



# Turning Poo Into Profit managing fecal sludge in Madagascar

**Jonathan Annis**

**WASHplus, Sanitation and Innovation Advisor**

**CARE International**

**October 15, 2013**



‘It was not the invention of the toilet, but the safe removal of fecal matter from the public environment that triggered the massive public health gains of the late 19th century....’

Black M. and B. Fawcett. 2008. *The Last Taboo: Opening the Door on the Sanitation Crisis*

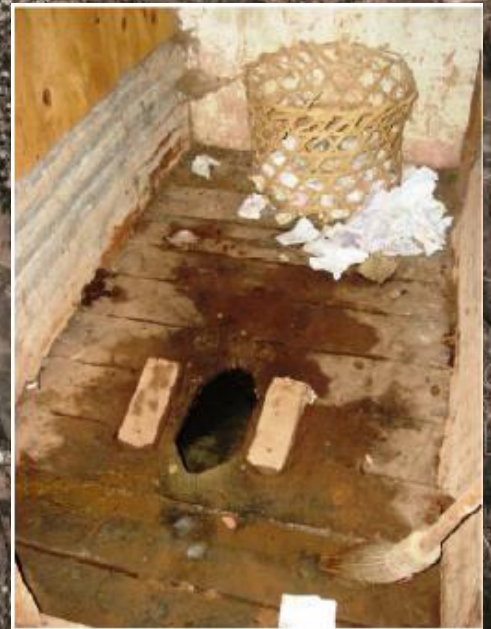
