



CASE STUDY

PSI India: Strengthening Markets for Sanitation

India is home to the world's largest population of people who defecate in the open, some half a billion people. Poor sanitation, hygiene, and lack of safe water contribute to more than 450,000 child deaths from diarrhea in India each year and to 38% of the global disease burden of stunting. The Government of India (GOI) is making large investments and progress in sanitation through the Swachh Bharat Mission (SBM).

The SBM incentive program is rightly targeted at the ultra-poor. However, this leaves a missing middle: those who are poor but have some financial resources. These families, estimated in the tens of millions, need high-quality products and services from local private market actors, enabled by increased access to financial services for consumers and enterprises. To ensure that the demands of a growing and mobile population continue to be met over time, strong and adaptable market systems must be developed.



BACKGROUND

With funding from the Bill and Melinda Gates Foundation (BMGF), PSI launched the Supporting Sustainable Sanitation Improvements (3SI) project in Bihar, India in 2012. Together with partners Monitor Deloitte, Water For People and PATH, the project set out to understand why the sanitation market in Bihar was failing to serve more customers. The study found specific market barriers related to sanitation products, the supply chain, and the enabling environment for market actors.

On the demand side, the study found that 85% of consumers without a toilet expressed a desire to own one but that the quality they desired was not available in the price range they could afford. Open defecation was an accepted social norm in many communities, and while families wanted a toilet, they ranked it low in their hierarchy of needs.

On the supply side, input suppliers, like cement ring manufacturers, had some incentives to work in sanitation, such as decent margins and low capital investment cost. However, the perceived market size for toilets was small compared to other cement products, and there was a lack of skilled labor for manufacturing the rings and installing the final product. Moreover, there was poor coordination between the more than 20 different sanitation actors identified in the study, many of whom believed they could find more profitable opportunities in sectors other than sanitation.

Another key insight was that financial inclusion, and the penetration of micro-finance institutions (MFIs) that could provide both consumer and enterprise sanitation loans in Bihar, were limited. Fewer than 3% of households in Bihar had accessed loans of any type from an MFI. Also, while households had some ability to pay, only 6 to 8% of the population were able to pay for entire cost of the toilet up front.

In summary, a combination of a limited product offering and underperformance and poor coordination of key market players, such as cement manufacturers and MFIs, resulted in a near absence of a sanitation market. As a result, consumers who had competing needs for their limited financial resources opted to continue practicing open defecation.

FIXING THE MARKET

PSI India believed that consumer and provider behavior change was possible and households could have the quality sanitation they desired. They envisioned a Bihar where:

- Consumers could pay cash for toilets they found desirable and wanted to use
- Finance was available for consumers to purchase toilets and for small enterprises to start and expand their businesses
- Local enterprises could confidently install high quality functioning toilets within two weeks
- Government of India could help generate demand and support the ultra-poor with incentives for toilet purchase where needed

PSI India has taken on multiple roles throughout the life of the project to address the many market barriers. These roles have been a mix of market facilitation, such as bringing in new partners and encouraging them to buy into the market, and direct engagement, such as quality control support, training the workforce, and incentivizing the sales force. The program sought to demonstrate a market development model that could work in Bihar and influence sanitation policy, practice and funding across India.

Four Key Market Barriers

- 1 Absence of affordable, desirable toilet technologies
- 2 Fragmented supply chain
- 3 Lack of access to finance
- 4 Consumer behavior

THE RESULTS

For nearly five years, the program has been addressing key constraints related to supply chain, finance, and consumer demand. Through continuous learning and iteration on the approach to address market constraints, the project now works across 19 districts in Bihar, with more than 700 small-enterprises. To date, these enterprises have built and installed high-quality twin pit toilets in 195,056 rural households (and counting), 45% of which live below the poverty line. Among the consumers, 32,555 received loans to support toilet purchase. On the sanitation business operations side, 261 enterprise loans have been acquired. Achieving these results required progress and success in strengthening many pieces of the market.

>195,000 TOILETS SOLD
> 32,500 LOANS DISPURSED

Supply Side and Product Gap

PSI continually analyzes the supply chain and seeks to improve efficiencies. At the beginning of the program, the retail cost of a toilet was over \$400. PSI and partners PATH and Water For People used human centered design to not only improve desirability, such as introducing privacy shelves for the storage of menstrual hygiene products and allowing more light to enter the toilet, but also to drastically reduce the price to \$225 by finding ways to reduce labor costs during the construction process. For example, cement rings replaced brick lined pits, and prefabricated roofs and doors replaced bespoke roofs and doors. This not only reduced the cost to consumer but also reduced the average time from purchase to construction from 90 days to a current average of 13 days. PSI also supported increased linkages between different value chain actors, which helped lower prices for input materials and increase margins for the cement ring manufactures.

