

WATERSHED



Project	<i>Hands Off</i> Sanitation Marketing Program
Organization	WaterSHED (NGO)
Geography	Cambodia
Areas	Rural
Solution	Individual
Date started	2009
Stage	Scale-up
Scale	61k toilets (287k persons) since 2011



WaterSHED sanitation training event
Source: www.watershedasia.org

Project description

History of organization

WaterSHED (Water, Sanitation and Hygiene Enterprise Development) is an NGO whose mission is to create demand and supply for low-cost sanitation, water and hand-wash products and services in Cambodia, Laos and Vietnam. The “Hands-Off Sanitation Marketing Program” seeks to facilitate the sustainable development of a local rural sanitation market. In Cambodia, WaterSHED started as a USAID-funded WASH umbrella program, which supported a number of local organizations (including WTO, iDE, East Meets West, Lien Aid). When the program began winding down in 2011, WaterSHED registered as an NGO and continued operations independently. Its current 3-year 2012-2014 sanitation program is funded by the Stone Family Foundation, Diageo Foundation, Waterloo Foundation, the Global Sanitation Fund, and Grand Challenges Canada. It is currently active in 7 of the 21 rural provinces of the country (59 districts in total).

Value proposition and profile of customers

Leveraging local market players, WaterSHED helps create demand and supply for rural latrines priced in average between \$45 and \$50. These latrines are ~25%-35% cheaper than other designs, as WaterSHED trains producers in how to increase production volumes using improved molds, and encourages them to produce all parts, thereby reducing the complexity and the transport costs in sourcing components from different workshops. As a result, consumers can now purchase a cheaper, ‘off-the-shelf’ product with one single supplier, for a fixed price, with maximum convenience (delivery often included and installation service available). This represents a considerable improvement over previous

alternatives, whereby consumers would rely on the advice of local masons, have to purchase and transport materials from many suppliers, and pay high labor costs to have their latrine and shelter built manually.

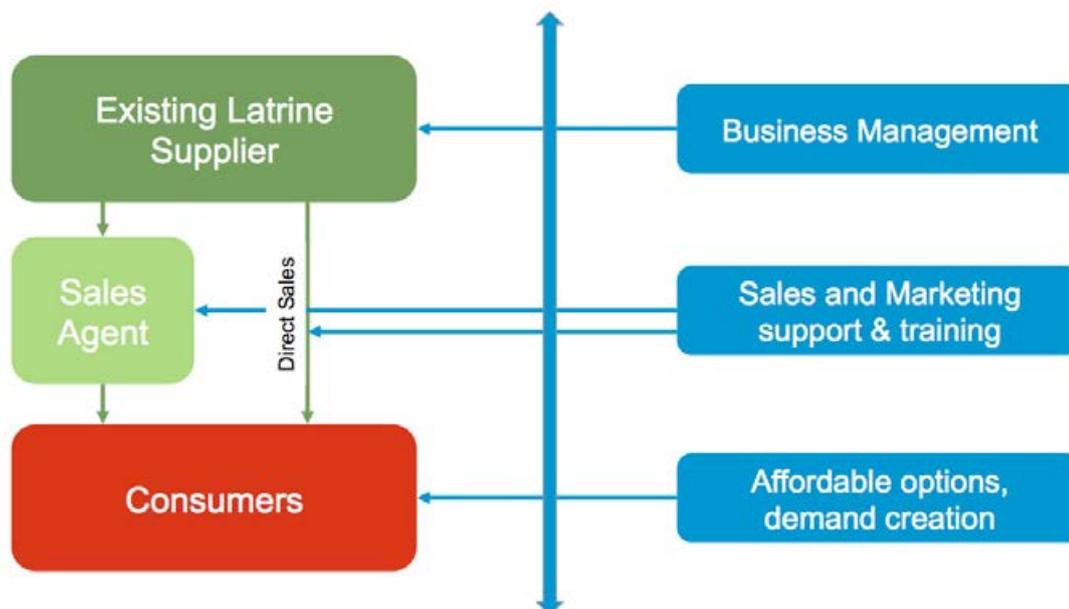
WaterSHED also developed a corrugated zinc-based shelter priced at \$75 – which met limited demand as the material is perceived as less durable than concrete. It is now exploring the possibility of designing a concrete shelter that would be cheaper than current alternatives that cost ~ \$200-250.

