

Report No: ACS13192

# Republic of Indonesia

## Rural Sanitation Market Expansion of Domestic Private Sector in Indonesia

April 16, 2015

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EAST ASIA AND PACIFIC



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## Abbreviation and Terms

CLTS	Community Led Total Sanitation (CLTS) is an innovative methodology for mobilizing communities to completely eliminate open defecation (OD). Communities are facilitated to conduct their own appraisal and analysis of open defecation (OD) and take their own action to become ODF (open defecation free) <sup>1</sup>
Improved Sanitation Facilities	An improved sanitation facility is defined as one that hygienically separates human excreta from human contact <sup>2</sup>
MoH	Ministry of Health
OD	Open Defecation is any form of defecation that does not ensure the separation of excreta from human contact
ODF	Open Defecation Free is the condition when all individual within one defined community stop practicing open defecation
PAMSIMAS <sup>3</sup>	PAMSIMAS (Third Water Supply and Sanitation for Low Income Communities) is the Indonesian Government's national program to deliver water supply, sanitation and improved hygiene practice to rural and peri-urban areas. PAMSIMAS works with communities to plan, finance, manage and maintain their own water supply and sanitation systems and improve hygiene behaviors. <sup>4</sup>
Sanitation Marketing	Activities to reach customers and persuade them to buy and use sanitation products or services. Application of social marketing practices to scale up the demand and supply for improved sanitation, particularly among the poor.
STBM	<i>Sanitasi Total Berbasis Masyarakat</i> or Government's Policy for Community-Based Total Sanitation
TSSM	Total Sanitation and Sanitation Marketing – three strands; CLTS to generate demand, sanitation marketing to reinforce demand generation and increase supply of sanitation goods and services, and strategies to strengthen the government's enabling environment <sup>5</sup> .
WSLIC	Water & Sanitation for Low Income Communities Project, WSLIC-1 (1994-99) and (WSLIC-2) (2003-2007) projects supported by the World Bank. WSLIC 2 operated in seven provinces and aimed to provide water supply, improved health and hygiene behavior, and community development, to about 2,500 communities.
WSP	The Water and Sanitation Program (WSP) is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe and sustainable access to water and sanitation services

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<sup>1</sup> <http://www.communityledtotalsanitation.org/page/clts-approach>

<sup>2</sup> WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, <http://www.wssinfo.org/definitions-methods/>

<sup>3</sup> [http://new.pamsimas.org/index.php?option=com\\_k2&view=item&layout=item&id=15&Itemid=129](http://new.pamsimas.org/index.php?option=com_k2&view=item&layout=item&id=15&Itemid=129)

<sup>4</sup> <http://aid.dfat.gov.au/countries/eastasia/indonesia/Pages/economic-growth-init4.aspx>

<sup>5</sup> <http://www.wsp.org/sites/wsp.org/files/publications/WSP-Indonesia-Sanitation-Impact-Evaluation-Field-Note.pdf>

## **Overview of Technical Assistance (P143167)**

### **Rural Sanitation Market Expansion of Domestic Private Sector in Indonesia**

This report is a synthesis of fieldwork findings and recommendations developed since October 2012 under this Technical Assistance (TA) carried out by the World Bank's Water and Sanitation Program (WSP). The recommendations have been developed through on-going consultations and meetings with the Directorate of Environmental Sanitation and Directorate General of Human Settlements, Ministry of Health, Government of Indonesia.

Other materials available to the client under the TA include:

- Standard Operating Procedure (SOP) of One-stop Shop Sanitation Business Model
- SOP Assessment of APPSANI Member
- Facilitation Manual of Sanitation Entrepreneurship Training
- Training Modules of Sanitation Entrepreneurship Training
- Study report on Women in Rural Sanitation
- One-stop Shop Sanitation Business Franchise Brand Book
- APPSANI business process mobile application platform and web-based dashboard
- Study report on Applying Value Engineering to the Development of an Economic and Hygienic Latrine Design (Case Study: Sanitation Entrepreneurs in East Java)
- Presentation deck and Infographic on Opportunity for Microfinance Institutions in Indonesia's Rural Sanitation Market

## Executive Summary

This report describes and assesses the performance of technical assistance TA-P143167, “Rural Sanitation Market Expansion of Domestic Private Sector in Indonesia,” provided by the World Bank through the Water and Sanitation Program (WSP) carried out from October 2, 2012 to March 31, 2015 to support the development of a rural sanitation market in Indonesia. This technical assistance (TA) was implemented as part of a larger effort to assist the Government of Indonesia achieve at-scale results in rural sanitation through its National Strategy for Community-Based Total Sanitation (*Sanitasi Total Berbasis Masyarakat - STBM*).

### Background

Ranked second in the world for number of open defecators, Indonesia’s poor sanitation costs the country an estimated USD 6.3 billion in lost revenues each year, equivalent to about 2.3% of annual GDP. Nearly 31% of the rural population – 37 million people - practice open defecation, and an additional 24% use unimproved facilities. Given this massive public health challenge, the Government of Indonesia recognized the need for innovative, scalable solutions.

Community-Led Total Sanitation (CLTS), a structured method of behavior change to shift community attitudes around open defecation, was adopted as the primary national approach to scaling up rural sanitation after successful pilots in 2005. Taking it a step further, in 2008 the Indonesian Ministry of Health launched the National Strategy for Community-Based Total Sanitation (STBM), an approach that combines CLTS with efforts to increase the ability of the market to provide sanitation products and services and strengthen the enabling environment for implementation.

STBM marked a significant departure from previous publicly-funded toilet construction programs in Indonesia. Not only did it recognize the power of local communities to take collective action to stop open defecation, it also explicitly identified a role for the local private sector in meeting the increased demand for affordable, desirable sanitation products and services following CLTS.

### TA Objectives and Results

The development objective of this TA was to strengthen the ability of the local private sector in five project provinces by increasing the number of firms working in rural sanitation and helping strengthen their capacity.

The TA worked with the local private sector to refine the one-stop shop business model previously introduced. Traditionally, households interested in purchasing a toilet needed to design the structures themselves, source the raw materials and hire and supervise masons – an expensive and time-consuming process. The one-stop shop business model offers customers with a range of affordable, desirable sanitation solutions delivered by one-stop-shop sanitation enterprises. It provides households a complete turnkey solution, including home delivery of all building materials, on-site construction services, and flexible payment options.

The TA also supported the development and evolution of an industry association of sanitation enterprises called APPSANI (in Indonesian, *Asosiasi Pengelola dan Pemberdayaan Sanitasi Indonesia*) to

support the Government of Indonesia with replication and development of these enterprises within the context of National Strategy for STBM

The TA introduced a number of new innovations that have led to significant increases in access to improved sanitation in Indonesia, in addition to providing valuable learning on developing sanitation firms that can be applied in other countries. Specific innovations tested included:

- The use of fiberglass molds and new concrete casting techniques to mold concrete septic tank rings, reducing costs and simplifying the installation procedure
- Working with banks and microfinance institutions to develop new loan products for purchasing improved sanitation, helping households afford this purchase by spreading the cost over time
- Shift to a more integrated and flexible approach on 'sequencing' of product promotion by the enterprise and CLTS triggering event by district health staff to better coordinate supply-side and demand-side interventions

By the end of the TA, 25 training events were held for 1,026 participants. 194 APPSANI-supported entrepreneurs built 47,715 toilets in the five project provinces, representing an investment of USD four million by households in improved sanitation.

While a fully randomized impact evaluation of the TA was not possible, it was possible to conduct a quasi-experimental evaluation using statistical techniques to compare villages with and without a sanitation firm. The analysis found that villages with both CLTS triggering and a sanitation firm active in the village had rates of improved sanitation coverage (60% as of November 2014) five percentage points higher than villages with only CLTS triggering (55% as of November 2014). The analysis also found that CLTS villages have improved sanitation coverage rates (as of November 2014) 5 percentage points higher than villages that have not had CLTS triggering activities, a finding in line with impact evaluations previously conducted. The results achieved through the TA provide evidence that STBM's approach of combining CLTS with market-based approaches is a more effective way of improving access to improved sanitation.

### **Lessons Learned**

The results of this TA, along with WSP's emerging learning from similar TA in other countries, suggest that engaging the private sector can help in expanding access to rural sanitation in Indonesia. Lessons learned during implementation will help guide future work in this area, and can inform the design of sanitation markets programs in other countries as well:

***There are no short cuts in sanitation entrepreneur and business model development.*** A markets-based approach to rural sanitation may initially take more time to establish a foundation for scale, but the TA has shown that once the demand and supply-side constraints have been addressed there is much greater potential for scale and long-term sustainability.

***It can be challenging to find entrepreneurs willing and able to sell sanitation.*** In the early stages of the TA, training tended to attract many district health workers who were familiar with the topic of sanitation. However, these health workers often had other commitments and did not have the entrepreneurial drive often found in successful business-owners. APPSANI now encourages a much broader range of potential businesses.

**Franchising and sales territories can help build scale.** To grow their sales, enterprises must expand into other villages or sub-districts, implying increased travel time and cost. Because most entrepreneurs spend only about one-third of their time managing their sanitation businesses, they may not have sufficient resources or interest to manage large numbers of installations simultaneously. In light of these challenges, APPSANI and its members began a pilot to explore the opportunity for changes to the business model. APPSANI utilizes a mobile app and IT platform: Centralized order taking is enabled by the use of a mobile app. The mobile app enables the enterprises to better track costs and revenues, and to monitor the performance of the sales agents.

**Industry associations evolve slowly.** The formation and growth of APPSANI did not happen overnight. The initial concept grew slowly out of discussions among enterprises themselves, after they had practical experience running one-stop-shops. The key to APPSANI's membership growth so far has been the fact that its services address specific member needs. Members have identified access to finance, business support and government linkages as the main reasons why they chose to join APPSANI. Services themselves have come on-line over time, usually by piloting with a small group of members before expanding to the entire network. This approach to service roll-out has allowed for progressive learning among APPSANI staff and members, and step-by-step improvements to service provision. While external facilitation support by WSP and others had a role to play, the process and evolution of APPSANI demonstrates that industry development can be facilitated but does not happen in a directed, top-down approach.

**Relationships between entrepreneurs and local health officers are critical.** One-stop-shop entrepreneurs report the most success when they build close working relationships with government health staff and link their sales efforts to broader CLTS and demand promotion activities. One of the critical barriers for sanitation entrepreneurs is the conversion of potential demand to real consumer demand; that is, from a generally felt need to stop open defecation, to the actual purchase an improved latrine product. The investment required to change sanitation behaviors and establish new social norms is significant, and it may not be realistic to expect that the private sector alone can fully bear this cost. In focus groups conducted in 2012, enterprises with the highest volumes of sales identified partnerships with sanitarians, district health center staff, health workers, and village heads as the most important contributing factors to their success.

**The learning and experience from East Java point to the critical role the local private sector can play in both achieving and sustaining open defecation free communities.** The initial program logic assumed that households within triggered communities would climb a 'sanitation ladder' from very low cost, homegrown innovations inspired by the community triggering process, to increasing levels of service as communities seek to maintain their ODF status over time. This logic implies that CLTS triggering should therefore happen first, followed by other efforts that emphasize the available sanitation facilities. In fact, the market research clearly identified specific sanitation product preferences and perceptions that exist across the population, even before triggering. Households did not simply change their dissatisfaction with 'basic' lower-cost dry pit latrines, and in many cases opted to jump directly to the desired pour-flush latrine types or delay construction until they could afford this option. These findings among households led the program to shift to a more integrated and flexible approach, in which one-stop-shop enterprises are present at triggering events and able to introduce available products and services at the post-triggering stage, and to follow up with potential customers afterwards.

***Beginning program supply-side strengthening activities before CLTS can help build momentum, government buy-in and enterprise capacity so that demand generation activities can have the most impact.*** The strategic decision to kick-off new provincial activities with the enterprise training and exposure visit was taken for two primary reasons. The evidence and experience from East Java indicated that developing private sector capacity can take time, and that it is most effective to begin this process as early as possible so that adequate supply is available to meet the consumer demand unlocked by CLTS and behavior change activities. Thus, one important goal and expected outcome was for the two or three enterprises from each province to go back to their homes and set up pioneer one-stop-shop enterprises straight away. These pioneers could then be the provincial-level proof of concepts, leaders and examples to other potential enterprises at provincial level.

***Mapping the expected roles and capacities of different stakeholders is essential to the process of strengthening rural sanitation markets.*** In Indonesia, provincial and district governments make funding decisions for the majority of health activities. Health authorities have many competing priorities and only limited funds. The national team at the STBM Secretariat has worked with the provincial governors and health coordinators to make sure that the STBM is a line item in every budget. The easier it is for local government to understand the entire STBM concept, the more likely they will be to develop concrete tasks, steps, and roles that can be used as the basis for budgeting and planning. Once the overall concept is clear, however, most local health authorities can see the benefits of working with the private sector. When households that can afford to pay invest in their own sanitation facility, the government can more effectively target support to those most in need.

***Facilitating collaboration between one-stop shop enterprises with potential finance institutions is crucial in providing consumer with credit to purchase toilet.*** Low awareness of potential finance institutions and their limited availability of low-cost of finance has hindered them to expand their services in sanitation consumer financing. In collaboration with Water.org, the TA provided a more systematic support and technical assistance to build their interest and enable them to develop consumer financing product. In most of the cases, facilitation between enterprises with potential FI partner was crucial to be provided in which case APPSANI played crucial rule in the process.

## **Recommendations**

The lessons learned through this TA provide guidance on next steps for APPSANI, WSP and the Government of Indonesia.

***Increase the number of trainees who become entrepreneurs.*** Approximately one-fifth of the participants in one-stop shop training elected to start a sanitation business. Ensuring that the quality of training is consistent across venues, while also providing post-training mentoring support from existing entrepreneurs can improve this ratio. The market timing is also important – trainings should be sequenced with CLTS activities to ensure that there is sufficient demand for the newly-trained entrepreneurs.

***Continue to test the APPSANI social franchise model.*** By standardizing services and centralizing some core business functions, APPSANI can move towards a new social franchise model that generates operating efficiencies over a larger service area. Standardization has been a key element of this evolution, since it enables APPSANI to build its brand through more consistent quality in product and service delivery. At present, however, it is still unclear how much enterprises will be willing to pay for

these benefits, for instance, through franchise fees. Even if this new model cannot achieve full financial sustainability at first, compared to the current industry association the social franchise may be more scalable due to its improved operating efficiencies.

