Turning Poo Into Profit
managing fecal sludge in Madagascar

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‘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….’

Simplified diagram of the various ways human waste is typically collected, transported and disposed of © Hydroconseil
Institutional Support and Strengthening

• 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

1) PVC screen (8mm)

2) Electric blender (850W, 10,000rpm)

3) Vertical scraper

4) Rotative screen
Locally produced transport equipment
Shower

Water point

Drainage system

Wood fence

Planted pit

Empty pit

7.5 cubic meters

Ambositra sludge burial site: 200m²
Business support

Marketing
- Radio ads
- Poster
- Campaign style marketing
Price

Breakdown of Costs of the $31/m^3 Fee

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion</td>
<td>$0.75</td>
</tr>
<tr>
<td>Administration</td>
<td>$2.27</td>
</tr>
<tr>
<td>Maintenance &amp; supplies</td>
<td>$2.87</td>
</tr>
<tr>
<td>Profit</td>
<td>$4.01</td>
</tr>
<tr>
<td>Sludge treatment</td>
<td>$4.34</td>
</tr>
<tr>
<td>Transport</td>
<td>$8.00</td>
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<tr>
<td>Workers</td>
<td>$8.50</td>
</tr>
</tbody>
</table>

Note: The entrepreneur is not currently absorbing the costs of periodic water quality testing.
Results to date

Evolution of FSM Service by Month

- Volume of sludge removed (in)
- March, April, May, June, July, August, September

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..

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