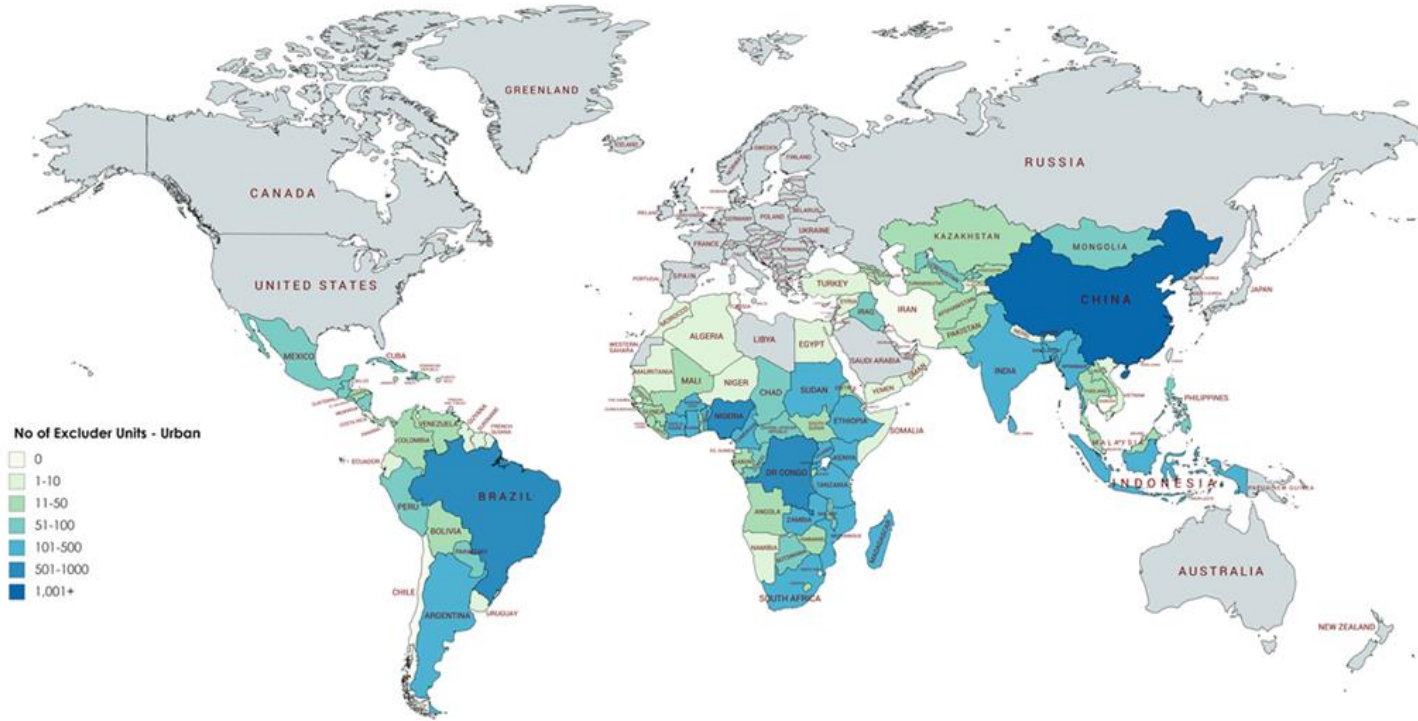
Who to work with...

...without inflating expectations

- Incentivise the Vac trucks
- Train more manual emptiers
- Establish more improved emptying teams

This industry simply must exist

### 3. The Business Case – The Manufacturers



**Max Available Market**  
~66,000 units

**5 year Market**  
~200-300 units

- Early Adopters**
- IPEs – East Africa
  - Utilities/NGOs

Local presence required  
*'without aftersales – there are no sales'*

Partner based model with reduced risk purchase

# Is there a Business Case for Mechanical Emptying of Pit Latrines?

- There is a business case BUT the strength of the case relies on factors external to the machine itself – enabling environment, access to treatment facilities
- Existing business case won't excite 'good' entrepreneurs without incentive/support
- **Enables the IPE industry to gain legitimacy, operate in the day time, and demand and demonstrate the need for infrastructure, regulation and support to offer their services.**

**A MARKET ENABLING TECHNOLOGY**

# What Next?

- Extended testing – Rwanda/Madagascar
- Test with existing pumps/trash pumps
- Identify means to reach early customers
- Manufacturing at small scale for early adopters
- Funding through ‘valley of death’

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