

Experience of the UN- Habitat Vacutug: sustainable latrine emptying

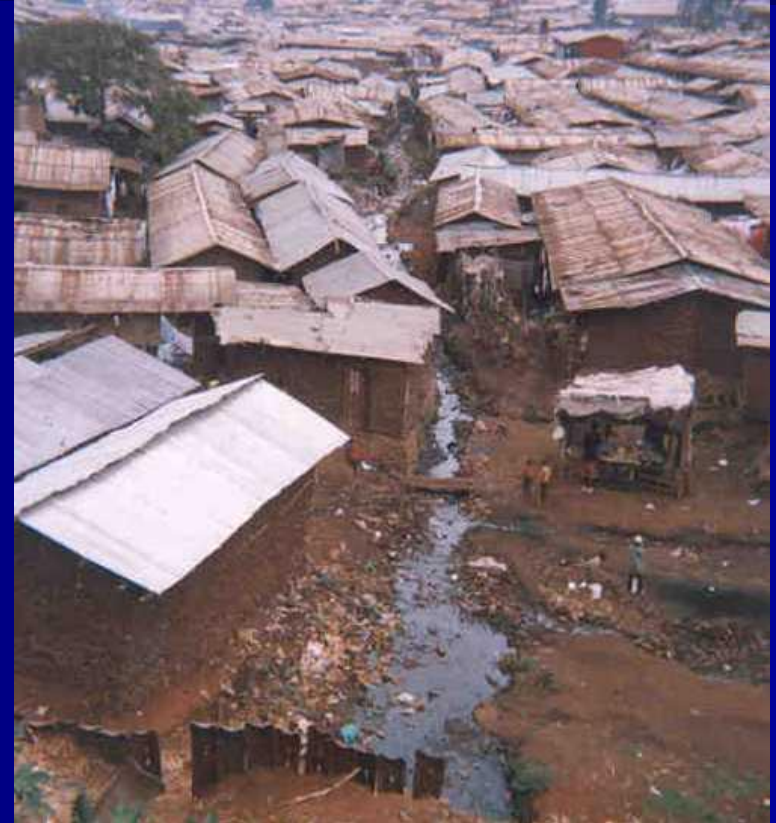
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Background

- In 1995 Un-Habitat developed the a low cost latrine emptying technology Vacutug with MCA Technical problem detected with MARK I led into an improvement of the system and design that produced second generation of the MARK II which was developed in Bangladesh in 2002 for circulation to other countries in the world facing similar situation. Kenya, Bangladesh, Senegal, Tanzania, India, Mozambique, South Africa, Ghana were the beneficiaries of this phase whose trials began in 2003.



The UN-Habitat Vacutug



Case Study 1: Maputo, Mozambique

Financial data provided by Medicine Sans Frontier (MSF) when they handed over the machine to WaterAid has been calculated on a full cost recovery basis. MSF estimated that the machine could earn as much as USD\$12,000 per annum and that at least 5 loads would have to be exhausted every day.

Case Study 2 Kibera Nairobi

- 2 groups (CBOs) operated the enterprise Loads were charged Kshs. 700 while from three and above were charged Kshs. 500.
- Usafi Laini Saba have well secured compound to store the machine.
- Soweto Usafi group are located in semi landlocked place having to cross three narrow wooden makeshift bridges most of the time while in operation, consuming time and resources
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- The two groups were fully trained on basic preventive operations management skills
- O&M data sheets are filled each day of work and report discussed in their monthly general meetings

Case Study 3 Dakar Senegal

- ENDA has been operating the Vacutug as part of its work on low-cost sewerage in Rufisque
- As a result of the field tests in Dakar, the Senegalese Sanitation Company, ONAS, ordered for four Vacutugs to compliment its de-sludging service which uses large tanks, but which could not service some areas. The machines were delivered to Senegal last December 2007 and currently being unpacked and fitted to start operations

Case Study 4 dar-es-Salaam

- Undertaken in partnership with EPCO
- The Vacutug has had no major problems in its operation. The field results showed that in the first 12 months of operation, the Vacutug had emptied 877 pits, on average 4 pits were emptied a day each week, on some days no pits were emptied.
- Prior to the arrival of the machine EEPCO had carried out willingness to pay survey and found that residents were willing to pay up to Tshs 5,000, EEPCO charges Tshs 3000 per load for the Vacutug. In the first year, EEPCO generated a profit of \$340. The Vacutug disposed of 877 loads and provided employment for 3 people, a supervisor and two operators. Up until August 2006 the Vacutug had generated a profit of Tshs 822,790 approximately \$700 (USD\$1@1170).

Vacutug Phase II in Mozambique



Conclusions



- Technical design needs some improvement
- Design of latrine pit to promote mechanised exhaustion and hygiene promotion for the operators and the public
- Design a transfer system for areas that are far from sewerage line as in the case of South Africa, Tanzania and Senegal
- UN-HABITAT to include a start up fund as a package
- Establish regional production centres to enhance mass production, avail spares locally and reduce shipment costs.
- Extremely sustainable in dense slums
- Optimised Management system essential