# Ambositra

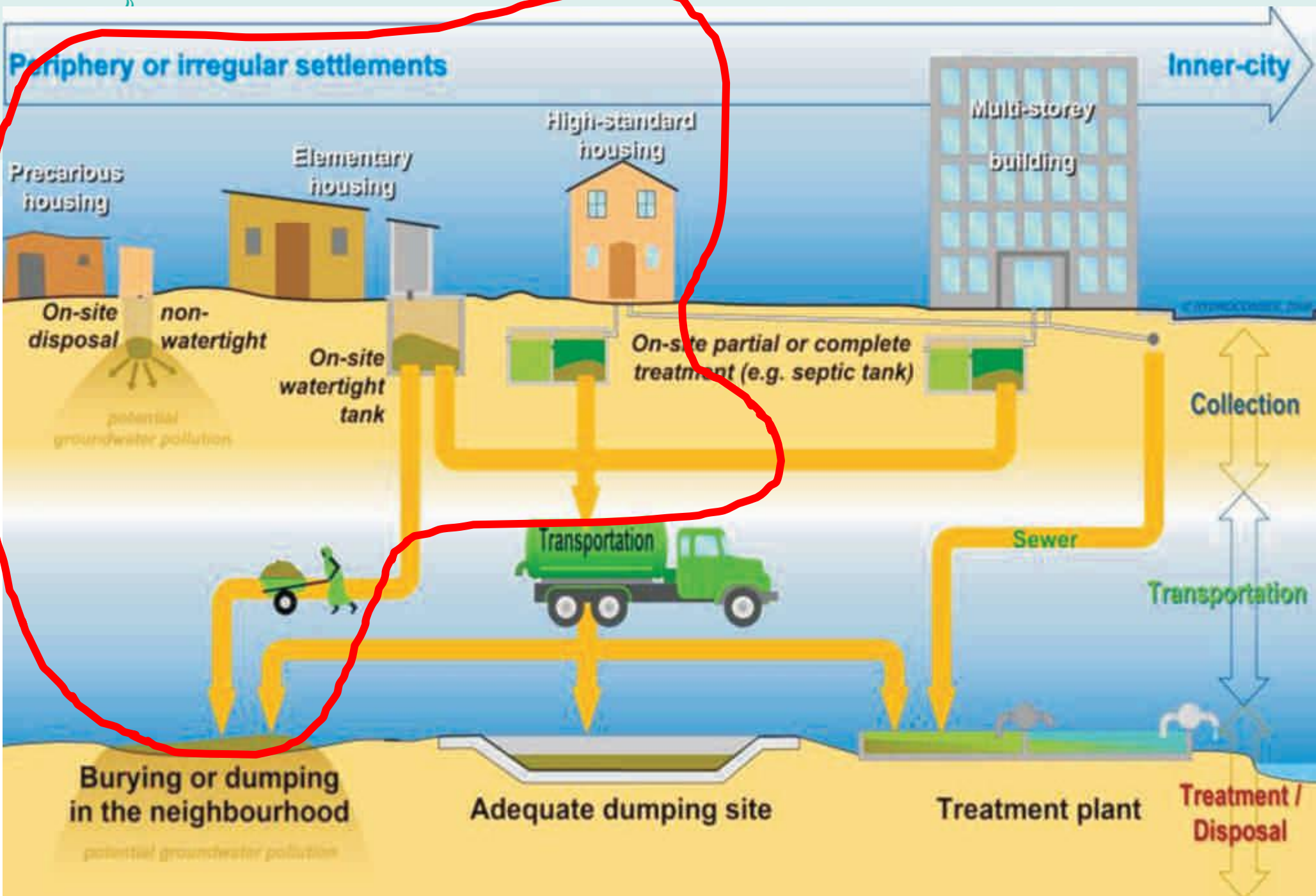




Ambositra, Madagascar

Image © 2013 DigitalGlobe







Technical



Business



Institutional

- **Contracting authority**
- **Identification of burial site**
- **Regulation**



# Mechanical emptying...



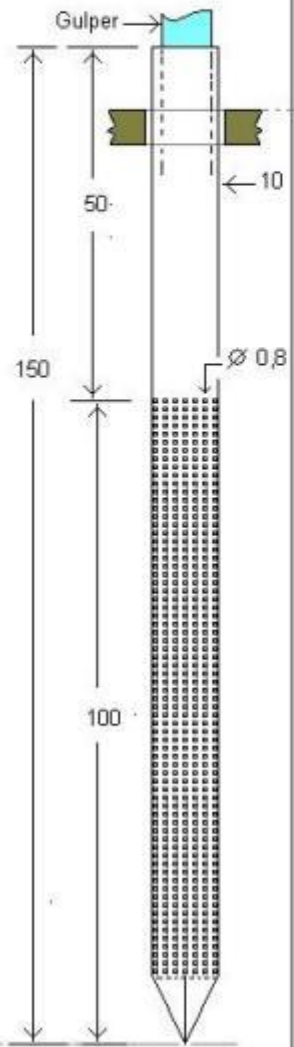
**Blockage of the pump in  
70% of the cases  
(pit latrines)**



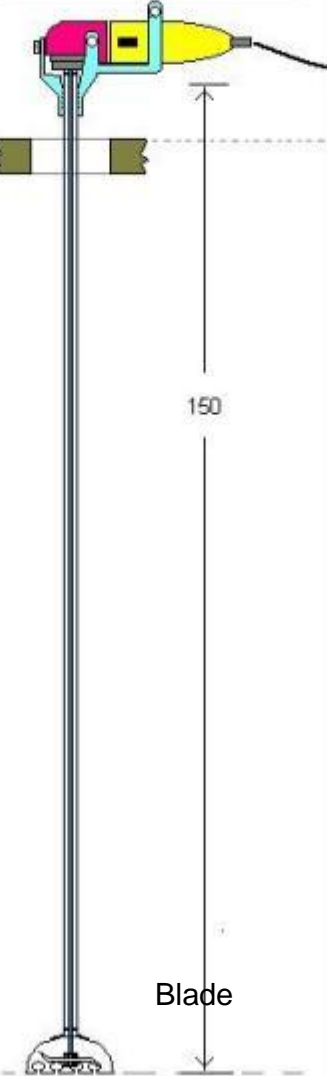
# Four experimental tools to extract sludge from pit latrines

