

Responding to sanitation in emergencies effectively

Day 2 – Desludging

DEFINING THE PROBLEM STATEMENT....

DESLUDGING

**FINDING PRACTICAL AND ADAPTABLE MODALITIES
FOR EMPTYING LATRINES IN DIFFERENT CONTEXTS
(urban v rural) AND WITH DIFFERENT WASTE TYPES
(wet v dry)**

Desludgingsome practical considerations to consider

- **Space – ease of accessibility**
- **Waste viscosity – dry or wet**
- **Anal cleansing materials – paper, plastic bottles, stones, rice husks....**
- **Health & safety**
- **Cost – both Capex & Opex**
- **Diameter, length of suction hose & inlet screen**
- **Custom regulations**
- **Where do you put the faecal waste?**
- **Fleet management (inventories, O&M etc)**
- **Long term willingness to pay by users / authorities**

Manual emptying – Golf course, Port au Prince, Haiti

- **Night operation due to stigma**
- **Health & Safety precautions**
- **Cash for work, or service contracts**



Supplier: Pump International (intended)

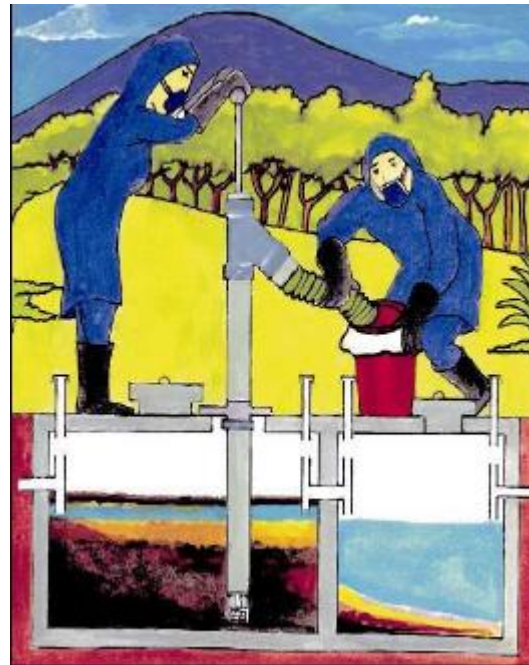
Diaphragm Hand Pumps

- **8m 2" suction hose, 15m 2" distribution hose plus grill attachment on the end of suction hose**
- **40 m**



LSHTM Gulper ...experience in Aceh

- **Up & down motion of the foot valve draws waste up the rising pipe and out of the outlet at the top of the hand pump.**



Desludging tankers



Haiti

- **\$25-30 per day per portable toilet**
- **1 INGO desludging bill in the order of \$500,000 per month**
- **Congested roads**
- **New trucks held for 8 months in customs**
- **Haiti dumping site – faecal waste, solid waste & medical waste**

Desludging stakeholder analysis

1. **Manual desludging (e.g. bucket)**
2. **Gravitational emptying (used for raised latrines)**
3. **Vacuum tank & hand pump**
4. **MDHP / LSHTM gulper**
5. **Suction pump on farm sprayer**
6. **Diaphragm hand pump**
7. **Pit screw auger (PSA)**
8. **Continuous chain device (nibbler)**
9. **Gobbler**
10. **Vacuum truck**
11. **Micravac**
12. **Dung beetle**
13. **Vacutug**
14. **eVAC**
15. **Submersible pump**
16. **Power-operated pit screw motorised pit screw**