

Sanitation as a Business: A new spin on the challenge of sanitation Operation and Maintenance

This paper describes Sanitation as a Business, an innovative approach to operation and maintenance challenges in household sanitation improvements.

Author: S. Bramley, E. Breslin

Abstract

Sanitation as a Business is a new program Water For People has tested in Malawi. The ideas behind this alternative to traditional sanitation programs are innovative and stem from a simple truth: We do not have the money or human capacity available to build everyone who lacks improved sanitation a latrine. More importantly, programs that build latrines consistently struggle to have impact or reach scale, and often distort the market environment in ways that undermine future sanitation development. *Sanitation as a Business* tries to shift sanitation programming by changing the incentives and bringing the private sector into sanitation in new ways. The key to *Sanitation as a Business* is to make ongoing sanitation services the goal, rather than the latrine itself. When sanitation services are profitable and businesses see everyone without a latrine as a potential customer, businesses—rather than NGOs—will expand latrine coverage to increase their profit margin.

The problem

There is not enough charitable funding in the world to provide latrines to everyone who needs them, and experience tells us that even if we could give away enough latrines, economic, social, and health outcomes likely wouldn't improve. Sanitation is not a simple "give them a latrine and they will use it" challenge. Thus, the world needs a new way of thinking about sanitation delivery.

The 2008 Joint Monitoring Program (JMP) from WHO and UNICEF reports that since 1990, the percentage of the global populations without access to improved sanitation has decreased by only eight percentage points. The JMP suggests that the world won't even achieve half of the Millennium Development Goal for sanitation at current rates of installation and consequently is projected to miss the sanitation MDG by more than 700 million people (WHO and UNICEF, 2008).

Twenty-two percent of those without access to improved sanitation—more than half a billion people—live in sub-Saharan Africa while the greatest challenge remains in Asia and India in particular.

The reasons for the global struggle to address sanitation are increasingly clear. Some argue that sanitation is the unpopular cousin of water supply, and that investments, interest and motivation to transform the sanitation sector are lacking. Others point out that subsidized sanitation (free or discounted latrines) distorts markets, has yet to demonstrate success at scale, and has not expanded coverage once subsidies are removed (in fact, most subsidized initiatives completely collapse as the subsidy is withdrawn). Projects that rely on demonstration latrines to inspire, motivate, and convince community members are particularly ineffective. Loan-financed sanitation support has shown some promise in parts of the world but has generally been uninspiring in Africa

Key factors for successful O&M through Sanitation as a Business include:

- An ongoing relationship between the sanitation entrepreneur and the household
- Sanitation businesses should provide services that are needed on a regular basis (like pit emptying) rather than once-off services (like latrine construction)
- Entrepreneurs need seed capital to get their businesses started. Success will be understood by the private sector reinvesting profits into new latrines, thus expanding coverage without donor finance

and Latin America, and even places where loan finance has shown some promise (like India) often fails to really grow beyond small-scale successes. Sanitation Markets (SaniMarts) offer a passive private sector response to sanitation delivery, and social marketing initiatives show promise but not scale as of yet. Community-Led Total Sanitation has energized the sector for all the right reasons but the failure of this initiative to monitor its work effectively has undermined its potential.

Water For People has tried all of these approaches with some successes but more failures, since we measure the potential of rolling sanitation out at scale. As such, we are exploring a new and different approach. Instead of thinking of latrines as the ultimate goal of a sanitation program, we are thinking of sanitation as a service where profits can be reinvested to expand latrine coverage. Rather than seeing a once-off delivery of latrines that might or might not be used, we are trying to uncover financial incentives for both entrepreneurs and households so that everyone in the systems has a financial stake in successful, ongoing latrine operation and maintenance.

We are seeing the possibility for greater success from this approach, known as *Sanitation as a Business*. In this alternative to traditional sanitation programs, small, loan-inspired investments in improved sanitation could lead to dramatic sanitation expansion by trying to find ways to make sanitation a service between entrepreneurs and households, rather than a once-off delivery of a latrine.

What is *Sanitation as a Business*?

Sanitation as a Business is simple—we identify ways for the private sector to generate income from developing on-going relations with households through sanitation services, and realize that they will gain more income by finding new clients with sanitation services, thus expanding coverage. We are finding creative ways to achieve this pro-business service relationship through the use of ecological sanitation and the sale of compost, as well as support to innovative pit emptying services in cities. As such, households are incentivized to use their latrines as designed, and businesses are incentivized to provide high-quality maintenance to their clients.

