

Learning from innovation in sanitation business models: shared serviced and container-based sanitation in Kisumu

WSUP works on the front line of a challenging sector: not everything goes to plan when trying to innovate. This note details the development and testing of two sanitation business models in Kisumu (Kenya) that were found to be unviable. It is part of a series of reports emerging from a business-focused on-site sanitation programme funded by the Bill and Melinda Gates Foundation.

Project objective: activating the on-site sanitation market in Kisumu

WSUP's project objective in Kisumu is to activate the on-site sanitation market at city-wide scale. This responds to an urgent need: roughly 60% of Kisumu's population inhabit informal settlements, and as of 2010, 87% of the population were dependent on pit latrines for sanitation. Project surveys revealed that most low-income households shared pit latrines that were unlined, and there were few affordable or legal options for pit emptying. This situation is made worse by a high water table and loose soil that can cause latrines to sink and collapse within a few years of construction. Together these factors led WSUP to examine the feasibility of an alternative, affordable and safe service for providing on-site toilets, emptying them and disposing of the faecal sludge.

How were the business models developed and tested?

As part of the overall programme focus on sanitation businesses, WSUP initially considered four household sanitation solutions for implementation. Drawing upon project surveys, two of these solutions were selected for development and testing, on the basis of being both context-appropriate and with the potential for financial viability. Those models were: 1) a shared serviced sanitation (SSS) model, with modified ecological sanitation (EcoSan) toilet shared between multiple households, and 2) a container-based sanitation (CBS) model, with an indoor portable household toilet. The latter model seemed to be particularly relevant, as surveys revealed that security is a major issue for Kisumu's target residents: having an indoor option was considered the single strongest incentive to invest in a toilet. The business models developed covered the full sanitation chain, as outlined in Figure 1.

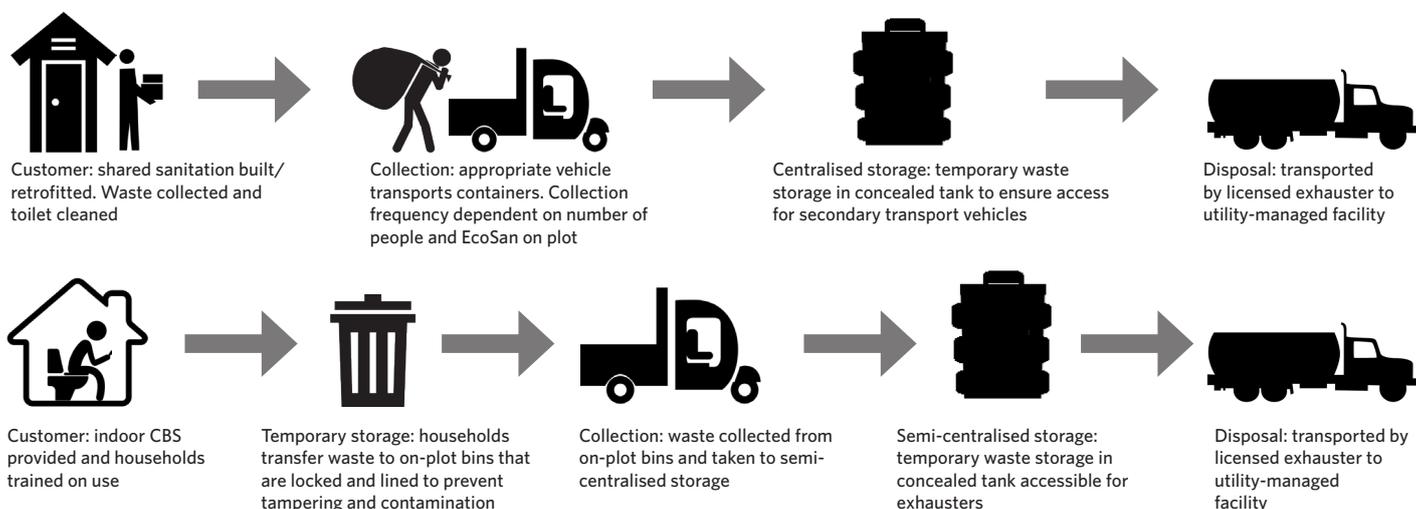


Figure 1: Proposed SSS and CBS business models

The models were tested through a small-scale pilot that evaluated both cost of the service (business/financial modelling) and potential price (willingness-to-pay evaluations). Neither model was deemed viable, the reasons for which are outlined overleaf.

Reality check 1: low landlord and tenant willingness-to-pay (WTP)

While stimulating demand for sanitation is often challenging, the results of detailed WTP evaluations represented a significant setback. Many landlords expressed scepticism towards the idea of a new sanitation service: most wanted tenants to pay, despite landlords being legally responsible for sanitation provision. 61% of landlords were willing to subscribe to a CBS service, but only for themselves and not their tenants. Tenants were more positive, expressing an average WTP of US\$ 5 per customer per month for a CBS service: a substantial sum, but not enough to cover costs. Many tenants had previous negative experiences of toilets breaking down quickly, which contributed to more than 60% being cautious of entering into a contract that lasted more than three months. The results also indicated that WTP would vary throughout the year, due to seasonal incomes. WTP for the SSS model was determined to be US\$ 21 per toilet per month, shared among an average of 28 users.