10 cm

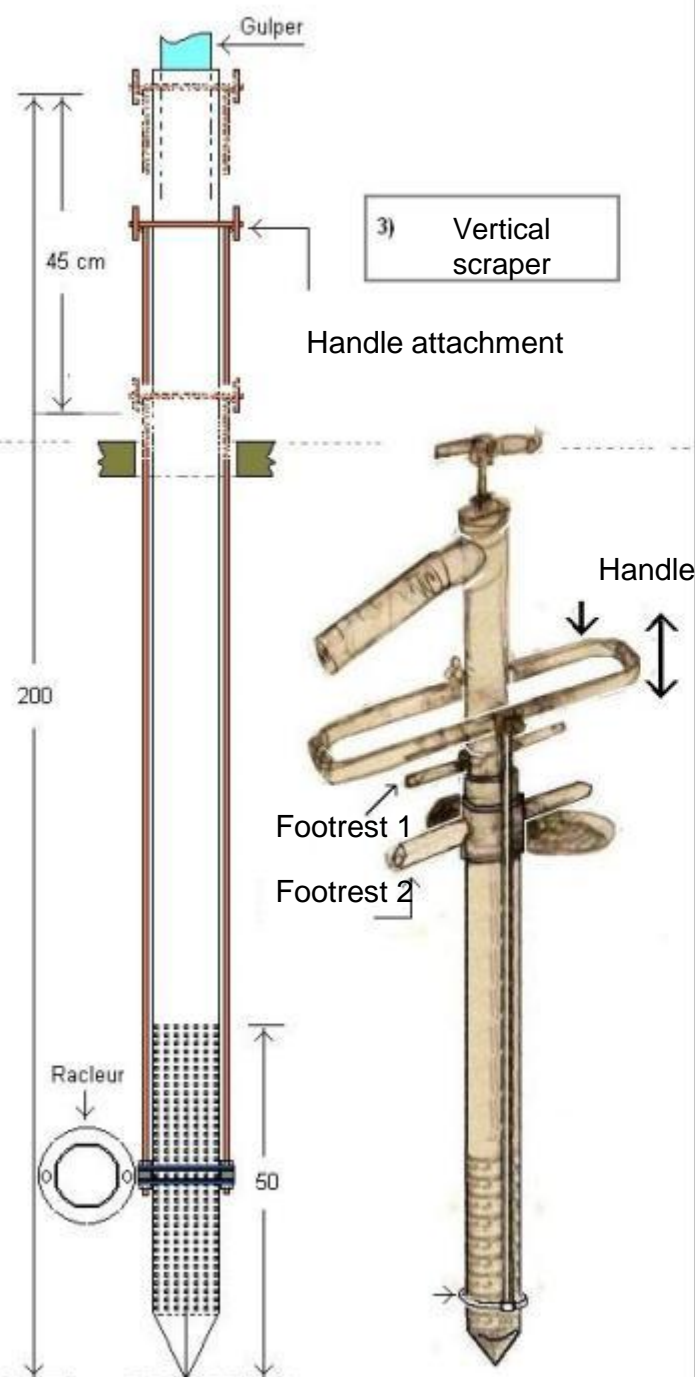
1) PVC screen (8mm)



