Low cost Faecal Sludge Management in Uganda: Modular latrine, Semi mechanised pit Emptying, treatment and reuse

KAMPALA, Uganda

Samuel Malinga

Year Founded: 2013
Organization type: for profit
Project Stage: Scaling
Budget: $10,000 - $50,000
Website: http://sanihub.blogspot.com/

Conservation
Employment
Sanitation
Technology

Project Summary

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

This project aims to develop technologies for all stages of the sanitation value chain (including capture, faecal sludge, emptying, transportation and treatment) in line with sanitation business models. This will lead to improved and more sustainable sanitation provision through the market.

WHAT IF - Inspiration: Write one sentence that describes a way that your project dares to ask, "WHAT IF?"

What if the next generation billionaire is a poo entrepreneur?

Problem: What problem is this project trying to address?

Several sanitation challenges exist in Uganda. Over 95% of Ugandan population uses on site sanitation facilities with 12 waste water treatment plants of which only 3 are conventional. On average 60% of pits are always full in Kampala City. Also in Kampala about 1000m3 of faecal sludge is collectable yet approximately 200m3 is collected. Vacuum tankers don’t access some areas, can’t completely de-sludge and not affordable to some communities.

Solution: What is the proposed solution? Please be specific!

Durable capture structures like the DuraSan can solve the problem of poor workmanship of masons and technologies like the Gulper provide appropriate pit emptying solutions. Decentralized faecal sludge treatment systems will solve the problem of long distances. In order to make this project sustainable, we need to demonstrate profitability such that it drives entrepreneurs to venture into the business. The emptying and primary transportation devices have access to congested areas like unplanned settlements.

Impact: How does it Work
Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

The DuraSan toilets is a modular structure made out of precast concrete blocks. It is cost effective, easy to install, eliminates poor workmanship of mansions and provides a good platform for customers to get it through loans. The Emptying device is locally fabricated and affordable, capable of pumping viscous sludge, easy to operate, cleaner, goes deeper into the pit and minimizes spillage of sludge. The primary transportation devices are meant to aid the movement of sludge barrels in the narrow paths of slums to a collection area for further transportation to disposal sites. Our treatment plant has all the anaerobic units made out of plastic tanks, this makes it cheap, allows recovery of energy and the biosolids for agricultural use.

Impact: What is the impact of the work to date? Also describe the projected future impact for the coming years.

The project has benefited people in different categories ranging from fabricators, contractors, entrepreneurs to Research and development engineers. The project is also contributing significantly to the public health of the area e.g. the current gulping entrepreneurs currently account for 4% of all sludge emptied in Kampala. Two fabricators have been equipped with skills to manufacture pit emptying devices which they then sell to entrepreneurs who empty pits at a fee. On average an entrepreneur earns a net profit of $30 per day. The communities are now able to reuse their pits instead of previously abandoning and digging new pits. One contractor has built 10 DuraSan toilets in communities which has improved access to desirable sanitation facilities. DuraSan is durable and encourages emptying and reuse. The technologies have attracted demand from Kenya, Zambia, Mozambique.

Spread Strategies: Moving forward, what are the main strategies for scaling impact?

All rural growth centers and towns in Uganda should access these sanitation technologies i.e. the DuraSan modular latrine, Gulping (emptying) business, and low cost treatment and reuse. At full potential, we want to improve faecal sludge collection in Kampala by gulper entrepreneurs to 30%. We plan to set up franchise in every region of Uganda where people can access our services. We expect over 100 people to be employed in this business, with the biggest fraction being entrepreneurs whose wages will come from the profit they make. Target is to attain full nationwide business coverage by 2020.

Financial Sustainability Plan: What is this solution’s plan to ensure financial sustainability?

The DuraSan given its advantages over the existing models, is expected to be sustained by the profit from the sales. We are in partnership with banks to give loans to our clients. The emptying devices are bought, and also leased. We plan to buy a pickup truck that entrepreneurs can hire. The main clients of DEWATS are expected to be institutions, government and some communities. This is sustained by charging a dumping fee and selling its products.

Marketplace: Who else is addressing the problem outlined here? How does the proposed project differ from these approaches?

Private cesspool emptiers and KCCA are mainly using vacuum tankers for emptying which are faced with inaccessibility and unable to desludge in-situ pit sludge. This project is unique in that it addresses challenges of latrine structures, more viscous pit latrine sludge and inaccessibility, lack of decentralised treatment systems. The demand for pit emptying services is clear, there is also an untapped market for bio fuels. Industries such as Uganda Clays currently import biofuel from Tanzania to heat their clay brick kilns. Locally captured and dried pit sludge could provide a cheaper option.

Team

Founding Story

Our upbringing in the slums in Kampala made us see the sanitation challenges many individuals face when their pit latrines got full with no space for digging new pit latrines. There are limited solutions for emptying these pits and yet households continue to use them in that state exposing them to sanitation-related disease. Given our engineering background, we came together to research and develop technologies to help our communities to improve their sanitation. Training some community members to use these technologies has created employment for them as they get paid for emptying pits making them usable again hence better sanitation. Thus people are now regarding poo as a resource and we are also exploring options for treatment and reuse.

Team

Our team comprises three engineers being supported through an NGO to develop technologies after which we strike the market for profit. As this is a market-driven approach, each technology developed is attached to a marketer who activates demand for our products. We endeavor to combine our technical skills with the entrepreneur abilities so that we develop appropriate technologies that can be used to solve pressing sanitation needs.

About You

First Name
Samuel

Last Name
Malinga

Email
malingasamuel@gmail.com

Twitter URL
About Your Project
Organization Name
How long has your organization been operating?

Project
Organization Country
, KAMPALA
Country where this project is creating social impact
, KAMPALA
What awards or honors has the project received?
Funding: How is your project financially supported?
Foundations, NGOs, Businesses, Customers.

Supplemental
Sector

Audience: Who have you identified as your customer/recipient groups and do these groups value your solution for different reasons?
How do you engage different customer/recipient groups to deliver your solution?
Individual house holds, public and private Institutions, towns, communities and NGOs. We reach to them through workshops, conferences, exhibitions, brochures and some social media. We also organize field training to entrepreneurs on how to use our technologies.

Scaling the solution: How would the prize money and publicity help you to achieve your objectives over the next two years?
We intend to start a franchise of sanitation technologies in the four region of Uganda each equipped with our technologies for both buying and leasing, customer care center. we also plan to recruit entrepreneurs in each town and equip them with tricycle pikipiki for transporting sludge.

Experience: Please provide examples of any previous entrepreneurial initiatives you have pioneered
We have initiated and run business in various fields. Habert owns a salon, Samuel was among the inventors of a paper bag business in Uganda to replace non-biodegradable polythene. Samuel also does poultry farming and fruit growing. Osbert ran a local bar in his primary school times. And all of us are engaged in part time commercial farming.

Are you are eligible to attend the Accelerator event in Cambridge and subsequent events in London, UK in January, 2015?
yes

Will you require a visa to enter the UK?
yes

Are you a current Unilever employee?