Water For People, an international development organization with programs in Latin America, Africa, and India, has learned from its past challenges with providing access to sanitation. Water For People is shifting from traditional, subsidy-driven sanitation approaches to a more

business-driven model. This transformation is important, as Water For People's monitoring data consistently show that our application of traditional sanitation models will not lead to scalable sanitation solutions.

The key to the *Sanitation as a Business* model is to redefine the relationship between private sector builders and households. Conventional sanitation programs (subsidized, loan-financed, and advanced forms of Community-Led Total Sanitation) all suffer from a programmatic approach where the sanitation entrepreneur (usually a mason) has a one-off relationship with a household. The household accesses a mason (whose job is to build a latrine, but is not necessarily entrepreneurial in finding business opportunity), the mason builds the latrine, and then they have no further contact. Great energy is spent on training masons whose future is limited: Once families have latrines there is no further need for the mason. He or she will build as many latrines as will keep him or her busy but eventually business dries up and the opportunity costs and incentives associated with expanding the mason's clients become prohibitive. The mason eventually gives up as the market is saturated—there are too few households requesting his or her services to make the work worthwhile.

Sanitation as a Business attacks this problem by trying to understand and develop an on-going relationship between entrepreneurs and households. This relationship allows, at a minimum, a profit-making opportunity for continued and effective services provided by entrepreneurs. In the best-case scenario, the relationship provides a situation where both the household and the entrepreneur realize financial opportunities from sanitation.

The key to this program is to identify ways in which sanitation is expanded because it is provided as an ongoing service between service providers and households rather than a once-off transaction between a mason and a family around a latrine. Water For People has tried two options:

1. Using latrines as a tool to access composted feces and urine, which has market value and can be a source of finance for entrepreneurs. At scale, compost can be sold to large-scale entities such as large-scale commercial farms and commercial fertilizer companies. The incentive is to get more customers producing compost, which means more families using latrines
2. Establishing desludging services so that families receive a latrine and have to pay

businesses to regularly clean these latrines. The key is the desludging business and the fees earned from those services. The latrines are simply a means to that end, but the end result is, again, greater and sustained coverage as all people are potential customers, rather than once-off beneficiaries of latrines

Sanitation as a Business in Malawi

The *Sanitation as a Business* program in Malawi, begins by developing demand for composting latrines.

Composting latrines transform human excreta into safe compost that can then be used as fertilizer and enhance agricultural production. The *Sanitation as a Business* program model works with two types of composting latrines.

The first, called a Fossa Alterna, is a double-pitted, shallow latrine. Household members use one pit at a time. When the first pit is full, the pit is covered and left to transform into compost while the family uses the second pit for their sanitary needs. The first pit is dug out when the family has filled the second pit, the second pit is covered, and the process begins again. Families alternate between pits: One is used for human excrement while the other is covered and transforms the contents into useable compost. Fossa Alterna latrines are not urine-diverting (i.e. all human excrement goes in the same hole) and so take longer to dry, but produce higher-quality fertilizer because it is full of nitrates from urine. Our experience is that Fossa Alterna latrines are generally more acceptable to families than urine diversion because household members use them just as they would a traditional pit latrine.

The second type of composting latrine offered to households in this program is a “sky loo,” which is a composting latrine where the pits are constructed above ground (most often implemented in areas with high water tables or in places where this latrine is chosen by households because it is more “modern”). Sky loos can either be urine-diverting or not. A formal seat is installed in the urine diversion model with a divider. Human feces fall into one hole while urine is diverted into a smaller hole at the front of the latrine seat and collected separately, often in a jerry can, or into a French Drain (or soak-away pit) when the family does not want to manage the urine. Feces dry more quickly in urine-diverting latrines than in non-urine-diverting latrines, but the compost produced, while still high-quality, is less nutrient-rich. In a urine diversion model, the urine can be

removed from the latrine, diluted, and used to add nutrients to soil or as a pesticide. Feces are stored in the latrine chamber and dried/composted over time. The composted feces are removed from the sky loo through a door in the back of the latrine. Sky loos are often more expensive to construct than Fossa Alterna latrines because of the additional cost of construction materials necessary to create the sub-structure.

This particular *Sanitation as a Business* model is premised on the assumption that composted human feces and urine are valuable and sellable commodities, and that sanitation services can be developed that ensure an on-going relationship between families and entrepreneurs that is mutually beneficial, mutually profitable and where the entrepreneur has a clear incentive to extend services to new families as this is a vehicle for further profit. The entrepreneur has a significant incentive to seek out new clients as he or she maintains existing relationships, thus meeting sector goals of expanding sanitation coverage.