WaterSHED works in villages where the population lives mostly of farming. In rural Cambodia, open defecation is rather prevalent (63% national average) with wide variations between areas. In the areas where WaterSHED operates, monthly household net cash income ranges from ~25-30\$ for the 20% most vulnerable without much or any land, to \$50-75 for the 50% families cultivating their own plots, and \$75-100 for those 20% families who have a member earning cash income. The main drivers for product adoption are word-of-mouth (30%) and family situation (children become physically mature, sick/old relative). The main reasons why customers chose the WaterSHED-supported supplier are the price and home delivery arguments.

Value chain

WaterSHED adopts a ‘hands off’ approach to developing local supply chains. It does not seek to replace any single player in the chain, but rather introduces and engages new agents (e.g. WaterSHED recruits new suppliers to the toilet business) into it. It focuses in particular on latrine manufacturers, and seeks to support them in successfully developing and maintaining a customer base and network of promoters.

Role of WaterSHED in the value chain



Manufacturing

WaterSHED supports 165 local active latrine manufacturers willing and able to participate in the program. The conditions to participate to the program include: investing up to \$385 into molds to produce at least 3 sets latrine sets/day, carrying 30 sets in stock at any point of time (or roughly \$500 in inventory), and owning a delivery vehicle or truck. The area covered by each manufacturer (typically 8km radius) is decided after consulting with the local communities (depending on the distance and preference). The very large majority of the manufacturers used to produce (parts of) latrines prior to the program, but in very low volumes. There is in average of one manufacturer for every 20-30 villages.

WaterSHED trains the manufacturers in marketing (1 day in-class and regular support and visits afterwards), and establishes links with local officials, who support the project and promote the product in their respective constituencies.

The latrine production costs ~\$30-35, including roughly \$5 for labor, \$25-30 for input material. In addition, the manufacturer adds 3-5\$ for transport and delivery, 10\$ margin for himself, and a \$1.25-2 margin for the sales agent, as well as in some cases 1\$ for the MFI. Producers are typically able to deliver the latrines within 1-3 weeks.

Production, driven by demand, is very much seasonal (low in July-November and high from December to March). Active producers sell in average 9-13 latrines/ month (5-10 in low season and 10-15 in the high season). Among producers, about 20-30% fall inactivate in the low-season, and the

40% most successful ones account for 80% of the sales. The team evaluates the potential of existing and new suppliers on a rolling basis (rather than as a once-yearly process). In the process, it seeks to balance i) overall sales volume and ii) achieving full supplier geographical coverage. Since many remote areas offer little choice in terms of potential suppliers, WaterSHED will try support the less successful ones for some time.

For the producers, most sales are directly driven by the work of sales agents (see below), who trigger and/or close ~15 sales/ month, vs. 5-7 latrines sold to walk-in clients.

Marketing & sales strategy and organization

WaterSHED helps identify a network of promoters, including ~280 commune officials (often the dedicated WASH officer) who promote the latrines more or less actively, and ~270 village chiefs (who mostly do referrals, remind villagers about the importance of improved latrines, and facilitate the organization of community meetings).

The local officials are identified through meetings with provincial and district authorities, where WaterSHED presents the project and encourages officials to actively promote the product. Community meetings are the main avenue to sensitize the local population to the need for improved sanitation and sell the product (65% of sales are done through sales events, which leverage community dynamics and bring a shared sense of what should be the 'norm'). Typically, commune officials organize 4-8 community meetings a year.

Promotion materials are made available to other organizations on an open-source basis. Developed by professional marketers, they use real-life, provocative visuals explaining the dangers of open defecation and creating disgust with current practices. The last part of the presentation presents and promotes the product, highlighting its convenience and price (systematically lower than what the audience expects it would cost).

Promoters are trained by WaterSHED on how to conduct the presentation and the sale, during a 1 day training (together with the manufacturers), and 'on-the-job'. WaterSHED seeks to establish an active relationship between the suppliers and sales agents (typically 3-4 agents per producer). In addition, 65 public officials were invited to join the 'Civic Champions' project, a year-long training course whereby they are trained over 10 days and coached on the job to improve their leadership skills. Officials need to submit an application and pay a training fee of \$30. This program receives a lot of interest.

Installation

WaterSHED encourages the producer to offer a package to the consumers (latrine + installation) – even though only 32% actually do. The transport and installation is estimated to amount to ~5-10\$ of the total price. Where it is provided for, the installation is typically performed by a staff from the producer, together with the household men. Even though most prefer this solution, the installation is simple enough to be realized by the household himself.