***Continue to build local government support for STBM.*** Budgeting and planning cycles and bureaucratic processes differ from one local government to another. Annual planning and mid-year budget revisions do not always happen as planned, and this affects local government ability to execute its CLTS, promotions, and training plans. In addition, high turn-over and staff rotation within the line agencies means institutional knowledge is frequently lost.

## Main Report

### 1. Background: Scaling Up Rural Sanitation in Indonesia

#### 1.1 Indonesian Community-Based Total Sanitation Strategy (*Sanitasi Total Berbasis Masyarakat* or STBM)

Ranked second in the world for number of open defecators, Indonesia's poor sanitation costs the country an estimated USD 6.3 billion in lost revenues each year, equivalent to about 2.3% of annual GDP.<sup>6</sup> Nearly 31% of the rural population – 37 million people - practice open defecation, and an additional 24% use unimproved facilities. Given the scale of the sanitation problem, the Government of Indonesia recognized the need for innovative at-scale solutions.

The Community-Led Total Sanitation (CLTS)<sup>7</sup> approach was adopted as the primary national approach to scaling up rural sanitation after successful pilots in 2005. Taking it a step further, in 2008 the Indonesian Ministry of Health launched the National Strategy for Community-Based Total Sanitation (STBM), an approach that combines CLTS with market-based approaches and behavior change communications in order to 1) sustain behavior change and create community demand, 2) increase market supply of sanitation products and services, and 3) strengthen the enabling environment for implementation.

The STBM marked a significant departure from previous publicly-funded toilet construction programs in Indonesia. Not only did it recognize the power of local communities to take collective action to stop open defecation, it also explicitly identified a role for the local private sector in delivering affordable, desirable sanitation products and services to rural consumers. While conceptually it seemed straightforward to bring together community-based and market-based approaches, in practice a great deal of learning-by-doing was required: While CLTS was gradually institutionalized within the Ministry of Health and provincial, district and local line agencies, these agencies were less familiar with how to engage the private sector at scale. New types of public-private partnerships required substantial changes to how government agencies operated and conceived of their roles. At about the same time, relationships and implementation arrangements within the government were being shaped by the broader decentralization of governance in Indonesia. Local governments needed the capacity and the political will to provide financial and human resources for sanitation implementation. Simultaneous learning about how to implement a range of approaches in a decentralized way created both opportunities and challenges to at-scale implementation.

#### 1.2 Pilot Implementation of STBM through a Global Learning Program Implemented in East Java Province as Total Sanitation and Sanitation Marketing Project

To demonstrate at-scale implementation of STBM, the Ministry of Health and the East Java Provincial Government, with technical assistance from the World Bank's Water and Sanitation Program (WSP),

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<sup>6</sup> WSP, 2008. Economic Impacts of Sanitation in Indonesia: A Five country study under the Economics of Sanitation Initiative (ESI), Research Report.

<sup>7</sup> Community-led Total Sanitation (CLTS) is a methodology for mobilizing communities to completely eliminate open defecation. Communities are facilitated to conduct their own appraisal and analysis of open defecation and focuses discussions on the behavioral change needed to ensure sustainable improvements. By raising awareness that as long as even a minority continues to defecate in the open everyone is at risk of disease, CLTS triggers the community's desire for collective change, propels people into action and take their own action to become open defecation free.

launched the Scaling-Up Rural Sanitation program, a global learning initiative on how sanitation programs can be designed and implemented at scale.

The global program is based on a theory of change developed by WSP that connects strengthening sanitation supply with behavior change and demand creation for sanitation, rooted in an enabling environment that allows a programmatic approach at-scale. Demand creation – through approaches such as CLTS and Behavior Change Communications (BCCs) – combined with sanitation marketing efforts focus on getting communities to stop open defecation and aims to convince households to purchase, build, and use improved latrines.

The pilot of the global program implemented in East Java was called Total Sanitation and Sanitation Marketing, or TSSM, Project.<sup>8</sup> It began as a learning project across all 29 districts of rural East Java, combining CLTS, behavior change communication, and sanitation marketing approaches. With regard to market development, the underlying hypothesis of the project is that, to capture the full benefits of sanitation, it is not enough that communities become open defecation-free (ODF). Benefits can be better sustained where access is to an improved sanitation facility through the availability of products from local entrepreneurs.<sup>9</sup>

When the TSSM project began, East Java had a population of about 37.4 million people, including 20 percent of Indonesia’s poor, and rural improved sanitation coverage was just at 38%.<sup>10</sup> Across the province, the 8 million households lacking access to improved sanitation had an estimated market value of around USD 323 million.<sup>11</sup>

As at-scale CLTS triggering got underway, the program used formative market research to segment the rural market into two broad groups. For the first market segment of open defecators (comprising 40% of the market), the aim was to change open defecation behavior by implementing CLTS reinforced with other key behavior change messages. For the second segment of unimproved and semi-permanent/temporary latrine owners (comprising 15% of the market), the focus was to stimulate household investment in upgrading from a basic facility to an improved latrine with consumer-driven product features.

The implementation of TSSM showed that while demand for improved toilets exists in villages that have undergone demand creation through CLTS, suppliers were not ready to offer rural households product options that meet their aspirations and budgets.

To address this, TSSM initially focused on training masons and staff of district health centers (‘sanitarians’) to offer more affordable, better quality construction services. About 1,700 masons and health staff were trained and, in some districts, encouraged to use the “WC-ku sehat” (“My Latrine is Hygienic”) logo in their marketing materials.

While some of these masons did go on to offer new, more affordable sanitation services, the vast

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<sup>8</sup> The initiative was initially part of the 2008-2012 multi-country WSP Total Sanitation and Sanitation Marketing (TSSM) Program, supported by the Bill and Melinda Gates Foundation.

<sup>9</sup> WSP. Kullman, Craig, et al. WSP, World Bank. *Long Term Sustainability of Improved Sanitation in Rural Bangladesh*, 2011

<sup>10</sup> N. Mukherjee, 2011. Factors Associated with Achieving and Sustaining Open Defecation Free Communities: Learning from East Java, WSP Brief. Note, currency given at 2011 exchange rate.

<sup>11</sup> S. Giltner and A. Surianingrat, 2010, Sanitation in Indonesia: A Market Assessment.

majority - more than 97 percent - were found to be inactive or not using their new skills for sanitation.<sup>12</sup> Masons gaining new skills from the training tended to move to the cities to serve a more profitable market, rather than staying in their villages. Challenges with the process and criteria for mason selection and other implementation difficulties contributed to this low rate of trained and active masons.<sup>13</sup>

Masons had little capital, few business skills, and low profit potential due to their limited geographic reach. They were unable to offer value added services such as pre-purchase consultation and home delivery of latrine materials, and lacked the capacity to keep up with new CLTS-generated demand, resulting in backlogs of latrine orders. Commonly, triggered households were simply unaware of where or how to purchase affordable, quality latrines because the linkage between government-led demand promotion and local masons was weak.

## 2. Technical Assistance Objectives and Results

### 2.1 Objective of the Technical Assistance

The development objective of this technical assistance is to increase rural market reach by rural sanitation entrepreneurs in 5 (five) provinces by 1) increasing the number of sanitation entrepreneurs competent in undertaking a one-stop-shop sanitation business, and 2) strengthening capacity of these entrepreneurs and facilitating networking with potential private organizations to accelerate expansion. Both objectives address two main challenges in rural sanitation market development. Increasing the number of sanitation entrepreneurs competent in undertaking a one-stop-shop sanitation business will provide access to affordable sanitation products to a wider market. While strengthening the capacity of these entrepreneurs and facilitating their networking with potential private organizations will add value of their services delivered to customers.

### 2.2 Summary of TA Results

The TA worked with the local private sector to refine the one-stop shop business model introduced during TSSM project and its delivery model through enterprise to customers. One-stop shop business model offers customers with a range of affordable, desirable sanitation solutions delivered by one-stop-shop sanitation enterprises. It provides households a complete turnkey solution, including home delivery of all building materials, on-site construction services, and flexible payment options. The TA also supported the development and evolution of an industry association of sanitation enterprises called APPSANI, or in Indonesian, *Asosiasi Pengelola dan Pemberdayaan Sanitasi Indonesia*<sup>14</sup> to support the Government of Indonesia with replication and development of these enterprises within the context of National Strategy for Community-Based Total Sanitation (*Sanitasi Total Berbasis Masyarakat - STBM*).

Intermediate Outcomes	Indicators Proposed in PCN	Results Achieved
Government capacity and knowledge on sanitation	- Monitoring capacity of trained entrepreneurs	- Number of training funded by LGs (local governments) in 5 provinces: 25 training

<sup>12</sup> E. Perez, 2012. What Does It Take to Scale Up Rural Sanitation? WSP Working Paper.

<sup>13</sup> The Learning Note 'Sanitation Market Transformation in Indonesia: Working at Scale' explores at-scale implementation in more detail.

<sup>14</sup> The Learning Notes 'Sanitation Market Transformation in Indonesia: Designing Viable Business Models' and 'Sanitation Market Transformation in Indonesia: From Business Support to Industry Growth' describe the one-stop-shop model and broader industry evolution.

supply activities has increased	performance increased	<p>events with 1,026 participants</p> <ul style="list-style-type: none"> <li>- Number of training funded by LGs outside 5 provinces: 14 training events with 243 participants, and 3 trainings with 74 participants from other non-government organizations</li> <li>- Data on active entrepreneurs available in East Java province; available with close assistance from project consultants in the other 4 provinces health office (East Java, Central Java, Bali, NTB)</li> </ul>
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Remarks: This particular indicator is to gauge government monitoring capacity related to sanitation supply. This was measured in two ways:

1. Government investment to fund the trainings. This is to show government awareness of the importance of and interest in developing local enterprises to better respond to the demand generated from their demand generation activities, and
2. The availability of data at health offices on number of enterprises and their performance. This shows government level of ownership to the supply strengthening approach as one key component in STBM program. The information generated from this monitoring process will feed into their annual planning whether to invest more in training or in facilitating networking with other industry players, for example.

Other than its organic resources available at health offices, local government investment to this approach was mainly to fund entrepreneurship training events. There were 25 training events involving 1026 participants were conducted during the project implementation. The cost structure for one training event was covered around 30% by the TA for resources person fee and transportation, and 70% by the government for venue, equipment, tools, and participants' accommodation.

OS3 (One Stop Shop Sanitation) entrepreneurs are improving their operations	<ul style="list-style-type: none"> <li>- Volume of sales in unit of toilets constructed and amount in USD from existing and new OS3 entrepreneurs</li> <li>- OS3 entrepreneurs consistently prepare financial records</li> </ul>	<ul style="list-style-type: none"> <li>- Toilet constructed in 5 project provinces: 47,715 units, representing total sales of USD 4 Million by 194 entrepreneurs</li> <li>- Toilet constructed outside 5 provinces including PAMSIMAS: 2,335 units, representing total sales of USD 197 thousand by 71 entrepreneurs</li> <li>- Financial record practices still limited among entrepreneurs despite 2 business skill workshops and several coaching sessions conducted (less than 35%). An initiative using mobile application platform is now undergoing to assist entrepreneurs with their financial record</li> </ul>
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Remarks: The volume of units sold measured in this TA resulted from enterprises operating the one-stop shop business model. The project compare the market uptake of one-stop shop business enterprise with current market mechanism in terms of the impact it had on improving sanitation access. To find out whether there is a positive relationship between the presence of one-stop-shop entrepreneurs and access to sanitation in the communities where they work, a comparison by propensity score matching villages from 3 provinces (East Java, Bali and West Nusa Tenggara) was conducted. The analysis found that villages with both CLTS "triggering" and a

sanitation firm active in the village had rates of improved sanitation coverage (60% as of November 2014) five percentage points higher than villages with only CLTS triggering (55% as of November 2014).																																															
A sanitation business association such as APPSANI has strengthened capacity to expand market coverage	<ul style="list-style-type: none"> <li>- Support to entrepreneurship training or workshop events facilitated by governments or other organizations to replicate OS3 entrepreneurs provided</li> <li>- Investments using any source of finance (personal funds, equity and debt) has increased</li> </ul>	<ul style="list-style-type: none"> <li>- Number of qualified trainers within APPSANI: 19 trainers; with 42 training events supported including 3 trainings from other non-government organizations</li> <li>- Amount invested by entrepreneurs member of APPSANI: USD 252 thousand, with half from entrepreneurs' personal funds</li> </ul>																																													
<p><u>Remarks:</u> In the effort to improving enterprises operations, the TA also monitors enterprises' financial performance indicators which can be seen in the table below. This financial performance data would suggest some challenges faced by the enterprises and feed into the capacity building and assistance planning of APPSANI for their members.</p>		<table border="1"> <thead> <tr> <th></th> <th>2013</th> <th>2014</th> </tr> </thead> <tbody> <tr> <td># ENTERPRISES SURVEYED</td> <td>90</td> <td>187</td> </tr> <tr> <td colspan="3"><b>PRODUCTION DATA (Average)</b></td> </tr> <tr> <td>Unit sold per month</td> <td>9.34</td> <td>6.38</td> </tr> <tr> <td>Selling price (USD)</td> <td>103.70</td> <td>109.18</td> </tr> <tr> <td>Production cost (USD)</td> <td>81.91</td> <td>86.16</td> </tr> <tr> <td>Sales Margin</td> <td>21%</td> <td>21%</td> </tr> <tr> <td colspan="3"><b>FINANCIAL DATA (Average_USD)</b></td> </tr> <tr> <td>Annual Revenue</td> <td>11,620</td> <td>8,363</td> </tr> <tr> <td>Expenses (incl. Marketing Costs)</td> <td>8,988</td> <td>6,654</td> </tr> <tr> <td>Fixed Assets</td> <td>2,329</td> <td>3,420</td> </tr> <tr> <td>Current Assets</td> <td>844</td> <td>1,146</td> </tr> <tr> <td>Receivables</td> <td>504</td> <td>449</td> </tr> <tr> <td>Net Income</td> <td>2,632</td> <td>1,709</td> </tr> <tr> <td>Profit Margin</td> <td>23%</td> <td>20%</td> </tr> </tbody> </table>		2013	2014	# ENTERPRISES SURVEYED	90	187	<b>PRODUCTION DATA (Average)</b>			Unit sold per month	9.34	6.38	Selling price (USD)	103.70	109.18	Production cost (USD)	81.91	86.16	Sales Margin	21%	21%	<b>FINANCIAL DATA (Average_USD)</b>			Annual Revenue	11,620	8,363	Expenses (incl. Marketing Costs)	8,988	6,654	Fixed Assets	2,329	3,420	Current Assets	844	1,146	Receivables	504	449	Net Income	2,632	1,709	Profit Margin	23%	20%
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<p><u>Remarks:</u> The specific capacity of APPSANI staff to be developed here was on the accreditation process of its members. The project hired a consultant to work with APPSANI to develop guidance and tool to be used for this accreditation purposes. A pilot activity was conducted to test and refine the guidance and tool while at the same time learned how the tool can be fine tune – suitable for APPSANI staff. As part of the process, the TA also conducted on-the-job training for APPSANI staff. The survey was conducted by these staff with selected entrepreneurs. The results were then summarized, analyzed and fed into the capacity building plan of APPSANI for members surveyed.</p>																																															

### 3. Key Innovations Introduced through the Rural Sanitation Market Development Component of STBM

### 3.1 Tapping the Market Opportunity

The TSSM project targeted households with low socio-economic status through a mason-based service model. However, it became clear that training masons was not sufficient to address all household consumer needs or supply-side challenges constraining the availability of improved sanitation products to reach them.