This program is new and different than other sanitation programs because the entrepreneur no longer looks at the NGO or donor as the client—a cornerstone of conventional sanitation initiatives—but rather, correctly sees every household without improved sanitation as a customer. Likewise, households don’t look to the NGO or donor to keep their latrines functional—but rather, correctly see the sanitation entrepreneur as the one providing a valuable service.

This new program is promising because it is in many respects not about sanitation. Rather, it is about profit and services, using sanitation as a vehicle for business development. As such, operation and maintenance, is the heart of the program: Businesses that offer high-quality service are the ones that make higher profits and are able to grow. Businesses where service is lacking go out of business, and households look to competitors to get their service needs met.

The rural Malawian application of *Sanitation as a Business* starts with families purchasing composting latrines on loan from the sanitation entrepreneur. Household members do not receive cash. Rather the sanitation entrepreneur installs the composting latrine. The sanitation entrepreneur organizes transportation as part of the business and collects the compost from the latrines after it is safe to handle as repayment on the loan. In the rural Malawian example, tests have shown there not to be need for secondary treatment; however, an entrepreneur could add

that if it were needed. The sanitation entrepreneur sells the compost to a local fertilizer buyer or farmer and thereby makes a profit, which pays for the investment in households as well as supports operating costs. With each collection of compost, the household works down its debt to the sanitation entrepreneur.

Once the latrine is fully paid for, the household continues its relationship with the sanitation entrepreneur and, most importantly, receives a small payment for their compost, thereby encouraging the household to continue to use the latrine appropriately. Families, therefore, make money by using their latrine. The sanitation entrepreneur continues to sell the compost, builds a customer base and, in the case of Malawi, creates the potential for large-scale bulk sales to private fertilizer companies. The fertilizer companies respond to the eventual volume that is created. Alternately, the sanitation entrepreneur helps develop a competitive internal market for compost. The sanitation entrepreneur wants to attract large-scale buyers and thus needs to find new customers. As there is profit to be made, the sanitation entrepreneur has incentive to continue his or her compost collection service to the household, and the household has incentive to continue to produce high-quality compost by operating and maintaining their Composting latrine well so that they will receive regular small payments.

A depiction of the model is provided in Figure 1. Other models using this basic concept are also being considered. There are opportunities to apply

this work in schools and at public places like taxi ranks. Water For People is supporting such work in Rwanda and has found that entrepreneurs may see possibilities for income generation using composting latrines at schools and taxi ranks because of the potential volume of income and compost. (Water For People’s work in Rwanda is just beginning but has promise.)

Water For People has developed a similar framework in Blantyre, Malawi around desludging services that does not include composting latrines. In this model, families receive a latrine from an entrepreneur and sign a contract with that entrepreneur for desludging services, which the household will pay for. The entrepreneur has a relationship with that client that ensures regular interaction. The incentive is such that the entrepreneur can make more money by not only providing affordable and high-quality service to the existing families in the entrepreneur’s network, but by expanding the network of clients to households without sanitation facilities.

Since the beginning of the program in 2008, sanitation entrepreneurs in Malawi have developed ongoing maintenance relationships with households to service over 1,000 latrines. Since that time, sanitation entrepreneurs have emptied more than 500 composting latrines, collecting 500 50-kg bags of fertilizer. So far, sanitation entrepreneurs have sold nearly 370 bags of fertilizer. Further cost-benefit analysis is needed to better understand the price of fertilizer needed in order to profit from the sales.