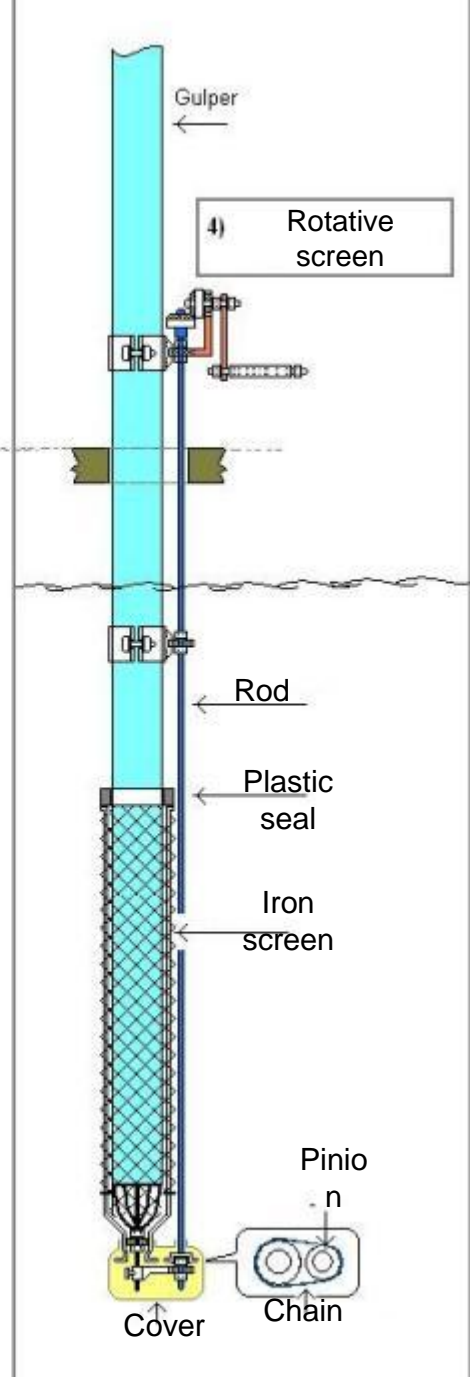
2) Electric blender (850W, 10.000rpm)