Consumer research conducted under TSSM assessed a range of aspirations held by low-income households and found that people associate good facilities with social status but perceive them to be unaffordable.<sup>15</sup> Key market gaps identified also from the research were: 1) over estimation by low-income households of cost (price) of toilet; 2) complicated process for people to purchase latrine; and 3) toilet purchase at the lowest priority when households have extra money. These gaps could not be addressed by an intervention focused only on a public demand-creation and mason training – they needed interventions directed at introducing innovations with the very business model<sup>16</sup> that existed in rural Indonesia at that stage. The business model had to 1) reduce the cost of production; 2) provide a credible, one-stop shop point of sale for rural households; and 3) allow modular improvement and financing to allow poorest households to purchase and upgrade when they have extra cash.

Developing and testing this new business model was a first, proof-of-concept stage of the TA. In order to commercialize the business model, links to market support needed to be developed and established. These included: 1) establishment of a sanitation entrepreneur development program; 2) establishment of a sanitation industry association; 3) formalizing public-private roles in demand-creation and marketing and ultimately, in achieving improved rural sanitation outcomes; and 4) introducing sanitation financing products through local financial institutions.

Developing a market development approach was based on the assumption that there is a market opportunity – indeed, a significant one. Over 40 percent of Indonesia’s 247 million residents do not have access to improved sanitation. At 54 million people in total, Indonesia has the second highest number of open defecators worldwide.<sup>17</sup> In rural areas, only 46 percent of the 121 million rural residents have improved sanitation and another 31 percent – 37 million people - regularly practice open defecation. While these numbers demonstrate Indonesia’s staggering sanitation need, they also represent a vast untapped market opportunity worth an estimated USD 1.3 billion in rural areas alone for one-time sales of improved sanitation facilities.<sup>18</sup> An IFC study conducted earlier (2009) had consistent finding: estimating that the market value for toilet construction in East Java Province alone could reach USD 323 million across 8,000 villages.<sup>19</sup>

### 3.2 Improving the Sanitation Business Model to Serve the Poor

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<sup>15</sup> Nielsen. Consumer Survey Prepared for WSP. *Total Sanitation and Sanitation Marketing Research in East Java*, 2008

<sup>16</sup> Business model describes the process by which an enterprise creates economic value for its target customer, itself, and its investors. It includes the methods to deliver a product or service to its target markets for which customers are willing to pay and therefore, generates profit for the enterprise.

<sup>17</sup> Progress on Drinking Water and Sanitation: 2014 Update. Joint Monitoring Programme, WHO/UNICEF.

<sup>18</sup> J. Sy, R. Warner and J. Jamieson, 2014. *Tapping the Markets: Opportunities for Domestic Investments in Water and Sanitation for the Poor*. World Bank.

<sup>19</sup> Cowater International Inc. Study Report Prepared for IFC. *Indonesia Sanitation Market Assessment*, 2010

Despite the sizeable market opportunity, the total number of entrepreneurs and their relatively low monthly installation figure at 15 units per month shows that market coverage is not organically expanding. What has been holding the market back from reaching these millions of unserved households? For the most part, the sanitation industry has largely failed to supply products and services that the majority of rural households want and can afford. A combination of weak consumer demand, inappropriate business models, fragmented supply chains and lack of supportive market-entry policies has led to weak private sector investment in sanitation.

#### a. Product Research

Research undertaken in East Java during TSSM project implementation revealed that rural poor target households want a pour-flush latrine that is easy to clean, odor-free, easy to maintain, durable, and safe.<sup>20</sup> The ideal latrine has a ceramic pan with a concrete slab fitted with a water seal to prevent bad odors. Although they indicated a preference for a septic tank, most households had very little understanding of or interest in the underground components of a latrine. Households estimated that the ideal pour-flush water seal latrine is too expensive, costing at least IDR 1.4 million (USD 117)<sup>21</sup>. They had limited knowledge of other latrine options. For most households, dry pit toilets were considered a temporary measure not worth sustaining over the long term.

The initial marketing strategy priced a concrete-slab dry pit latrine at around IDR 240,000 (USD 20) as a starter-level option, and encouraged enterprises to offer lower-cost pour-flush options with offset leach pits as an alternative to existing septic tanks. These options did not include a shelter. However, follow-up action research in 2011 indicated that poor households generally did not want to buy the dry pit starter option. Some households delayed latrine construction until they could afford the desired pour-flush type. Where lower-cost pour-flush models costing IDR 750,000 (USD 62) were offered, poor households opted to jump directly to this product.<sup>22</sup> Interviews with enterprises also confirmed that 80% of their sales came from “premium” latrines costing IDR 1-1.2 million (USD 85–100), even when they offered the lower-cost options.<sup>23</sup>

The most common underground latrine structures in Indonesia are pits lined with stacked precast concrete rings or simple septic tanks with in-situ concrete casings. Initially, masons and enterprises in the TA program simply offered a wider range of these existing technologies, using available tools and molds. With the clear consumer preference for the premium pour-flush, the TA began to consider how underground technologies could be redesigned for affordability. At the same time, the Ministry of Health raised concerns about improving safety and avoiding groundwater contamination. New standards for the sale of “healthy latrines” specified that they should not contaminate water or topsoil, and be insect-free, odor-free, safe, easy to clean, and private.

#### b. Optimizing the On-site Construction Process to Lower Cost and Improve Quality

To be able to construct latrines that met the government’s “healthy latrine” requirements while lowering production costs, the initiative brought on board the *Institut Teknologi Sepuluh November (ITS)* Surabaya in East Java to work with sanitation entrepreneurs. *Institut Teknologi Sepuluh November*

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<sup>20</sup> Nielsen. Consumer Survey Prepared for WSP. *Total Sanitation and Sanitation Marketing Research in East Java*, 2008

<sup>21</sup> Note: Approximate 2014 exchange rate of USD 1 = IDR 12,000 used unless otherwise noted

<sup>22</sup> Mukherjee, Nilanjana. 2011. Action Research, TSSM.

<sup>23</sup> Cowater International Inc. Study Report Prepared for IFC. *Indonesia Sanitation Market Assessment*, 2010.

estimated the cost of materials and labor for a typical concrete-ring septic tank latrine at about IDR 1,331,000 (USD 111). These designs were costly, prone to leakage, and difficult to install. New designs would need to satisfy enhanced performance criteria including cost efficiency, leak resistance, simplified construction process and equipment, faster construction, and flexibility. Using a value engineering approach, a range of alternative design options was explored, including different precast concrete ring options and alternative on-site casting approaches.

The final design included the use of new fiberglass molds to construct the latrine closet (a ceramic pan fitted in concrete slab) as well as fiberglass inner molds and a simplified technique for cast-in-situ leak-proof concrete casings for septic tanks (see figure 1).

*Figure 1. Constructing concrete septic tanks with new fiberglass molds and casting technique*



This design has optimal performance and reduces overall costs of the standard design by about 26%, to IDR 978,700 (USD 82).<sup>24</sup> After this enhanced technology was developed, the ITS team standardized a portfolio of four modular “healthy latrine” product packages, ranging from about IDR 650,000 to 1,150,000 (USD 54–96), as illustrated in Figure 2.

#### **a. Simplifying the Purchase Process through a One-Stop Sanitation Shop Concept**

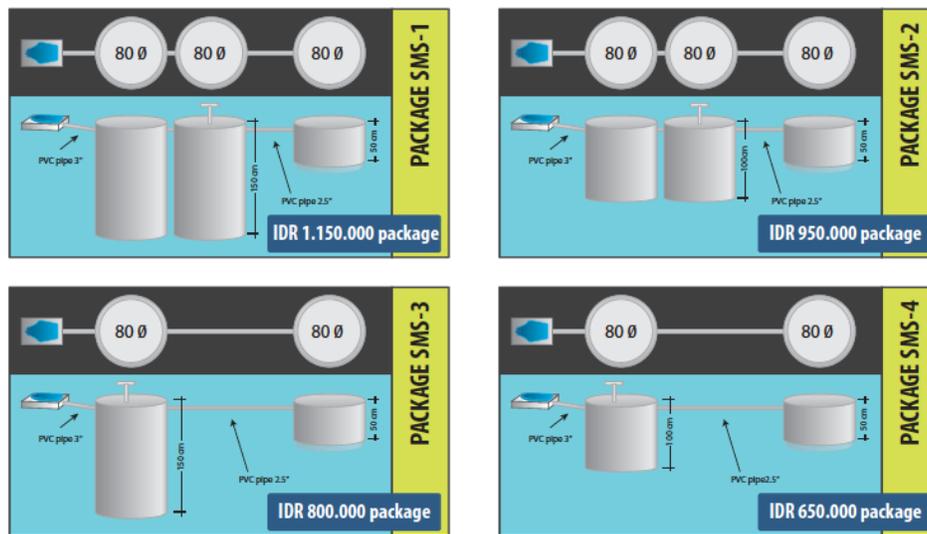
The market research also revealed that the latrine purchase and construction process is quite complicated. Typically, households get information about latrine options from neighbors, health cadres, and masons. When ready to purchase, they consult a mason to get a bill of materials. Households must then go to the market to purchase all the necessary materials, usually visiting at least two shops, and

<sup>24</sup> For details on the product design process, see Jefa, M., and L. Trisunarno. 2012. “Applying Value Engineering to the Development of an Economic and Hygienic Latrine Design (Case Study: Sanitation Entrepreneurs in East Java),” *Proceedings of the 10th Production Systems Seminar*. For full design specifications and construction steps, see “Standard Operating Procedure for One Stop Shop Sanitation Service, SOP 2 Healthy Toilet Construction,” at [www.wsp.org/toolkit/toolkit-home](http://www.wsp.org/toolkit/toolkit-home).

then transport materials back to home. Finally, the mason comes back to negotiate the final price for labor and to build the facility. This process involves multiple negotiations and shopping trips, creating purchase hurdles for households such as opportunity cost of time, increased cost of materials, and a lack of price transparency.

Working with existing private sanitation entrepreneurs, the TA introduced a turnkey business model, referred to as a ‘one-stop-shop’ model. A one-stop-shop sanitation entrepreneur is a single enterprise offering bundled services including a range of product options, home delivery of materials, full home installation, flexible payment options, bulk purchase discounts, and in some cases maintenance and desludging services. Entrepreneurs are taught how to provide advice to customers on their needs and a range of toilet facility options. They offer a range of materials and source these for the customers and then install on-site. By aggregating services, the one-stop-shop reduces transaction costs and provides end-to-end services that connect consumers with building material suppliers, masons, and other value chain actors.

Figure 2. Example product brochure for four new latrine packages



Unlike business models used elsewhere, such as those in Bangladesh, the Indonesian one-stop-shop is primarily an aggregator of services and supplies, and usually does not engage directly in mass production and delivery of precast parts. This keeps their fixed costs low and cash locked in inventories to a minimum. The one-stop-shop purchases all materials and arranges for the materials to be delivered to the household by the supplier, usually a district-based retailer. In some cases, the entrepreneur has his/her own trucks and directly manages transport. The entrepreneur employs, trains, and manages teams of masons for on-site construction. Masons work on a fee-for-service basis, and enterprises typically keep a roster of about four masons on call. The enterprise also manages a network of trained commissioned-based agents who coordinate order-taking and payment transactions at the village level. These agents are usually local health volunteers, and are recruited based on recommendations from health centers and other entrepreneurs. Table 1 maps the main features of the one-stop-shop business model.

The one-stop sanitation shop model was first piloted in 2009 in East Java. About 60 entrepreneurs identified by local governments were trained on toilet sales, installation, and simple book keeping. Most participating entrepreneurs came from existing small- and medium-size business owners or play a role in government such as health sanitarians, teachers or midwives. By early 2012, at least 30 of them had become part- or full-time one-stop sanitation shops that have sold and installed more than 15,000 units of toilets among them.