The installation does not include pit digging, which is performed by the household or paid for (\$7.5 to \$10 per pit), if performed by a local laborer.

Cash/payment collection

Very few manufacturers offer installment payments (though many accept part of the payment to be done after a couple of weeks). Given that cash availability is a major issue for most would-be customers, WaterSHED negotiated partnerships with two local MFIs - Vision Fund and Kredit in December 2012. WaterSHED helps organize a direct relationship between the producers and these MFIs, and the former actually pay the MFI for some of their operational costs (set at 1\$/sale). The MFI staff either attends the sales event to register the loan applicants, or ask the village chief to establish a list, which is then verified by a loan officer. The village chief is also facilitating monthly cash payments collection by the loan officers. In this case, the MFIs remunerate them with 30% of the loan interest amount.

Usage and hygiene

WaterSHED works closely with the government to encourage latrine adoption and usage among potential consumers. Its marketing material focuses mostly on educating customers about the need for improved sanitation and provoking an emotional motivation for adoption. It also trains provincial staff in monitoring latrine usage, as it seeks to improve data collection on sanitation coverage.

Maintenance and cleaning

The latrines do not require any maintenance. Cleaning is done by the household.

Waste storage and collection

60% of customers purchase in 3 rings (single latrine), and 30% purchase 6 rings (double latrine), which line and help support the pit. The average pit depth is 1.5 m.

Waste treatment, disposal and recovery

Given the quality of the soil, pit latrines fill up slowly (7-10 years). When full, the owners typically manually empty the latrine themselves and spread the waste onto their fields.

Technology

Description of toilet-related technology

Key features:

- Cost: The toilet production is estimated to cost ~\$30-35.
- Design: The latrines include a squat pan and a slab which sits atop a chamber that is connected by pipe to an offset lined pit. The design was supported by IDEO. All elements are made of concrete. The slab is covered with ceramic tiles.
- Durability: 20 years.
- Water and energy efficiency: Pour-flush toilets (1.5-3 liters per flush).
- Malodors and safety: Malodor and safety issues are very limited, given the design of the slab and use of water
- Waste storage: Waste is stored in the pit. Given the nature of the soil, the rings are not cemented, and waste is slowly filtered in the ground.
- Waste collection: Most pit emptying is done manually by the owners. WaterSHED is exploring the possibility of developing a market for additional absorption pits (also lined with three rings) to be linked to the primary pit through a draining pipe.
- Potential and limitations: Most customers perceive that the latrine itself is only a part of the toilet, and invest considerable sums for a cement shelter, in addition to it. WaterSHED is exploring the possibility of developing low-cost, pre-fab shelters.

Social impact

- **Penetration:** Since January 2011, WaterSHED helped install 61k toilets, serving an estimated 290k persons in 3800 villages. Penetration ranges from 5 to 13%, which translates into average actual latrine coverage of 50-63%, if taking into account existing latrines penetration (estimated at 45-46% in 2013, with a natural growth rate of 1.8%). Penetration grows approximately 2-6%/year, depending on the province. Hence, 100% sanitation coverage could be attained in 3-10 years, if the program would be extended to all provinces. WaterSHED tracks sales events and actual sales, while the monitoring team verifies randomly delivery and installation.
- **Acceptance and usage:** Most households were not using latrines before the program (open defecation). Actual regular usage ranges from 95% for adults to 85% for children. During a 2012 study, WaterSHED found that 29% of purchased toilets had not yet been installed at the time of survey (mostly as households wait to build a shelter). 50% of those had purchased the core material over a year earlier, but 76% did not have the all materials they wanted to build the complete toilet, including the shelter.
- **Customer satisfaction:** According to WaterSHED latest consumer adoption study, 97% of customers are satisfied with their latrine and 74% recommended it. Improvement areas include: slow delivery (31%), product breakage during transport (23%), lack of installation service (16%), lack of credit facilities (10%).
- **Evidence of impact on health:** NA
- **Promotion of related behaviors:** In Cambodia, WaterSHED also started marketing commercially water filters and is planning to introduce a handwashing device (which is already introduced in Vietnam). However, it does not promote related WASH behaviors during its sanitation promotion events.
- **Waste collection and disposal strategy:** N/A