3) Vertical scraper



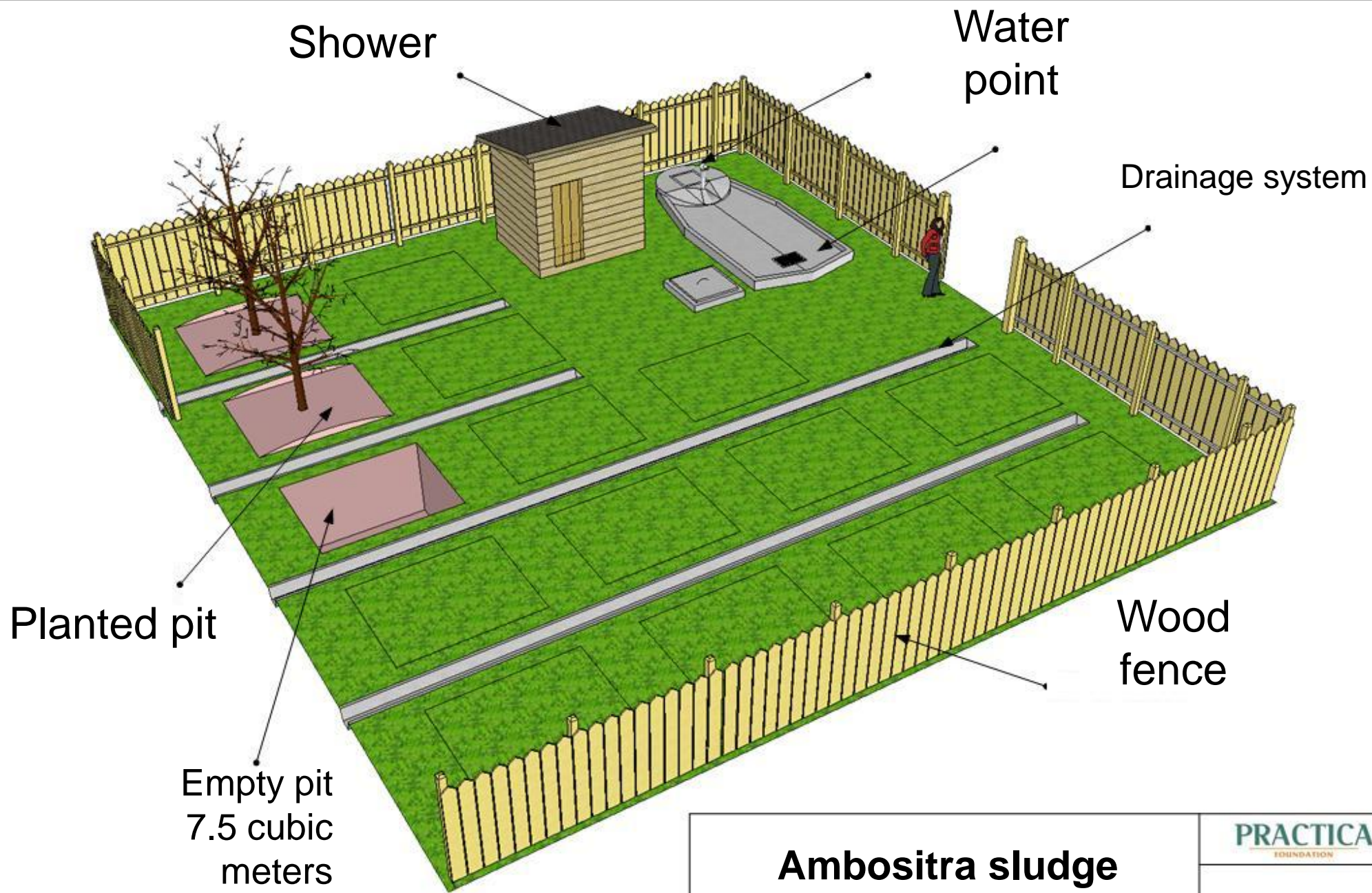
4) Rotative screen





# Locally produced transport equipment





**Ambositra sludge  
burial site : 200m<sup>2</sup>**



**AINA**  
SERVICE DE VIDANGE

Tel. 032 66 504 48  
033 06 154 56  
034 51 028 67

Manao VIDANGE WC : Fosse simple (Kabone tsotra)  
Fosse septique

Ataka Manamboatra sy Manavao

Saran'ny VIDANGE (Prix)

Madry	Kabone tsotra	Fossea septiques
1 m <sup>3</sup> na 16 Daba @ 60 litatra	40 000Ar	43 000Ar
1,5 m <sup>3</sup> na 25 Daba @ 60 litatra	60 000Ar	64 500Ar
3 m <sup>3</sup> na 50 Daba @ 60 litatra	120 000Ar	129 000Ar
4,5 m <sup>3</sup> na 75 Daba @ 60 litatra	141 000Ar	146 000Ar
6 m <sup>3</sup> na 100 Daba @ 60 litatra	163 000Ar	168 000Ar