Table 1. One-stop-shop (OSS) business model

<p><b>Key Partners</b> OSS coordinates and works with:</p> <ul style="list-style-type: none"> <li>• Raw material suppliers</li> <li>• Mason teams</li> <li>• Commission-based agents/cadres</li> <li>• Sanitarians, health center staff, village officials, sanitation committee and other government staff</li> <li>• APPSANI (Indonesian Association of Sanitation Management and Empowerment)</li> </ul>	<p><b>Key Activities</b> OSS undertakes:</p> <ul style="list-style-type: none"> <li>• Market analysis and social mapping to identify target consumers in each village</li> <li>• Triggering events and product promotion</li> <li>• Order receiving and taking payments</li> <li>• Managing home delivery and mason construction teams</li> <li>• Sourcing and purchasing of raw materials</li> <li>• Bookkeeping and financial management</li> <li>• Business planning, production planning, stock management</li> <li>• Human resource management, including recruitment and training</li> </ul>	<p><b>Value Proposition</b> OSS entrepreneurs offer customers:</p> <ul style="list-style-type: none"> <li>• A range of four new MOH-approved “healthy latrine” product packages</li> <li>• Free pre purchase consultation to assist with product and site selection</li> <li>• Home delivery of all materials</li> <li>• Full-service on-site construction by trained mason team</li> <li>• Price discounts for bulk purchase orders by groups of households</li> <li>• Payment flexibility to include cash, group savings (<i>arisan</i>), bank/MFI credit, or installment payment</li> <li>• Maintenance and de-sludging services</li> </ul>	<p><b>Customer Relationships</b> OSS maintains customer satisfaction by:</p> <ul style="list-style-type: none"> <li>• Using local sales agents as points of regular contact</li> <li>• Offering personal assistance to help site latrine</li> <li>• Offering after-sale services such as maintenance and de-sludging</li> <li>• Maintaining good relationships with local health staff</li> </ul>	<p><b>Customer Segments</b> OSS targets:</p> <ul style="list-style-type: none"> <li>• All households without latrines or with poor-quality latrines within a feasible transport, typically within a sub-district (village-level market sizing and segmentation is done during social mapping)</li> </ul>
<p><b>Cost structure</b> The main costs for the OSS are:</p> <ul style="list-style-type: none"> <li>• Fixed investment in molds, equipment and tools, other fixed assets</li> <li>• Variable cost of raw materials, marketing costs, time for training, village visits</li> <li>• Fee-for-service payment to mason teams for construction</li> <li>• Per-latrine commissions to sales agents</li> <li>• Transport delivery fee from retailer, or vehicle fuel and maintenance if self-delivered</li> </ul>		<p><b>Revenue streams</b> OSS receives revenues through:</p> <ul style="list-style-type: none"> <li>• Operating on a cost-plus model (customer pays cost of goods plus a profit margin)</li> <li>• Interest from installment payments</li> <li>• Small premiums for add-ons (e.g. custom designs)</li> <li>• Also offers discounts for group bulk purchases</li> </ul>		

Adapted from the Business Model Canvas, [www.businessmodelgeneration.com](http://www.businessmodelgeneration.com)

The project facilitates modification to the business model. Best practices shared by the entrepreneurs during workshops or meetings or identified from coaching process have been documented and reshaped the business model. Some main improvements to the business model since it was developed in 2009 are:

- Sequencing of demand – supply activities (2011). Shift to a more integrated and flexible approach on ‘sequencing’ of product promotion by the enterprise and CLTS triggering event by district health staff to better coordinate supply-side and demand-side interventions.
- Seamless leak-proof septic tank design (2012). In collaboration with *Institut Teknologi Sepuluh Nopember (ITS)* Surabaya, the project explore the use of fiberglass molds and new concrete casting techniques to mold seamless concrete septic tank rings, increasing strength and reducing costs.
- Target financing of financial institutions for enterprises (2013). Initially, the focus of the business model on financing was for the FIs to channel credit to enterprises for working capital. The focus was then shifted to facilitate installment payments of customers to purchase sanitation products from enterprises.
- Sales and promotion (2014). A more structured process on selling and promoting the product were adopted. Facilitated by the association, enterprise network with village health cadres and develop their capacity to become its promoter and fee-based sales force.

A standard operating procedure (SOP) of one-stop shop sanitation business model<sup>25</sup> was developed to document the business process in the format that can be easily followed by any potential entrepreneurs to run the business.

## 1.2 Sanitation Entrepreneurship Development Assistance

At the kick-off of the STBM program in the 5 provinces (with assistance from this TA), MoH and WSP first focused on sensitizing provincial leaders to the market facilitation approach. A group of stakeholders from each new provinces, including potential one-stop-shop enterprises and provincial government staffs, were invited on an exposure tour to a district in East Java that was considered successful in all three programmatic aspects of demand creation, supply strengthening and enabling environment strengthening. (See also sub chapter 3.6). This event had been able to show evidence and promote the approach to local government staffs from 5 provinces and other organizations identified working on rural sanitation development in those provinces. Working with APPSANI and STBM Secretariat, the TA prepared a mechanism to response to LGs or other organizations requests to support their training mainly with trainers and training facilitators.

During the course of the TA, **42 entrepreneurship training events were held, reaching 1,343 participants**. These include training conducted by local governments in 5 provinces of SURS project, other LGs with request through STBM Secretariat to APPSANI, and other non-government organizations. See table 2 for more detail.

The aim of the sanitation entrepreneurship training was to produce competent sanitation providers who are able to deliver one-stop shop business value to target customers i.e. to create markets, fill orders, provide the products and services that consumers want and can afford, and maintain profitable

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<sup>25</sup> See Training Manual, Training Modules, and Standard Operating Procedure for One Stop Shop Sanitation Service at [www.wsp.org/toolkit/toolkit-home](http://www.wsp.org/toolkit/toolkit-home)

businesses. Entrepreneurship training is a key determining factor in the success of creating sanitation suppliers. The TA uses the training curriculum developed since TSSM project in which three cycles of trainings were conducted inviting 60 participants. As part of the curriculum development, an analysis on the effectiveness of the training was conducted by monitoring the progress made by participants with their business after taking part in the training. Based on the analysis, adjustments to the training curriculum and methodology were made, including on the process of selecting participants, training materials, and methodology.<sup>26</sup>

Table 2. Entrepreneurship Training Supported During TA

Funding Source	# Training Events	# Participants
West Java	7	235
Central Java	4	438
East Java	10	266
Bali	2	40
West Nusa Tenggara	2	47
LGs through STBM Secr.	14	243
Other Organizations	3	74
	<b>42</b>	<b>1,343</b>

Selection of the participants was key to the success of the training. People who are motivated to run sanitation businesses and have business experience and skills make more appropriate training participants. Therefore, the training organizers needed a selection process to filter the candidates proposed by each district, which included an assessment of their personal information, motivation, work and business experience. Using the information provided on the data forms, the training organizer and district health office evaluated the candidates and selected appropriate participants. To ensure that the selection process is effective, it should be carried out well beforehand, at least two weeks in advance.

The training materials were aimed at transferring a comprehensive set of knowledge and skills to the participants, and also to build characteristics important in an entrepreneur. Based on an assessment conducted in 2010 of trained entrepreneurs who managed to start the business, key character traits were initiative, ability to see and take advantage of opportunities, perseverance, attention to quality, self-confidence, supervision of work, and understanding the importance of business relations. This competency profile was translated into the delivery of the training materials to participants including the selection process.

In this TA component, a study was conducted to seek opportunities to foster women's participation in rural sanitation business. Women's businesses overall are not facing significantly different constraints than men's businesses among the entrepreneurs in the sample studied.<sup>27</sup> Thus, recommendations focus around increasing the proportion of women attending the trainings and then relieving constraints that both men and women are facing in expanding their businesses. Recommended changes include a new application form for the training which focuses less on qualities that will implicitly favor men, as well as

<sup>26</sup> See Training Manual, Training Modules, and Standard Operating Procedure for One Stop Shop Sanitation Service at [www.wsp.org/toolkit/toolkit-home](http://www.wsp.org/toolkit/toolkit-home)

<sup>27</sup> Oberst, Sarah. 2013. *Constraints to Female Sanitation Entrepreneurship in Rural Indonesia*. Final Report.

some minor additions to the administrative and financial training offered to entrepreneurs. In addition, addressing the issue of access to finance is crucial for both men and women in expanding their businesses. These recommendations will help to increase the number of women running successful sanitation businesses, thus increasing the size of the supply of improved sanitation in Indonesia since women play an important role both as customers and suppliers in the sanitation market. Simple changes are suggested based off of the literature review and the study findings that should work towards evening the playing field in the application process. The changes include both asking slightly different questions and weighting the questions differently in the scoring process.<sup>28</sup>

A balance between in-class and field experience was used for the actual 4-day participatory workshop, including:

- Classroom sessions on key topics such as:
  - Basics of sanitation marketing and CLTS, business motivation, and key technical features of healthy latrines.
  - Standard Operating Procedures for the one-stop-shop business process, including communications and product promotions, sales management and selling techniques, production/installation process, order taking and financing options.
  - Business management, including book keeping and financial management, human resource management, and simple business planning.
  
- Field practice in villages for hands-on practice on:
  - Sales techniques and tactics
  - Latrine construction and installation

Involving alumni of the sanitation entrepreneurship training who had already started a sanitation business contributed a great deal to the success of the training, because they were able to share their knowledge and experience first-hand with the participants. It also allowed participants to have practical experience on the business process since the field session was conducted within the business of an alumnus.

Post-training support consisted of monitoring and business support as well as peer-learning meetings. Sanitation entrepreneurship training participants were monitored and supported after they completed the training to ensure the realization of business plans that participants developed during training. Post-training interviews with and visit to participants found that they faced many difficulties getting their businesses up and running. These included personal difficulties, such as lack of self-confidence, lack of capital, and external difficulties, such as lack of support from the local health authority and village administration. These are all obstacles to setting up and running a sanitation business, and might even make the training participants give up the idea completely.

Learning from TSSM project, a systematic coaching process was developed. An on-site coaching session was conducted following a phone call survey to entrepreneurs who participated in the training. On-site coaching helped participants to deal with the difficulties they faced. Counselors provided a comfortable place for discussions, offered the participants advice, guidance and technical support. This should enable

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<sup>28</sup> See Training Manual, Training Modules, and Standard Operating Procedure for One Stop Shop Sanitation Service at [www.wsp.org/toolkit/toolkit-home](http://www.wsp.org/toolkit/toolkit-home)

the participants to realize their business plans and make profits from the sanitation businesses they set up. To better serve entrepreneurs in 5 provinces, the cascading coaching process was introduced. Some experienced entrepreneurs are recruited as counselors. During the training, participants are introduced to these entrepreneurs, member of APPSANI, for their consultation needs regarding their business challenges.

The availability of coaching sessions has brought significant conversion of training participants into active entrepreneurs. The number of participants who successfully launched their sanitation one-stop shop businesses is doubled in the 5 provinces where the coaching sessions were provided directly by the TA compare to training participants in other provinces (20% vs 8% conversion rate).

The rural sanitation market development component also initiated a periodical meeting mechanism inviting several entrepreneurs to come together to share their experiences in running one-stop-shop sanitation business. Best practices contributing to the success of one entrepreneur can be motivating for other entrepreneurs who faced similar challenges. Follow up visits were sometimes even organized by entrepreneurs to learn specific topic from others who shared their experiences at the meetings. These best practices shared during the meetings were documented and refined the business model continuously.

### **1.3 Fostering Transition from Small-Scale Independent Businesses to an Industry Association**

The bimonthly business meetings provided valuable opportunities for entrepreneurs to come together. Most entrepreneurs who had reached a certain scale of production faced similar challenges on how to best respond to government demand to accelerate improved access within their localities. An opportunity emerged from the coming together of a small group of entrepreneurs: they were able to organize bulk buying from manufacturers or distributors of sanitary supplies such as ceramic squat pans, which reduced the overall cost.

At the same time, during implementation of the TA, there was growing concern about the sustainability of a government-led approach to enterprise development. At scale, government simply did not have the capacity to provide the kind of on-going recruitment, training, mentoring, and other business development services that would be required to support relatively small-scale enterprises in a fast-evolving rural sanitation industry. While it was clear that many of the challenges enterprises were facing could not be solved by an individual business, the government was not in the best position to offer the kind of external support required to drive further industry development.

It was in this context that the TA explored the potential role and establishment of an industry association. In January 2012, the Government of Indonesia and WSP brought together a small group of one-stop-shop enterprises from East Java to discuss the role of a sanitation industry association, including potential association benefits and areas of collaboration between enterprises and the Government. The enterprises agreed to establish APPSANI (*Asosiasi Pengelola dan Pemberdayaan Sanitasi Indonesia*, or the Indonesian Association of Sanitation Management and Empowerment), with the vision of partnering with the government to improve household access to sanitation and achieve Indonesia's sanitation goals.

APPSANI pledged to support its member businesses to deliver affordable 'healthy latrine' products by playing two core roles: 1) recruiting and training new enterprises to replicate the one-stop-shop business model, and 2) providing services such as access to finance, bulk purchase and discounts from

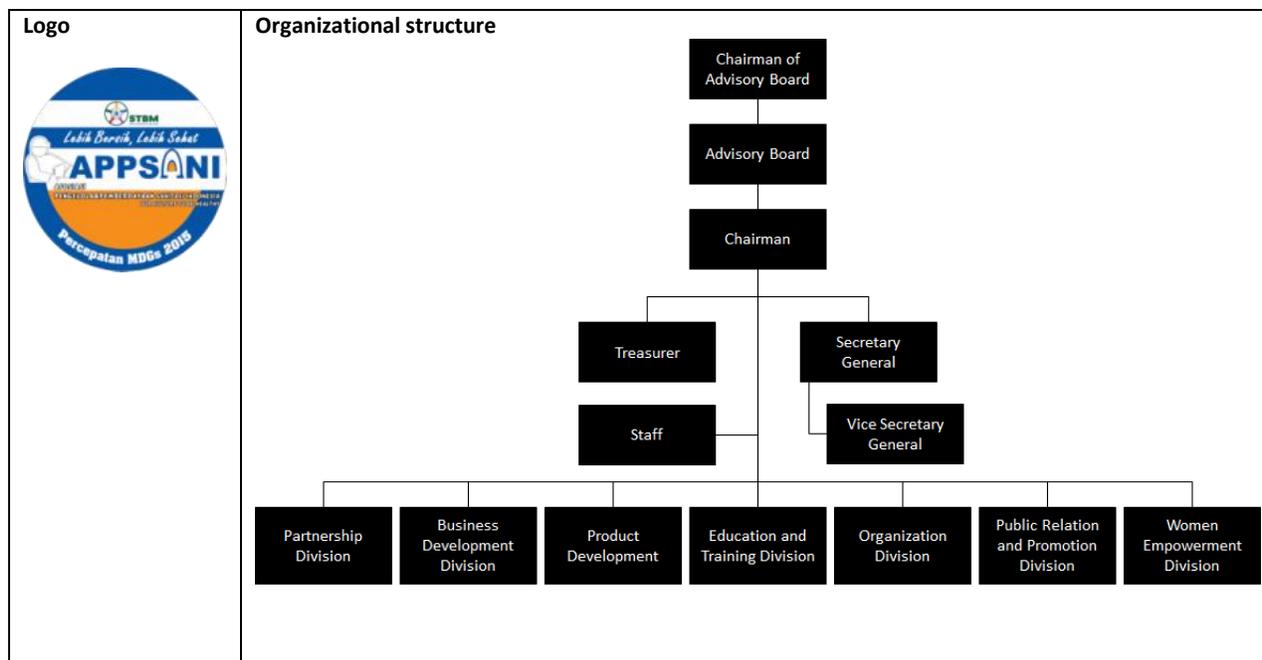
suppliers, business mentoring, and other support to help members increase their capacity, scale and turnover.