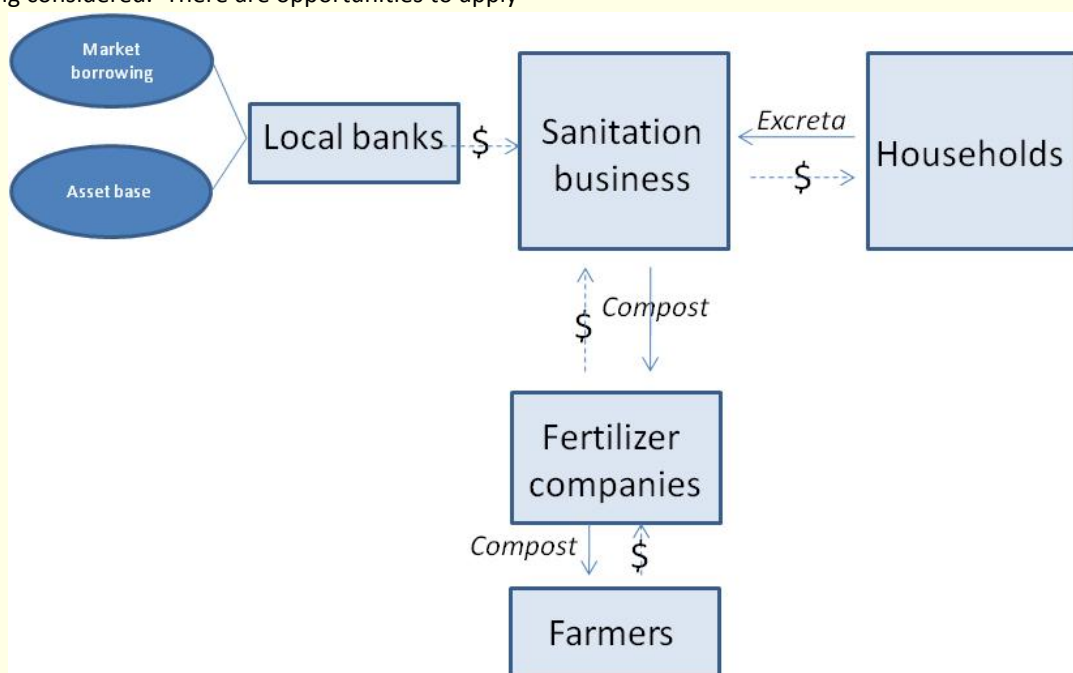


Figure 1. Diagram of the rural *Sanitation as a Business* model in Malawi.

Water For People is trying to help sanitation entrepreneurs build a market for 50-kg bags of fertilizer at a price that will sustain sanitation businesses. This market building is being done in a number of ways:

1. A chemical analysis of compost has been completed. The compost was considerably richer in nutrient value than the soil that people plant in at present, which was to be expected.
2. The development of a series of demonstration plots that show that human compost is more effective for agricultural production than commercial fertilizers, rain-fed agriculture without fertilizers, and fields with animal feces as the fertilizer (goat and cow).
3. The development of advertising campaigns and marketing to promote the compost as a valuable product. The goal is to demonstrate that the compost is a viable but cheaper alternative to commercial fertilizers.
4. Experimenting with chemical additives and animal fertilizers to increase the nutrient content of latrine compost, and thus make it more valuable. Similarly, Sanitation entrepreneurs believe that the value of the compost could be dramatically improved if made into more manageable pellets

To further stimulate the fertilizer market, in one rural area, Water For People bought eight bags of compost. Shortly thereafter, one of the sanitation entrepreneurs made a deal with Hope Village Project, an orphanage with an agriculture project that supports orphans, to sell 40 50-kg of compost. Hope Village will use the bags as a test run, and if the results are good is willing to pay more for the compost in the future. Other compost buyers, to date, include the Blantyre City Assembly, which is buying compost for their landscape contractors and at least two tree nurseries.

Recommendations

- Think like a business: Sanitation as a Business gets beyond selling slabs and relying on NGOs to train every mason. As such, it's critical that sanitation entrepreneurs develop business plans that will make for viable businesses. The type of technology matters less than the service that the entrepreneur is providing, and that that service model earns the entrepreneur enough money to sustain the business. For example, shallow pit latrines will need to be emptied more frequently than deep ones, thus allowing for regular cash flow in the business.

- Know your market: Sanitation as a Business relies on there being a market for ongoing service. It is recommended that sanitation entrepreneurs access market analyses to know what types of services their customers would like, what fertilizers sells for (in the case of composting latrines), how much customers are able to pay, and how many potential customers are within reach of the business.
- Get out of the way: There is a tendency for businesses to look back to the NGO for further support. If the business is set up properly, there will be no reason for the entrepreneur to look to the NGO for additional funding. If the entrepreneur isn't making enough money to maintain his or her service contracts, then the business model is flawed and needs to be adjusted.

References

WHO and UNICEF (2008): *Progress on Drinking Water and Sanitation: Special Focus on Sanitation*. Joint Monitoring Program for Water Supply and Sanitation (JMP). UNICEF, New York, USA, and WHO, Geneva, Switzerland.

Name: Sarah Bramley
Organisation: Water For People
Country: Uganda, USA
e-mail: sbramley@waterforpeople.org

Name: Edward Breslin
Organisation: Water For People
Country: Uganda, USA