**MADIO - MORA - MALAKY - TSISY FOFONA**

Aza misalasala MIANTSO na MANANTONA anay fa ho AFA-PO ianao

AMPITAN'NY TRESOR ALAKAMISY AO AMIN'NY RIHANA FAHAROA

## Business support

## Marketing

- Radio ads
- Poster
- Campaign style marketing

**VIDANGE WC !**

KABONE TSOTRA SY FOSSES SEPTIQUES

**MADIO - MORA - MALAKY - TSISY FOFONA**

**AINA**  
SERVICE DE VIDANGE

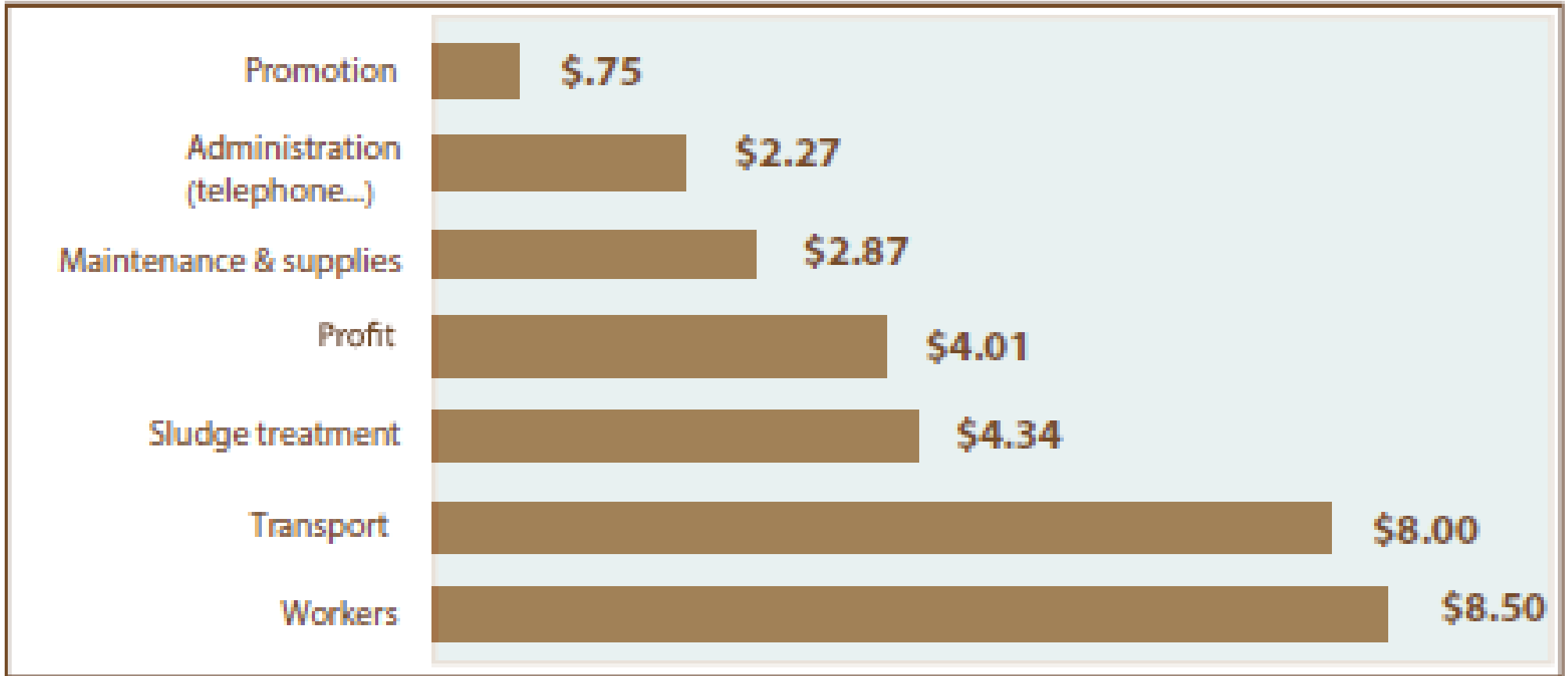
Tel. 032 66 504 48  
033 06 154 56  
034 51 028 67