Once the core vision and mission were established, the APPSANI Chair and Steering Committee undertook a number of steps to fully develop the organization:

- **Formalizing an Organizational Structure:** Through consultations with enterprises and district-level government staff, the APPSANI Committee developed an organizational structure with major functional areas including business development, R&D/product development, education and training, organizational development, public relations and women’s empowerment (figure 3). The committee developed a roadmap and work plan, and registered the association officially with the government.

*Figure 3. Snapshot of the APPSANI Association*

<p><b>APPSANI – Asosiasi Pengelola dan Pemberdayaan Sanitasi Indonesia</b> Indonesian Association of Sanitation Management and Empowerment <b>Established:</b> 31 January 2012 <b>Vision:</b> APPSANI becomes a government partner to improve people’s access to sanitation in the context of achieving the MDG 2015 targets. <b>Mission:</b></p> <ul style="list-style-type: none"><li>• To help members provide sanitation services to households</li><li>• To help members provide a range of healthy and affordable sanitation products</li><li>• To improve knowledge and skills of sanitation enterprises</li><li>• To empower women to participate in sanitation as a business</li></ul> <p><b>Activity Areas:</b></p> <ul style="list-style-type: none"><li>• Promotion and public relations</li><li>• Business development and cooperation</li><li>• Technical research and development</li><li>• Education and training</li><li>• Organizational strengthening</li><li>• Women’s empowerment</li></ul> <p><b>Membership:</b> Members must:</p> <ul style="list-style-type: none"><li>• Operate a sanitation businesses</li><li>• Receive APPSANI sanitation enterprise training and certification of standardized service quality</li></ul> <p>Number of Members: 210 members exclude Pamsimas</p>
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- Needs Assessment and Members’ Registration:** APPSANI developed an initial portfolio of services and benefits to members based on enterprise surveys and consultations (table 3). The needs assessment also helped APPSANI develop an appropriate fee structure for members’ registration and training fees. APPSANI then began to attract and register existing one-stop-shop enterprises, and later, to recruit and train new members.
- Building Internal Capacity:** APPSANI needed to develop its own internal capacity in three core areas:

  - Training: APPSANI built up a pool of qualified business trainers and coaches using a ‘training of trainers’ approach;
  - Government relations: APPSANI worked with government counterparts to establish roles and coordination mechanisms at district level
  - Organization skills: APPSANI developed the core competencies of its own team of operational staff in areas such as planning, management and financial accounting
- Building Market Networks:** With support from the government, APPSANI began building linkages with other private sector players, positioning itself as the main point of contact between one-stop-shop enterprises and larger-scale players such as manufacturers and distributors of input supplies, local banks and microfinance institutions (MFIs).

Table 3. APPSANI Area of Services

Core Area	APPSANI Services/Member Benefits
<p><b>New Enterprise Recruitment &amp; Training</b></p>	<ul style="list-style-type: none"> <li>• Advertises the sanitation business opportunity to prospective one-stop-shop enterprises through mass media and other channels</li> <li>• Accepts and vets applications for enterprise training, and collects training service fee from local government</li> <li>• Actively recruits female applicants</li> <li>• Delivers 4-day Sanitation Enterprise Training</li> <li>• Delivers additional post-training business coaching at enterprise place of business</li> </ul>

<b>Member Registration</b>	<ul style="list-style-type: none"> <li>• Communicates APPSANI member benefits and fees to new trained enterprises</li> <li>• Registers trained enterprises and accepts APPSANI one-time registration fee</li> </ul>
<b>Quality Assurance &amp; Certification</b>	<ul style="list-style-type: none"> <li>• Develops and delivers training on Standard Operating Procedures for all one-stop-shop business processes (promotions, order taking, healthy toilet construction, payment mechanisms)</li> <li>• Keeps Standard Operating Procedures up-to-date and ensures member compliance</li> <li>• Coordinates with Government of Indonesia to certify quality of APPSANI members</li> </ul>
<b>Government &amp; External Relations</b>	<ul style="list-style-type: none"> <li>• Helps APPSANI members develop good relationships with local government officials</li> <li>• Acts as key liaison and spokesperson for APPSANI members at national and provincial levels</li> <li>• Provides technical assistance directly to the government as needed</li> <li>• Maintains APPSANI website and blog</li> <li>• Provides regular updates and attendance at key events on behalf of APPSANI members</li> </ul>
<b>Member Surveys &amp; Performance Monitoring</b>	<ul style="list-style-type: none"> <li>• Conducts periodic telephone interviews with APPSANI members to collect details on sales, business and financial performance</li> <li>• Conducts members surveys to get input on member needs and requests (e.g. training topics)</li> <li>• Currently developing digital monitoring system using tablet devices</li> </ul>
<b>Access to Finance</b>	<ul style="list-style-type: none"> <li>• Facilitates access to affordable finance for member businesses through APPSANI-Bank loan guarantees</li> <li>• Assists enterprises with loan application preparation</li> <li>• Signs MOUs with local banks and MFIs and assists partnerships for consumer sanitation loans (small per-latrine fee is paid to APPSANI for each toilet loan, although in practice this has been a challenge)</li> </ul>
<b>Access to Inputs &amp; R&amp;D</b>	<ul style="list-style-type: none"> <li>• Provides member discounts on custom-manufactured fiberglass mold sets for healthy latrine and septic tank construction</li> <li>• Provides member discounts on ceramic pans, pvc pipes and other materials.</li> <li>• Invests in University partnerships and research and development for new lower-cost technical designs and de-sludging mechanisms</li> </ul>
<b>Members Training, Coaching &amp; Events</b>	<ul style="list-style-type: none"> <li>• Develops and delivers new trainings in specific areas of interest, such as marketing, better coordination with government, financial accounting and others</li> <li>• Provides on-going mentorship and one-on-one coaching to existing members (upon request)</li> <li>• Convenes business-to-business exchanges, study tours and events</li> <li>• Provides regular member updates</li> </ul>

APPSANI undertook this work over a period of two years, slowly building up momentum and capacity. By late 2014, APPSANI had developed its role as an industry facilitator, providing both firm-level support and industry-wide services to **210 active one-stop-shop** members in five provinces plus additional members from 4 other provinces assisted based on request from STBM Secretariat (figure 4). APPSANI had actively recruited **37 female enterprises**, 18% of all members in 5 provinces, in its efforts to increase women's participation in sanitation as a business (figure 5). It had built up a pool of 19 qualified trainers, who have delivered 42 external organizations including government funded trainings to 1,343 potential new enterprises. The APPSANI network is currently expanding in five provinces, and plans are now underway to extend to all 34 provinces of Indonesia.

Figure 4. Number of APPSANI active members by province, July 2014

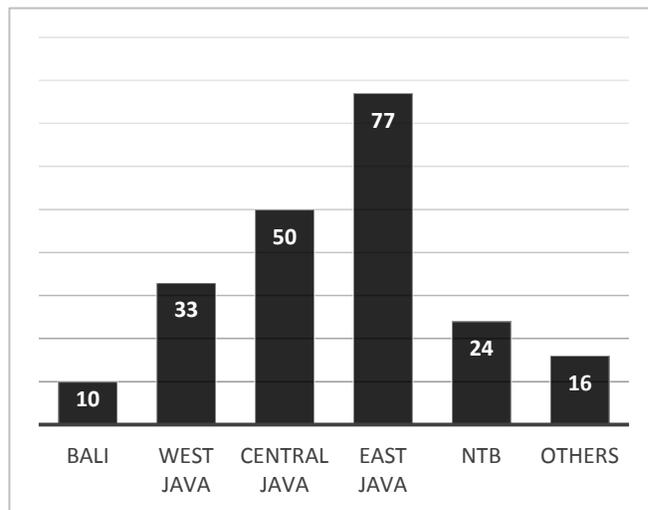
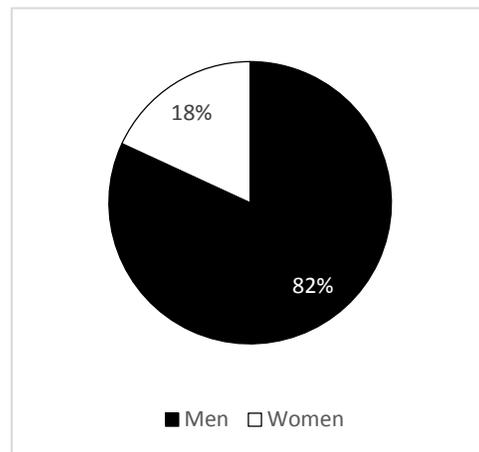


Figure 5. Percentage of APPSANI members by gender



APPSANI currently has five main sources of revenue:

- Training service fees: Local government is encouraged by the national STBM Secretariat to hire APPSANI to conduct 4-day enterprise trainings. The average training service fee is IDR 3 million (USD 250)
- One-time registration fee: New enterprises that want to become official APPSANI members must pay a one-time registration fee of IDR 50,000 (USD 4)
- Training participant fees which is mostly covered by facilitators including government: at IDR 200,000 (USD 17) per trainee for 4-day training
- Internal funding support in the form of donations from the board and senior management members
- Margins from bulk purchase of materials such as closet, molds, and pipes

#### 1.4 Working with Banks and MFIs to Introduce Sanitation Financing

Financing options offer greater choice and flexibility to consumers, but care must be taken to ensure options are scalable, manageable for entrepreneurs, and responsive to the needs of poorer households. The official 2013 poverty line for rural East Java is IDR 270,000 (USD 23) per capita/month, or 1.350,000 (USD 115) for a household of five people.<sup>29</sup> For a household living at the poverty line, the range of low-cost healthy latrines would be about 4-7% of annual expenditure, or 48%-85% of monthly expenditure. While some of the poorest households have demonstrated a willingness to prioritize investments in sanitation, many more will likely require financing support.

To address this need, one-stop-shop enterprises offer options to spread payments over time, such as installment payments, and revolving savings groups (*arisan*):

- The most common financing option is the installment payment plan. At first, enterprises offered installment payment plans freely, but soon it became clear that installments could be a drain on

<sup>29</sup> Badan Pusat Statistik (Statistics Indonesia), [www.bps.go.id/eng](http://www.bps.go.id/eng)

working capital and a barrier to continued business growth if not managed properly. Enterprises offering installments tend to charge higher prices for sanitation facilities to offset the increased risk and transaction cost of the service. The most common payment plan is in two installments, a down payment and the balance at harvest time. Most enterprises feel that collecting installment payments is difficult and time-consuming, but they offer this option because it is frequently requested.<sup>30</sup>

- The revolving savings group model (*arisan*) is an attractive alternative financing option for enterprises, since it can expand sales without the risk of insufficient working capital. In the *arisan* system, a group of ten households collects daily contributions from each household and submits them each week to the sanitation committee in the hamlet. In coordination with the committee, the enterprise constructs one healthy toilet each time the group has amassed the money, based on an agreed schedule. The enterprise is paid in cash upon completion of each construction. At the end of the cycle, each household in the group will have a healthy toilet. This method is less risky for entrepreneurs compared to installments, and it can enable poorer households who are not eligible for microcredit to self-finance their latrines. However, it requires extra work for enterprises, good coordination, and strong leadership from local sanitation committees and leaders. For this reason, the *arisan* option has been adopted only in districts where these favorable conditions exist. It is currently in use by just seven enterprises, and may not be very scalable, especially in more remote areas.

Under the TA, more recently a pilot was initiated in East Java between July and December 2014. During this period, four one-stop-shop enterprises partnered with a national bank and three micro-finance institutions (MFIs) to explore appropriate sanitation lending products and mechanisms. For the pilot, MFIs made 235 sanitation loans worth more than USD 16,000.

Following the pilot, APPSANI helped to negotiate memoranda of understanding between member-enterprises and financial institutions. As of December 2014, 11 one-stop-shop enterprises have partnered with four different local banks and now have made 823 sanitation loans worth more than USD 70,000.

Sanitation sales agents refer interested households to the MFI, which then sends out a loan officer to conduct a house visit and assessment before signing a loan. Participating banks and MFIs offer varying loan products and terms, including both group (joint-liability) and individual loans with one to two year terms and interest rates of about 1.025% to 1.5% flat rate per month. So far, the field results have been promising, although it is clear that poorer households face significant barriers to access this type of finance. Poor households lack sufficient assets to stand as collateral for individual loans; they usually lack a formal financial or credit history to demonstrate creditworthiness, and often lack experience with the formal financial system. For these reasons, they may have difficulty accessing this type of financing option even if it is available.

In October 2014, the TA, in collaboration with the National Development Planning Ministry (Bappenas), Ministry of Health and Water.Org organized a dissemination workshop inviting potential banks and MFIs from districts in 5 provinces where there are already entrepreneurs running one-stop shops. Besides identifying potential sources of financing for clients of sanitation entrepreneurs, another upshot of this

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<sup>30</sup> Ikeda, J. 2012. APPSANI Member Survey and Focus Groups: Identifying Challenges to Growth and Defining Future APPSANI Services. Unpublished.

outreach was that MFIs became interested in offering sanitation improvement financial services to their current customers.

### 1.5 Systematizing Public-Private Collaboration in Rural Sanitation

As the supply-side strategies continued to evolve, the program moved from a focus on community-level masons, to a one-stop-shop business model in which enterprises reached a wider market of communities, offering a range of product choice with full-service installation and financing options.

For their part, the Government of Indonesia was keenly aware of the need to more rapidly and systematically replicate the one-stop-shop enterprise model to address the growing demand created by CLTS and behavior change activities. Given the relatively small geographic reach of these enterprises, the number of sanitation enterprises needed to be dramatically increased, and existing enterprises needed to scale up production in order to keep pace with government-led demand promotion.

On the other hand, since these enterprises were not confined to a single community, it became important to consider how consumers and enterprises would interact freely in the market, irrespective of when a CLTS triggering event had occurred. One-stop-shop enterprises were able to build relationships with district and sub-district health officials, which opened up more opportunities to consider how these enterprises could complement CLTS activities beyond the community level. At the same time, the roles and mind-sets of government officials and other stakeholders needed to evolve to accommodate this new private sector participation.