The small-scale pilot produced a number of customer insights of potential relevance to future CBS models. Most customers:

- were happy to clean their own CBS toilet
- were happy to transport their own waste from the toilet to an on-plot bin (potentially not applicable to all communities in Kisumu)
- preferred a CBS toilet that did not obviously look like a toilet (based partly on the toilets being located in-house)
- responded positively to training about not putting solid waste in the toilets - a practice that was effectively eliminated

Women and children were particularly positive about the in-house CBS toilet model.

Reality check 2: business modelling confirms lack of financial viability

The financial modelling suggested that the cost of the SSS would be approximately US\$48 per customer per month (US\$37 if cost of construction were subsidised), and US\$ 12 per customer per month for the CBS. As such, and considering WTP, over a period of 4 years a 57% subsidy would be required for the SSS, and a 69% subsidy for the CBS. A summary of the findings and assumptions are provided in Figure 2.

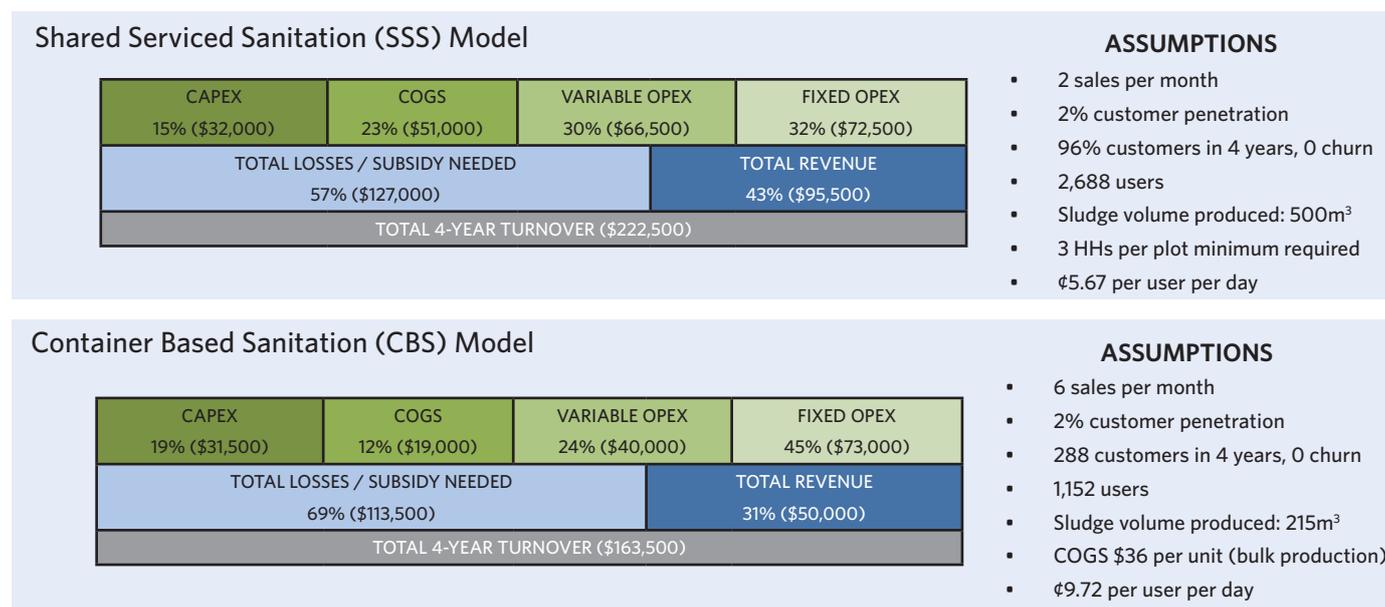


Figure 2: Projected revenue versus costs of the SSS and CBS models.

Next steps: market activation through support to existing sanitation businesses

Based on the learning from these two pilots, the project in Kisumu is currently undertaking a rapid market assessment, trialling and market activation of existing sanitation service delivery models; the latter includes strengthening the supply of and demand for safe emptying services. Together these activities will involve 1) intensive, direct capacity-building support to pre-existing sanitation businesses, and 2) parallel efforts to develop a stronger enabling environment for these businesses, through capacity building support to the county government and stakeholders such as Kisumu Water and Sewerage Company Limited (KIWASCO) and Lake Victoria South Water Services Board (LVSWSB).

Credits: The work described in this Practice Note is funded by the Bill and Melinda Gates Foundation. Authors: Rosie Renouf and Sam Drabble. The development and testing of these business models was led by Katie Whitehouse, with important inputs by Jeff Walcott and Susan Kanga. Review by Georges Mikhael. Coordination and design: Steve Metcalfe. Series editor: Sam Drabble.