AMPITAN'NY TRESOR ALAKAMISY AO AMIN'NY RIHANA FAHAROA



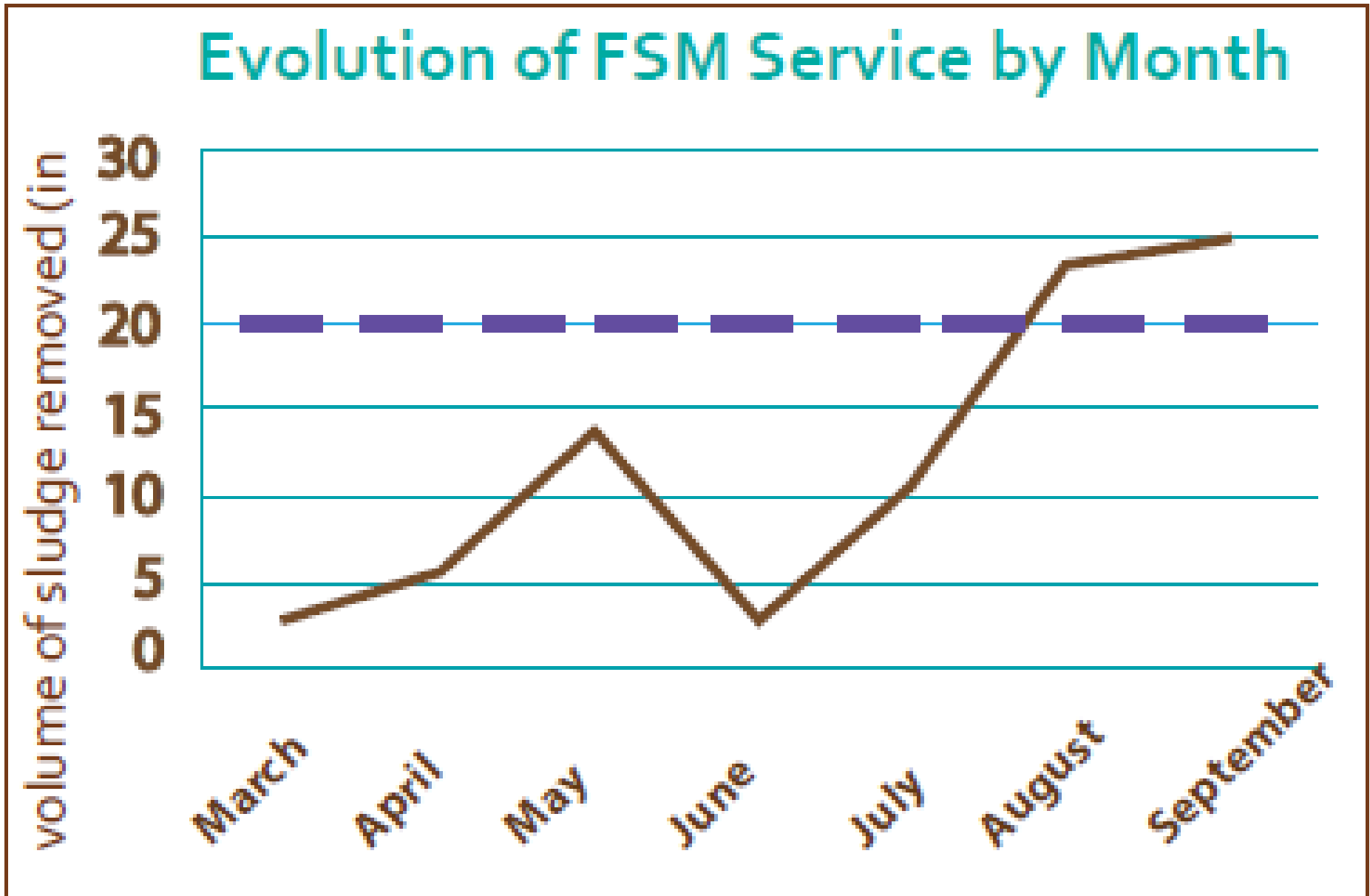
# Price

## Breakdown of Costs of the \$31/m<sup>3</sup> Fee



Note: The entrepreneur is not currently absorbing the costs of periodic water quality testing

# Results to date



*Note: The dashed line indicates profitability.*



# Initial Learning

- The Gulper: one size doesn't fit all
- Partial pit emptying: balancing affordability and profitability
- Burial: a cost-effective method to begin a service
- Social drivers
- Low cost, but still expensive

# Challenges and Perspectives

- Entrepreneurial interest in sludge management is low
- When environmental health deserves a subsidy...or more consistent public financial support
- Sludge drying may be a promising way to reuse biosolids and recycle nutrients

# Thank you..