In practice, striking a balance between demand generation and supply strengthening activities proved to be challenging in the field for a number of reasons.<sup>31</sup> The market research, product and business model development, and marketing and supply chain strategy development required substantial lead-time to develop. Within the East Java program, CLTS triggering was underway for two years or more before local marketing and supply interventions began. These start-up problems led to a mismatch between demand creation and supply strengthening activities. In the initial years of the program, increased demand for sanitation improvements generated by CLTS was not adequately met by the supply of sanitation products and services. An action research study in eighty triggered communities in 2011 found that a lack of affordable pour-flush latrines was a contributing factor both to poor achievement and poor sustaining of Open Defecation Free (ODF) status.<sup>32</sup>

Learning from the sequencing issues in the East Java experience, the Ministry of Health, with support from WSP, took a different programmatic approach as it expanded into additional provinces in 2012. Rather than beginning with CLTS training, to kick-off new STBM activities in these provinces, they first focused on sensitizing provincial leaders to the market facilitation approach. About five people from each new province, including two or three potential one-stop-shop enterprises and two provincial government staff, were invited on an exposure tour to a district in East Java that was considered successful in all three programmatic aspects of demand creation, supply strengthening and enabling environment strengthening.

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<sup>31</sup> See Padi and Jenkins, nd, 'Sanitation Marketing and CATS: How do we link Approaches,' Guidance Note 10, UNICEF Sanitation Marketing Learning Series.

<sup>32</sup> N. Mukherjee, 2011. Factors Associated with Achieving and Sustaining Open Defecation Free Communities: Learning from East Java, WSP Brief.

During the visit, the provincial representatives – including government staff - attended the 4-day one-stop-shop enterprise training workshop. Through the training, they learned about the overall linkages with CLTS, the market potential, the business model, and the Standard Operating Procedures for a one-stop-shop sanitation enterprise, including hands-on selling and latrine construction experience. They also visited and spoke to all the key players in the province – enterprises, health center staff, community health cadres, microfinance institutions and provincial leaders – to understand for themselves the different actors, roles and activities and how these interact on the ground. Upon return to their provinces, enterprises were encouraged to begin setting up ‘pioneer’ one-stop-shop operations as soon as possible. For their part, provincial staff began the next steps of organizing CLTS facilitator trainings at provincial and district levels. This involved hands-on CLTS training and triggering practice for sanitarians, health cadres, mid-wives and others in the community, de-coupled from supply-side activities, using the national approach.

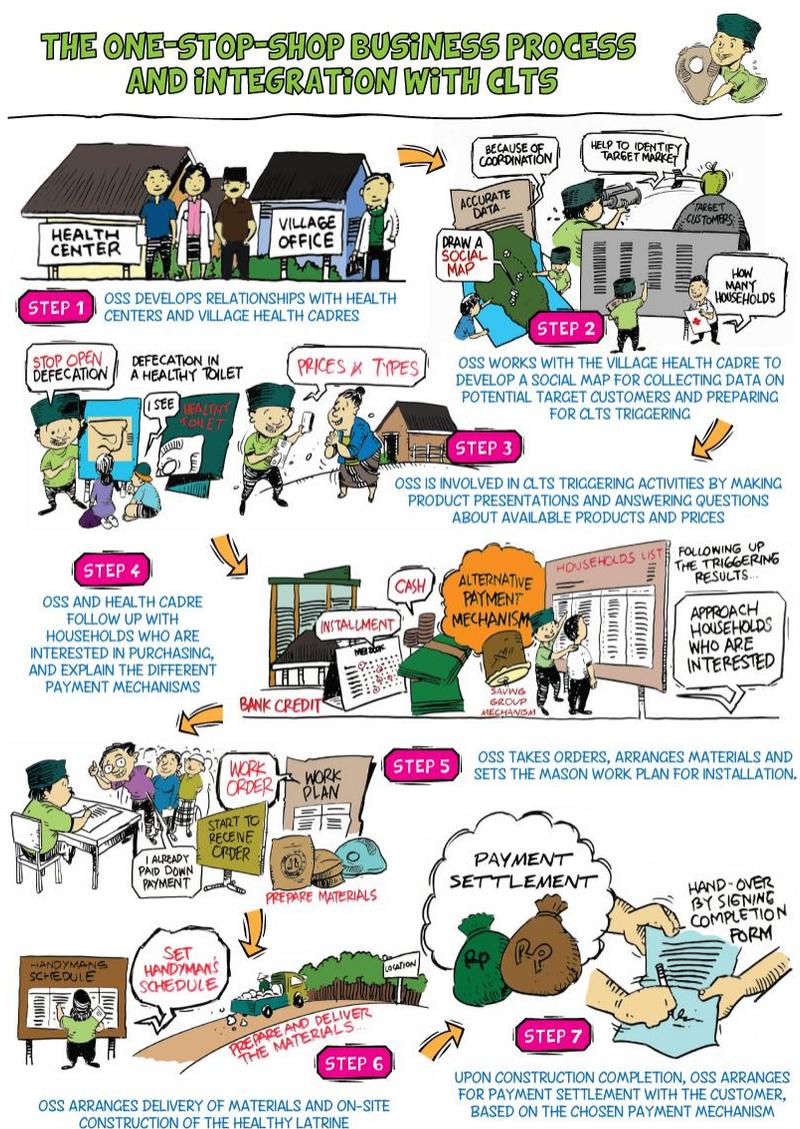
To fully integrate one-stop-shop activities with local CLTS implementation, in 2013 APPSANI developed a set of Standard Operating Procedures (SOPs) for each step of the business process.<sup>33</sup> Not only did the SOPs allow enterprises to take a consistent approach to product promotion, order taking, construction and payment, it also made explicit the linkages between the enterprise’s sales activities and the governments CLTS and behavior change work. Each SOP includes details on the roles of all stakeholders and step-by-step guidance on all interactions at community and household level. This guidance allowed enterprises, officials, and community-level actors to understand where others fit in to the process, and how to communicate with each other. Figure 6 provides an overview of the steps in the enterprise’s business process, and Table 4 maps these steps to the essential pre-triggering, triggering, and follow up stages of CLTS.

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<sup>33</sup> See Training Manual, Training Modules, and Standard Operating Procedure for One Stop Shop Sanitation Service at [www.wsp.org/toolkit/toolkit-home](http://www.wsp.org/toolkit/toolkit-home)

Figure 6. The One-stop-shop business process and integration with CLTS

Table 4. Pre-triggering, triggering, and follow up CLTS



<p>Pre-triggering</p>	<ul style="list-style-type: none"> <li>To kick-start relationships, a representative of APPSANI industry association goes to the district health office and sub-district offices to introduce the one-stop-shop approach, explain the products, the value proposition, and how they can support the government’s sanitation goals</li> <li>The local one-stop-shop and sanitarian or other health center staff agree on a schedule of community visits to do product presentations. Depending on whether villages have been triggered already, this can be done after CLTS triggering on the same day, or at a later date.</li> <li>The sanitarians and the one-stop-shop work with community-level health cadres to invite households to the triggering event and/or product presentations. The one-stop-shop often enters into an agreement with the health cadre, offering them training and the opportunity to become a commission-based sales agent.</li> <li>Together, the one-stop-shop and the health cadre develop a social map. These maps are used to prepare for CLTS triggering, and as a source of market information on potential customers and the overall market size.</li> </ul>
<p>Triggering</p>	<ul style="list-style-type: none"> <li>The CLTS facilitators, typically sanitarians or other health officials, conduct CLTS triggering according to the Ministry of Health guidelines.</li> <li>One-stop-shops are invited to attend these events if they are new triggering events. If triggering has already occurred in a community, one-stop-shops arrange a separate visit just for product promotion.</li> </ul>
<p>Post-triggering</p>	<ul style="list-style-type: none"> <li>If communities are ignited, they will usually begin to ask practical questions about how they can change their sanitation situation – and specifically about the costs and materials involved - during the action planning.</li> <li>It depends on the dynamics of the event, but this is generally the cue for the one-stop-shop to get up and make the product presentation, including answering questions from community members about prices, product features, payment options and other services.</li> <li>In follow-up visits, the health cadre works with households who are interested in purchasing by taking orders and coordinated with the one-stop-shop.</li> <li>Once an order is placed by a household, the one-stop-shop will arrange to deliver the materials, set the mason work plan, construct the latrine,</li> </ul>

	and settle the payment with the customer directly.
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## 1.6 Evolving roles for different actors and identifying capacity development needs

In the initial phases, one of the most challenging aspects of program implementation was identifying, understanding and communicating the roles of key government, private sector, external agency and other stakeholders. STBM learned and adapted core roles for different actors during the East Java experience, based on existing organizational structures and experience with on-ground implementation. Although it was clear that roles might evolve over time, these experiences enabled the national team to develop a map of the core roles and functions at each level.

Within Ministry of Health and line agencies, it was necessary to develop coordinating mechanisms across different departments and units, in particular the Health Promotions and the Environmental Health units. In general, the Health Promotions unit is responsible for public education activities including mass media related to health and sanitation. The Health Promotions Unit takes the lead to decide on the mix of media that will be used to communicate messages effectively to the target audience, with input from the Environmental Health Unit during message design. Improving access to sanitation is mainly the task and responsibility of the Environmental Health Unit. They take the lead on supply-side strengthening activities and work to identify, train and support one-stop-shop enterprises, masons, microfinance institutions and facilitate linkage with demand generation activities.

External support is often required to build capacity of each of these units to plan, budget and implement sanitation promotion activities together at sub-national level. The experience in East Java has enabled the Ministry of Health and WSP to develop and refine the tools and systems required to implement a capacity building strategy and financing plan, including:

- A systematic skills gap and training needs assessment for each level of sub-national governance
- The curriculums, materials and methods for developing capacity in different functional areas
- Systems for identifying training participants, provider organizations and trainers
- Institutionalized indicators and evaluation methods for measuring training effectiveness
- A basic implementation planning package, which can be used as the basis for annual planning and budgeting

By using these tools and the basic role mapping, the Ministry of Health and WSP can enable coordination across the program activities and actors, whilst simultaneously building their capacity to manage their roles.

## 1.7 Delivering at Scale through PAMSIMAS Project

As the successes of TSSM were being documented and as government support for the approach grew, the approach was taken up and adopted as national strategy of STBM which should be integrated to a range of new projects that were being planned including PAMSIMAS. PAMSIMAS is a national Government of Indonesia (GoI) program partially funded by a World Bank loan. Through community-driven approaches, PAMSIMAS aims to increase access to low-income and underserved rural and peri-urban populations to improved water and sanitation facilities and improved hygiene behavior<sup>34</sup>.

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<sup>34</sup> PARTNER-LED Investment Design Summary for PAMSIMAS-2. PAMSIMAS is the fourth phase of the Water and Sanitation for Low Income Communities Project (WSLIC). In the first two phases, the project was called by its English acronym - WSLIC (Phase 1: 1993-1999; Phase 2: 2000-

PAMSIMAS was initially designed and implemented at the village level which is different with STBM at the district level. Feedback from village heads soon showed that this was not effective. Facilitators hired by PAMSIMAS were replicating the work of sanitarians on the ground, causing confusion and sometimes frustration.<sup>35</sup>

Starting in FY13, as agreed with the Government, the STBM implementation approach of PAMSIMAS has been revised towards a district-wide approach<sup>36</sup> which allows STBM implementation not only in those villages selected for the project but also across all villages in one district. PAMSIMAS provides one STBM consultant each at provincial and district levels, while at community level PAMSIMAS expects sanitarians and health cadres to undertake CLTS triggering, sanitation supply coordination, and monitoring.<sup>37</sup> There are 32 provinces and 218 districts covered by the project. Within the government there are approximately 50 – 60 staffs working on PAMSIMAS to provide the project with critical support.

During the PCN review meeting, it was agreed that while keeping the focus of intervention in the five provinces, all three TAs under the SURS thematic including this TA will also be expanded to provide support to government on the implementation of STBM program nationwide specifically provinces under PAMSIMAS. The PAMSIMAS project intends to support MoH in implementing the STBM program in 32 provinces, starting in 2013. To ensure complementarity of support provided to MoH, one focal person from WSP has been assigned to engage with MoH to coordinate the World Bank support to STBM implementation, representing both PAMSIMAS and WSP's work. The TA implementation in the five selected provinces were endorsed as a model for replication in the remaining 27 provinces under PAMSIMAS support and the role of WSP provincial coordinators and WSP consultants supporting the STBM secretariat were adjusted to cover PAMSIMAS goals. This arrangement is in line with MoH's request to formalize WSP's support to MoH as an advisory body for the overall STBM implementation in Indonesia. For the supply strengthening activities component in particular, it was clear that PAMSIMAS provinces will receive assistance through mechanism established based on the design of corresponding TA-143167 with an explicitly expressed demand and willingness from government to co-finance, and conditions to be agreed by the PAMSIMAS project team.

Regarding supply improvement, taking up the learning from TSSM and STBM in five provinces implementation, the first milestone that need to be achieved as 27 provinces of PAMSIMAS just started the supply improvement initiative is to establish one-stop shop sanitation entrepreneurs serving within the project area. PAMSIMAS project accommodates this process by allocating budget for the entrepreneurship trainings involving participants of potential entrepreneurs from 32 provinces. By working closely with capacity building team of PAMSIMAS, WSP supported the design of the training curriculum and modules which was basically adopted from the materials developed by the TA. WSP also supported the implementation of the trainings by providing trainers to some key topics such as promotion, simple book keeping, and construction process based on the request from PAMSIMAS. A small number of pioneer active entrepreneurs as the output from the trainings would be enough as evidence to build local government confidence to the approach. It is expected that these pioneers would trigger more government resources allocated into trainings for replication of entrepreneurs within their provinces or districts.

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2008) and since the third phase, the project has been called by its Indonesian acronym - PAMSIMAS (Phase 3: 2008-2012; Phase 4: 2013-2016). AusAID refers to Phase 4 as PAMSIMAS-2.

<sup>35</sup> *From Subsidy to Behavior Change. Scaling up Rural Sanitation Services in Indonesia. A Case for the Science of Delivery Team.* Sarah Glavey.

2014

<sup>36</sup> See annex-1 for more comprehensive explanation on district wide approach

<sup>37</sup> Indonesia SURS update 10 Jan 2014

As described previously, the TA builds the capacity of APPSANI to provide pool of trainers to anticipate any government requests in 5 provinces to support their entrepreneurship trainings. These trainers are mainly active entrepreneurs serving their local market while also providing services to local government as trainers. To create similar mechanism to another 27 provinces of PAMSIMAS which have no active entrepreneurs (APPSANI members) yet in this early stage, the design was then modified. A training of trainers (ToT) was planned as part of the PAMSIMAS project main activity. The projected trainers are PAMSIMAS consultants at provinces and districts level. A curriculum and modules were developed in collaboration of PAMSIMAS and WSP team based on the existing guidance to meet this purpose.