PSI also took on a business development support role. Most of the 700+ cement ring manufacturers are small and informal and did not keep basic business records, thereby making them ineligible for loans. Furthermore, they did not know how to control quality and needed linkages with other market players such as masons, sales agents, retailers, and MFIs to increase toilet sales. PSI coached and mentored these businesses to improve their performance with the assurance of potential to increase profit through more sales. PSI also played a direct role to support the sales process by training and incentivizing over 800 community sales agents. Lastly, over time as sales increased, PSI supported enterprises to develop basic record keeping and management processes that enabled businesses to qualify for loans from MFIs.



Prospective consumers learn about the toilet installation process in Bihar. Photo credit: Kiran Thejaswi

Finance

With seed capital of \$1.2 million from BMGF and Unilever, PSI facilitated development of a revolving sanitation fund within Friends of Woman's World Banking (FWWB). As the fund manager, FWWB signs agreements and lends, using its standard practices, to MFIs that on-lend to both consumers and enterprises. PSI India educated interested MFIs about the sanitation sector and helped to train MFI staff. The success attained through the initial fund investment has led to additional MFIs engaging in the sanitation sector, some of which are now using commercial funds to expand their reach in sanitation lending. To date, the initial fund investment of \$1.2 million has resulted in \$4.5 million in sanitation loans disbursed.

Consumer Behavior

To influence social norms related to open defecation, PSI India sought to address underlying beliefs and attitudes that using a toilet is not necessary. Sales messaging and communications materials focus on creating a dignified Indian family, in which everyone uses the toilet. PSI India has found that 92% of households that purchased toilets from project-supported enterprises are consistently using the toilet (defined as at least two members of the household used sanitation every time in the last three occasions).

Monitoring

To ensure effective programming and routine use of data to strengthen the project's approach, PSI India developed a robust MIS system that can be replicated using open source software. The project tracks indicators such as quality of construction, time-to-deliver, and environmental impact to guarantee results and sustainability. The system includes an outgoing helpline which calls customers (621 households randomly selected per month) to validate sales of toilets, to ask about status of installation, and to convey key health messages. Program staff also conduct spot checks to enterprises and households during and after installation to verify critical quality indicators, including toilet distance to water source, seal cap on twin pit in place, T Junction installed correctly, depth of pit up to 5 feet, doors opening outwards, ventilator installed, and use of Schmidt Hammer Tool to check ring strength.

Government Engagement

PSI believes one key to the project's success has been PSI India's coordination with the state government and district and village authorities to align supply side strengthening with Government of India initiatives to create open defecation free communities. This coordination helps build a market for new sanitation enterprises and allows monitoring of products and services to ensure quality and environmental safety.



*A new toilet is installed in Bihar.
Photo credit: Kiran Thejaswi*

DEVELOPING A SUSTAINABLE SANITATION MARKET

With significant progress made to date, PSI India is committed to continuing to learn and iterate to ensure sustainability of the gains made thus far, test options for replicating the approach at larger scale in new and diverse geographies, and support government and private-sector actors to collaborate in developing a self-sustaining market that can grow and adapt, ultimately without external assistance and funds. Critical determinants of sustainability include successful sales and marketing models, access to government incentive and private finance, government leadership, and risk taking by the private sector.

Thus far, PSI India has supported marketing and sales through project funds, with a mix of direct salary payments and sales-based commissions. While these investments were necessary in a nascent market such as Bihar's sanitation market, there is now clear evidence of consumer demand for the existing toilet product, as well as sanitation businesses that are capable of investing in their own sales and marketing. In the coming months, PSI India will be testing various approaches to transition sales and marketing expenses to private actors, with the hope of developing a transition model that can be applied in new geographies.

The amount of capital available for sanitation financing will be a determining factor in the market's ability to grow and reach new consumers. PSI's experience shows there is an appetite for sanitation loan products from both consumers and enterprises. Continuing to grow and expand the financial services sector will become even more

critical as the SBM evolves and continues to better target the incentive at the most poor. PSI has learned that many consumers are willing to purchase a toilet without a government incentive if a sanitation product that they value is offered at a reasonable price and a loan product is offered. In fact, only about 5% of the project's current customers have received the SBM incentive. To meet demand, the financial sector will need to expand their sanitation loan offerings and raise additional private capital to invest in sanitation. For the poorest consumers, an improved incentive disbursement mechanism could help further market development and achievement of sanitation targets.

Replication and continued strengthening of the market development model will largely rely on government actors to provide a supportive enabling environment, including policies that encourage private sector investment and engagement with communities to drive demand. Scaling up will also require private-sector players with a vision to see the potential opportunity and the willingness to invest time and resources in growing sanitation businesses. In new geographies, external actors, such as PSI India, will likely be required to play a facilitation role to trigger these investments and drive demand for quick results, while continuing to push for an exit strategy. PSI India is working to demonstrate the evidence and success from Bihar and is well positioned to share lessons learned with national and local actors.



A family enjoys their newly constructed toilet in Bihar. Photo credit: Kiran Thejaswi



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