Economic sustainability

End consumers

- **Affordability for end users:** The price of the latrine is set by the supplier (on a "cost plus" basis). The average price observed is \$45-50, to which \$10-20 is added to dig the latrine and possibly help install it. The biggest expense though comes with building the shelter (>\$200), as 80% of families prefer a concrete one. In the areas where WaterSHED operates, the latrine price corresponds to 0.5-2 months cash income for a family. However, the perceived price (i.e. how much customers believe the latrine would cost) is much higher (most customers quote over \$100). Consumer household surveys confirmed that latrine adoption is directly linked with level of income (50% of purchasers are within the top 4th quartile, while 11% belong to the poorest quartile). When no credit solution is offered, >50% of clients have the cash at hand, and 27% saved the money. Interestingly, rural sanitation in Cambodia seems to be an 'all or nothing game'. Households hover between open defecation and improved sanitation (with a hard-built shelter). Very few households go for an intermediary step of 'unimproved sanitation'. About 80% of non-adopters prefer pour-flush, good looking latrines.
- **End consumer financing:** WaterSHED is partnering with two MFIs to offer payment plans to its end-consumers. Cumulative sales done through MFIs amount to 1952 latrines from January to November 2013 (the scheme being rolled out in 3 provinces, with 49 manufacturers). The MFIs provide 18-months loans for the latrine itself, with a 2.8% monthly interest rate, provided incremental operational costs would be paid for by the manufacturer (set at 1\$/sale). MFIs require a \$4.5 non-refundable down-payment from customers.

Upstream organization

- **Main organization:** WaterSHED does not generate any revenues for its organization. However, it deploys its grants cost-effectively (average program cost per latrine installed of \$18). It is currently exploring ways to evolve into a social business.
- **Non-staff agents:**
 - » *Latrine manufacturers:* WaterSHED provides them with training and business support. Manufacturers earn ~\$10 per latrine (20% margin). Given that most sold 2-3 latrines/month prior to the program, this represents an important source of income for many of them (\$100/month, or an estimated 20-30% of their net profit). Less active manufacturers (i.e. producing less than 12 latrines/month) are gradually phased out of the

program (60 of them in 2013, or 26% of all).

- » *Sales promoters*: Consisting mostly of local officials, they are incentivized through a small commission. Depending on whether they induce or close a sale, the promoters earn a commission ranging from \$1.25 to 2 (directly negotiated with the producer). Given that commune-level promoters sell in average 5-8 latrines/month, for ~1 day worked, this represents an interesting additional source of income (a commune-level official earns \$20-30).
- **Staff costs**: The field force mostly consists of 52 district-level 'Facilitation Specialists', who coach 3-4 manufacturers and 10-12 promoters each, help liaise with local authorities, and gather data. Recruited among university graduates, they earn \$100/month plus 10-30% bonus depending on sales performance (100 latrines installed/month), which is the basic salary NGOs pay at local level. To limit the disruptions linked to rather high turnover, WaterSHED introduced a 3-month probation period.

Innovations

- Sales agents and manufacturers in the lead: "off-hand approach" for enhanced sustainability
- Home-delivered, full sanitation solution, with transparent pricing and maximum convenience
- Commercial marketing tools (provocative, real-life examples). These materials are open source, and helped bring about more consistent and powerful sanitation campaigns (the material was adopted by 17 organizations in 6 countries).

Remaining hurdles and bottlenecks

- Most households prefer a concrete shelter for their toilet, but these are way more expensive than the latrine itself (over \$200). As a result, households often wait to be able to afford the shelter before installing the latrine, to avoid constructing a temporary shelter they'd have to destroy. WaterSHED is planning to work on a low-cost, hard-built shelter
- While pits take longer to fill up in Cambodia, it is expected there will be a wave of overfilled latrines in a couple of years from now. The installation of an overflow pit seems to be the most practical and economical solution to avoiding emptying it manually. WaterSHED is looking into the possibility of promoting it in the coming future
- WaterSHED adopts a hands-off approach to the development of local supply chains. It is still exploring however, when is the 'tipping point' beyond which the market does not need to be facilitated anymore and latrines would become 'mainstream' products.

Contact information

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Appendix

Sources: www.sanitationupdates.files.wordpress.com/2009/10/watershed-latrines.pdf; www.sanitationmarketing.com/_blog/Sanitation_Marketing_Blog/post/WaterSHED_in_Cambodia_-_a_hands-off_approach_to_SanMark/; www.watershedasia.org

Exchange rate: 1 USD = 4000 KHR