During project monitoring period December 2013 to September 2014, about 18% out of 1,000 potential sanitation entrepreneurs that have been trained have become sanitation entrepreneurs.<sup>38</sup> There are good numbers of active entrepreneurs who are still maintaining their business. For example, in Kabupaten Barru, since early 2014, the sanitation entrepreneurs have sold 300 units of toilets out of a target 500 and in Kabupaten Pelalawan, the sanitation entrepreneur works with local governments to provide toilets in a government program called 'safe and adequate housing', and try to work with private companies to tap CSR fund for sanitation. After receiving training of trainers, about 250 project consultants qualifies as trainers to support local governments with entrepreneurship training.

Although several good examples are promising, there are some issues that have to be addressed. Trained entrepreneurs were having some success but facing their own challenges of scaling up and sustainability. Local adaptations took place as entrepreneurs figured out themselves what was needed to grow their businesses. The key challenge is to develop a support mechanism at local level, and ensure seamless business support for the entrepreneurs as WSP has with APPSANI initiative. PIU of the Ministry of Health needs to discuss the strategy to support the sanitation entrepreneurs initiative with the Bank's task team and WSP-EAP, mainly to remove the critical constraints at local level such as creating sufficient support mechanism, linking with financial institutions or other possible financing mechanism, and increasing local governments' ownership and initiative.

Current project monitoring mechanism of supply related activities is still limited for the project implementers only. There is limited local government involvement in the monitoring process. Even though all of the changes of the project methodology in PAMSIMAS have been formally agreed and stated in the project documents, understanding and experience on sanitation supply strengthening activities among the project implementers is still limited which affects government ownership to these activities including the capacity to conduct monitoring process to entrepreneurs' progress. Learning from implementation of STBM in 5 provinces, this will affect replication of sanitation entrepreneurs which relies on local government investment to facilitating entrepreneurship trainings.

The strategy and activities conducted in this TA were basically influenced and determined by the target area market characteristics of those 5 provinces where the market infrastructure is considered well developed. The one-stop shop business model promoted in this TA, for example, would not solely be sufficient to fill the gap of sanitation supply chain for certain PAMSIMAS area with specific characteristics such as area with poor market infrastructure and difficult to reach. In the broad sense of the rural sanitation market approach, identification or understanding on target area characteristics is the most critical initial phase. Therefore, mapping or categorizing these area based on their different market condition is required in advance before designing the strategy and activities to be implemented.

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<sup>38</sup> Pamsimas Project Aide Memoire, Implementation Support Mission for Pamsimas. October 2014

## 2. Analyzing the Effects of Sanitation Firms and CLTS Triggering to Improved Sanitation

While a growing body of evidence indicates that CLTS is an effective method for increasing access to improved sanitation, to date there has been minimal research on the impact of sanitation firms on access to improved sanitation. In part, this is due to the fact that this approach is still emerging, and there has not been sufficient time to collect the data needed for rigorous evaluation. However, there are also significant methodological challenges in evaluating private sector approaches to development, due to the limited control over where the firms will work – making it difficult to establish a counterfactual.<sup>39</sup>

To find out whether there is a positive relationship between the presence of one-stop-shop entrepreneurs and access to sanitation in the communities where they work, a comparison by propensity score matching on villages from 3 provinces (East Java, Bali and West Nusa Tenggara) was conducted under the TA.

### 2.1 Comparison by Propensity Score Matching

Experimental impact evaluation methods are often difficult to implement when assessing interventions involving the private sector. Implementers have limited control over where firms can choose to operate, making it difficult to randomly assign treatment and control locations – a prerequisite for a randomized control trial. However, quasi-experimental techniques can be used to estimate a counterfactual when randomization is not possible.

To compare the estimated impact of the presence of an APPSANI-supported sanitation business on villages that have also had CLTS triggering activities, three separate data sets were merged:

- PODES 2011 – a national census of the main demographic, economic, social and geographic characteristics of all villages in Indonesia.
- APPSANI Member Data – List of villages in Java, Bali and West Nusa Tenggara where APPSANI-supported businesses have worked. Between 2009 and 2013, APPSANI members had worked in a total of 137 villages.
- TSSM Project Data – Population and monthly sanitation coverage data for all villages in Java, Bali and West Nusa Tenggara, including those that have had CLTS triggering activities and those which have not.

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<sup>39</sup> For an impact evaluation to effectively determine whether the intervention being tested had a causal effect on the change observed, there must be a counterfactual – in other words, what would access to improved sanitation be in a given village if it had not had CLTS triggering or a sanitation firm active in the village. Since it is impossible to answer this question using a single village, various statistical techniques attempt to establish identical treatment (ie: CLTS or sanitation firm in the village) and control groups (ie: no CLTS or sanitation firm in the village). In a randomized control trial, the treatment and control groups are chosen randomly, making the two groups perfectly identical for evaluation purposes. In many cases it is impossible to assign treatment randomly. In the cases, matching and regression-based techniques can be used to estimate a counterfactual.

Using propensity score matching<sup>40</sup>, villages with CLTS triggering (control, n=9,958) were compared with villages that had also had an APPSANI firm present at some point in the previous three years (treatment, n=92). It was hypothesized that having a firm present in the village would strengthen the ability of the private sector to respond to the increased demand for improved sanitation generated by CLTS activities, increasing the overall rate of coverage in the treatment villages in November 2014.

Based on the analysis, controlling for other effects, villages with both CLTS triggering and an APPSANI firm present have improved sanitation coverage rates (as of November 2014) 5 percentage points higher than villages with only CLTS activities.

These findings are statistically significant at the 5% level. Due to the limited sample size of treated villages (n=92), future analysis based on updated data on APPSANI activities should provide additional insights. For example, the subset of villages with APPSANI firm present (n=137) included 92 villages that also had CLTS triggering activities and 45 villages with no CLTS triggering. Due to the small sample size, it was not possible to compare the incremental treatment effect of CLTS triggering in this case.

In addition to the quasi-experimental evaluation of APPSANI activities, the same dataset was also used to compare villages that have had CLTS triggering activities (treatment, n=9,958) versus villages that have not (control, n=11,840), using the same propensity score matching approach.

*Table 5. Propensity Score Matching to Estimate the Impact of CLTS and Sanitation Firms on Access to Improved Sanitation*

Method	Village with Sanitation Firm (Includes Villages with and without CLTS Triggering)		Villages with CLTS Triggering Only		Difference (Percentage Points)	p-Value
	% Improved Sanitation	Number of Villages	% Improved Sanitation	Number of Villages		
Nearest Neighbor	60%	137	55%	21,798	5	0.025
Kernel Matching	60%	137	52%	21,798	8	0.000
Caliper	60%	137	52%	21,798	8	0.000

Method	Village with Sanitation Firm (Includes Only Villages with CLTS Triggering)		Villages with CLTS Triggering Only		Difference	p-Value
	% Improved Sanitation	Number of Villages	% Improved Sanitation	Number of Villages		
Nearest Neighbor	61%	92	56%	9,958	5	0.064
Kernel Matching	61%	92	55%	9,958	5	0.005
Caliper	61%	92	55%	9,958	6	0.004

Method	Villages with CLTS Triggering (Includes Villages with and without Sanitation Firms)		Villages with no CLTS Triggering (Includes Villages with and without Sanitation Firms)		Difference	p-Value
	% Improved Sanitation	Number of Villages	% Improved Sanitation	Number of Villages		
Nearest Neighbor	55%	9,956	51%	11,840	4	0.000
Kernel Matching	55%	9,956	51%	11,840	4	0.000
Caliper	55%	9,956	50%	11,840	5	0.000

Based on the analysis and controlling for other effects, CLTS villages have improved sanitation coverage rates (as of November 2014) 5 percentage points higher than villages that have not had CLTS triggering activities.

<sup>40</sup> Unlike regression analysis, propensity score matching is a quasi-experimental method that uses an algorithmic approach to pair treated and non-treated units based on observable characteristics (for this case, characteristics included village population, proximity to bodies of water, province, access to basic services, child mortality rates, etc.). Once paired, the units can be evaluated using similar techniques as randomized control trials. To test for robustness, several algorithms were tested, including nearest neighbor matching, radius matching and kernel matching.

The findings are highly statistically significant at the 1% level. The results are in line with the findings from a randomized control trial of 168 communities and 2,100 households previously conducted by WSP (Cameron, Shah and Oliva 2013), which found that CLTS-triggered villages have improved sanitation coverage 3 percentage points higher than the control villages. This study also found that CLTS-triggered villages had rates of open defecation 6 percentage points lower, and a 30% decrease in incidences of diarrhea.

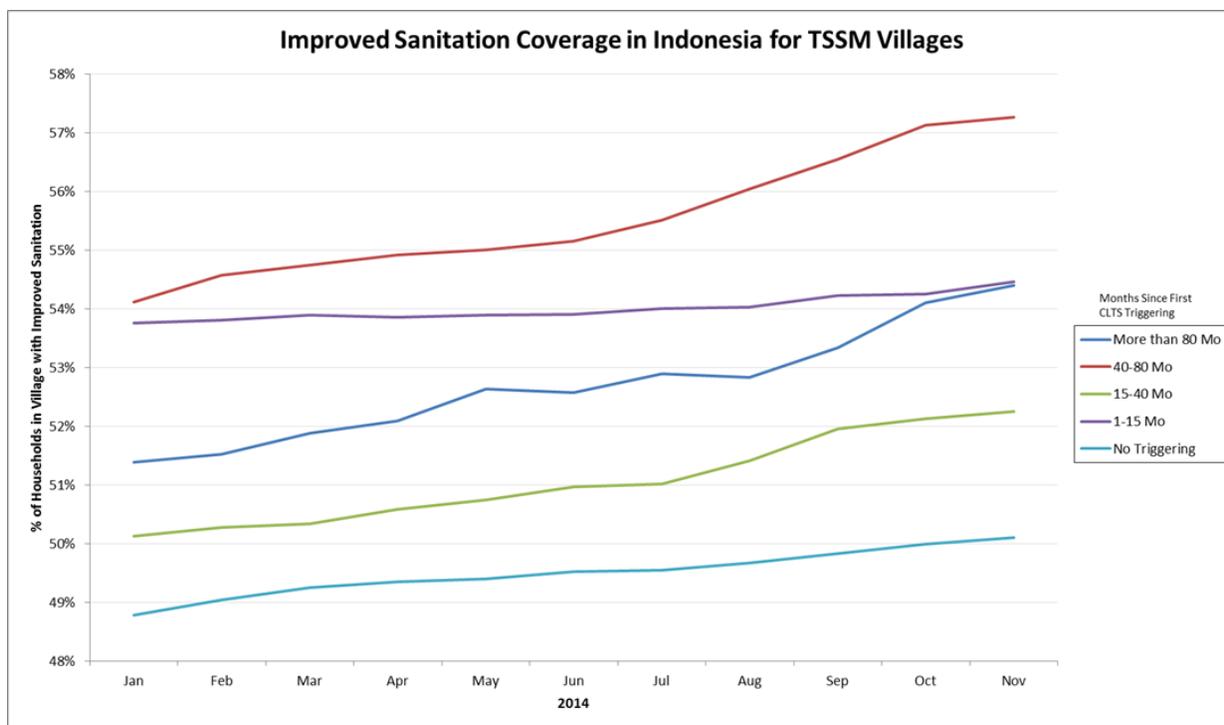
While the two analyses cannot be directly compared, it appears that efforts to improve access to improved sanitation in rural Indonesia are more effective when interventions include both a demand-side approach (CLTS) and supply-side approach (support to develop sanitation enterprises).

## **2.2 Analysis of Improved Sanitation Adoption Since Triggering**

Using 2014 TSSM project data on village population and improved sanitation coverage by month, CLTS-triggered villages were disaggregated into four cohorts, based on the number of months that had passed since the first CLTS triggering event in the village. While villages that have not yet had triggering activities experienced modest growth in coverage over the preceding year, CLTS cohorts all saw increased levels of coverage. However, increases in coverage rates were higher for older cohorts (those that had first had CLTS triggering activities 40-80 months ago, or more than 80 months ago).

The analysis does not control for differences in characteristics between villages. However, it does suggest that adoption of improved sanitation may not happen immediately after the initial CLTS triggering activities. Instead, villages may see a gradual increase in access to improved sanitation over time, with the rate of access accelerating over time. This implies that multiple triggering events over a long time period are required to shift norms around defecation practices, suggesting areas for future research.

*Figure 7. Households in Village with Improved Sanitation*

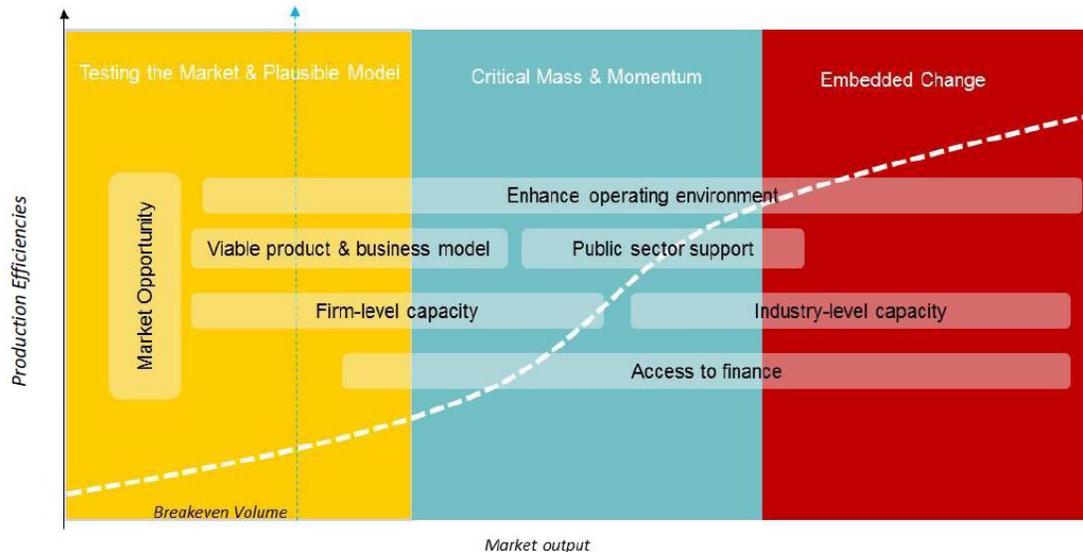


### 3. Summary Results and Lessons Learned

The rural sanitation market development TA to Indonesia started off with the premise that providing access to sanitation at scale requires much deeper involvement from the private sector, due to the significant gap between the funding available for service provision and the investment needed to expand coverage. The private sector can bring the resources to help fill this gap. Additionally, the private sector is potentially better positioned to provide efficient, innovative and sustainable service delivery. However, sustainable private sector services must be profitable. Currently, too few products and services desirable to the poor are offered at prices they can afford, due to limited competition, innovation, and the high costs associated with serving these market segments.

WSP’s market development approach sought to eliminate barriers that result in lower private supply of services and higher costs to the poor. These barriers might be related to balancing financial viability of businesses and the low ability to pay of poor customers or the limited ability of investors to identify market opportunities and address non-commercial risks. WSP supports governments in the reform of policies that crowd out or restrict participation from the private sector. By engaging new market entrants, supporting appropriate public policies and addressing the key barriers driving up costs, WSP assists in improving the confidence of market actors and creating a “Pathway to Scale.” To understand the key factors influencing market development and build evidence for the theory of change, a set of critical success factors had been identified that are needed for pro-poor sanitation markets to work at scale. (See figure 8).

Figure 8. DPSP Theory of Change Diagram



First, a supportive **business environment** is required. Unless a reasonably supportive macroeconomic environment, stable political situation and favorable public attitudes towards private provision of services are in place, a private sector approach is unlikely to succeed. If the necessary business environment is in place, the first step is to test the market – building confidence for buyers, sellers and the public sector through smaller, hands-on trials.

Testing the market requires an opportunity: If there is not a sufficiently large **potential market** willing to pay for water and sanitation services, few firms will be interested in entering the market. If a potential market exists, firms need to have **appropriate products and business models** that can profitably meet the needs of low income market segments. Firms also require a sufficient level of **managerial and technical capacity** to serve this market efficiently. **Industry-level capacity** and **public sector support** is also critical. Finally, both households and firms must be able to **access financing** if needed.

Of these seven factors, the most relevant ones for Indonesia’s Rural Sanitation Market Development are discussed below.

### 3.1 No short cuts in sanitation entrepreneur and business model development

The presence of a sanitation entrepreneur is associated with a higher achievement of improved sanitation outcomes than community-led sanitation demand creation alone. However, this TA found that in fostering the development of a sanitation industry, there are no short-cuts. Initially, the initiative focused on training masons who were omnipresent in the Indonesian countryside. Training masons proved to be an overly narrow approach that did not address the range of market gaps faced by low income households. The TA re-designed the nature of how sanitation services and products are delivered, introducing a turnkey solution and innovations in construction that lowered the cost of installation. This markets-based approach to rural sanitation may initially take more time to establish a foundation for scale, but the TA has shown that once the demand and supply-side constraints have been addressed there is much greater potential for scale and long-term sustainability.

### 3.2 Wanted: entrepreneurs who can sell sanitation

In the early stages of the TA, training tended to attract many district health sanitarians who were familiar with the topic of sanitation. However, sanitarians often had other commitments and did not have the entrepreneurial drive often found in successful business-owners. On average, non-sanitarian enterprises spend five to eight hours per day on their sanitation businesses, compared to just three to four hours per day among sanitarian enterprises. Due to their greater time commitment and business experience, non-sanitarians tend to have stronger business performance.

APPSANI now encourages a much broader range of potential businesses and the explicit recruitment of non-sanitarians. Despite the shift towards non-sanitarians, APPSANI enterprises are encouraged to maintain close relationships with local health workers and village leaders as an essential ingredient for success.

APPSANI also relies on the government to support local recruitment of potential candidates, but uses tools such as a short video that explains the one-stop-shop business opportunity and encourages businesses to apply. A range of criteria (Box 1) and standardized assessment tools are used to assess the training candidate's motivation and experience.

*Box 1. Selecting high-potential applicants for enterprise training*

Enterprises must apply to attend the Sanitation Entrepreneur Training, and applications are scored based on a number of key criteria:

- Educational background and work experience
- Communication skills
- Business management experience and planning, including experience running one's own business and articulation of a clear business idea
- Funding sources and financial capacity to start up a sanitation business
- Work demands, including overall health and willingness to be 'looked down on by others' for working in the sanitation industry
- Financial and time commitment to the training itself (payment of training fees)
- Motivation

Despite improvements, the current process for recruitment and training has seen a relatively low conversion rate from trainee to active business.<sup>41</sup> Of the 1,026 participants trained by APPSANI in five provinces, only about one-fifth of them (210 enterprises) went on to become active APPSANI enterprises. This relatively lower figure had been anticipated since the TA also allow a shorter version of training to be conducted. This shorter version (about 20% of the overall trainings), the 2.0 training version, was designed merely to meet the most common budget available within the local governments that is for two days of training. The objective of this training was adjusted. It emphasizes on promotional and sales management aspect of one-stop shop business model. It is expected that by seeing evidence that there are demand from households for the product it will generate local government interest to conduct the complete set of the training.

While many one-stop-shop entrepreneurs are now in business, there is a growing need to maintain the quality of the services by standardizing the way the entrepreneurs operate their business. When the one-stop-shop business model was introduced, not all members had the same ability to apply the

<sup>41</sup> Compare to ILO (International Labor Organization)'s Start and Improve Your Business (SIYB) entrepreneurship model conducted in Indonesia between 2008 – 2011 at 40% of start-up business rate with training and after training support, <http://blog.stikom.edu/nunuk/files/2012/11/3B3-Nicki-Ferland.pdf>

business process according to what they received at the training or even made necessary adjustment and compromise the business model. Based on the 2012 assessment, most respondents felt that they have technical skills they need to be successful. However they were less confident that they have managerial and financial skills necessary to run their businesses. Only 35% of the members surveyed had financial statements.<sup>42</sup>

This suggest that further work is needed to improve the process. Some of the identified success factors for converting participants into enterprises include:

- Quality of the training: qualified and experienced facilitators including local entrepreneur, good support from local health offices and village heads where practical trainings take place, training venue and equipment/tools, etc.
- Mentoring support post-training: After initial training, further mentoring support is provided by the trainers through periodic visits to the enterprise for one-on-one support. Enterprises are also networked through regular exposure visits and bi-monthly APPSANI meetings to share experiences. This helps the entrepreneurs to access and build relationships with local health center staff especially for market data and promotion activities; access suppliers for mold and other building materials, financing for working capital and consumer loans, and information of best practices from other entrepreneurs.
- Market readiness: i.e. the degree of existing consumer awareness and demand in the given location. This is related with the enabling environment of STBM implementation where the entrepreneur operates.

### 3.3 Better viable business through sales territory recruitment and franchising

Although servicing a much wider market than masons, one-stop-shops still operate in a relatively small catchment area, selling an average of ten units per month and servicing a relatively small geographic area, typically comprised of 200 to 1,000 households. A June 2012 survey of enterprises noted that all exhibited a similar pattern of strong initial growth, followed by a gradual decline in sales per month. Since each enterprise works in a small number of villages within a sub-district, once the bulk of the potential market has been served, there is limited opportunity for new sales within a village at the current price points, and with current sales tactics.

To grow their sales, enterprise must expand into other villages or sub-districts, implying increased travel time and cost. Because most entrepreneurs spend only about one-third of their time managing their sanitation businesses, they may not have sufficient resources or interest to manage large numbers of installations simultaneously, to supervise larger sales territories or to pre-finance their costs, particularly where they offer installation through amortized payments.

These significant scale barriers must be better understood and addressed if entrepreneurs are to remain profitable and expand their operations.<sup>43</sup> From their perspective, enterprises noted that critical barriers such as lack of consumer and business finance, lack of support from some villages and districts, and lack

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<sup>42</sup> Ikeda, J. 2012. APPSANI Member Survey and Focus Groups: Identifying Challenges to Growth and Defining Future APPSANI Services. Unpublished.

<sup>43</sup> Ikeda, J. 2012. APPSANI Member Survey and Focus Groups: Identifying Challenges to Growth and Defining Future APPSANI Services. Unpublished.

of business knowledge were holding them back from expanding their sanitation activities.<sup>44</sup>

The APPSANI association is also facing size and scale challenges. The TA initiative supported APPSANI's small secretariat to recruit and train new enterprises, support existing members, and play other roles previously undertaken by the government and external consultants. Although it has been able to expand its membership base and its services, its current business model is heavily reliant on government and grant-based sources of funding. Many member businesses are too dispersed and far away and do not have the time to fully engage with the association, for example, attending its bi-monthly meetings. The small-scale, geographically confined nature of the one-stop-shop enterprises themselves make it difficult for APPSANI to sustain and scale. APPSANI needs to consistently grow its member base in order to cover its costs. Yet as membership grows, marginal costs to deliver member services rise.

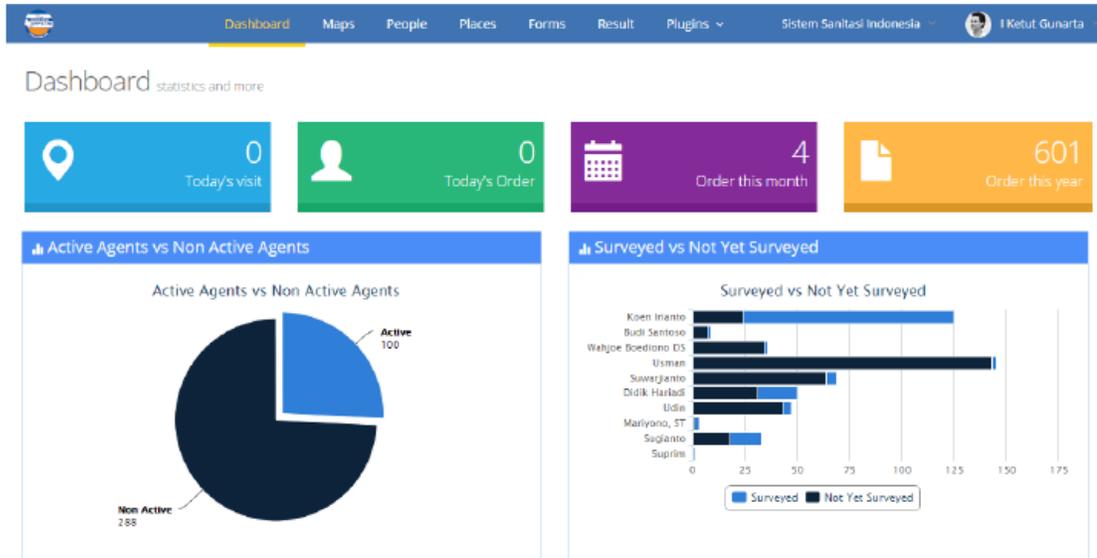
In light of these challenges, APPSANI and its members began a pilot to explore the opportunity for changes to the business model. In March 2014, APPSANI began working with 8 one-stop-shop enterprises in four districts in East Java to test a 'social franchise' model whereby APPSANI would take on a much stronger role within the business network. This model has several key features:

- 1) **APPSANI will emphasize a standardized service delivery model** and more strictly enforce its Standard Operating Procedures (SOPs) for enterprises operating under the APPSANI brand.
- 2) **APPSANI manages the sales force directly:** In the new pilot, APPSANI trains and recruits sales agents, and centrally takes all orders directly from these agents. APPSANI then distributes the orders to enterprises based on their geographic proximity to the customer. This is quite different to the current model in which each enterprise is responsible for training and recruiting their own sales agents, and managing their orders independently. APPSANI recovers some of the costs related to sales force management by retaining a percentage of the sales commission fee.
- 3) **APPSANI utilizes a mobile app and IT platform:** Centralized order taking is enabled by the use of a mobile app. When a sales agent gets a new order, she/he sends an SMS text with the household and village details to APPSANI. APPSANI then sends these orders out to enterprises equipped with smart phones. Each enterprise regularly updates information using the mobile app, so that APPSANI can monitor progress on orders, deliveries and constructions for each enterprise, and ensure that they pay their sales agents the appropriate commissions. The mobile app enables the enterprises to better track costs and revenues, and to monitor the performance of the sales agents. The system provides this information to APPSANI in real time through an on-line dashboard that can be shared with government.

*Figure 9. Dashboard of APPSANI Web-based*

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<sup>44</sup> Ikeda, J. 2012. APPSANI Member Survey and Focus Groups: Identifying Challenges to Growth and Defining Future APPSANI Services. Unpublished.



- 4) **APPSANI members do not compete with each other:** By centralizing the sales and order management functions, APPSANI effectively eliminates market competition among the enterprises involved in the pilot. APPSANI assigns a designated sales area (usually one or two sub-districts) to each enterprise, and arranges agreements to ensure that they will not actively compete with each other.

In the pilot, no social franchise fee was charged. So far, APPSANI has trialed this system with 11 entrepreneurs, and has directly trained about 291 sales agents from 7 districts. The first pilot ran for 6 months from March to August 2014. Preliminary data indicate that participating enterprises have sold 16 latrines per month, a 44% increase in monthly sales average, coming from 6 entrepreneurs who are actively using the system during the pilot. However, the remaining 5 entrepreneurs faced difficulties in using the IT system mainly due to their limited experience in using a smartphone. As of the time of writing this report, the pilot is being reviewed, in particular to synchronize the business process with the web-based system/application.

By standardizing services and centralizing some core business functions, APPSANI can move towards a new social franchise model that generates operating efficiencies over a larger service area. Standardization has been a key element of this evolution, since it enables APPSANI to build its brand through more consistent quality in product and service delivery.

At present, however, it is still unclear how much enterprises will be willing to pay for these benefits, for instance, through franchise fees. APPSANI can recover some costs by retaining part of the per-latrine sales commissions, and there are other potential sources of revenue, such as the per-latrine fees linked to microfinance loans. Nonetheless, the financial viability of this model will need to be established. Even if this new model cannot achieve full financial sustainability at first, compared to the current industry association the social franchise may be more scalable due to its improved operating efficiencies.

### 3.4 Industry associations form and evolve organically

The formation and growth of APPSANI did not happen overnight. The initial concept grew slowly out of discussions among enterprises themselves, after they had practical experience running one-stop-shops.

Learning from experience elsewhere, the opportunity for success was deemed to be higher if it were initiated and led by the members themselves. While the project did in fact initiate the idea of forming an association, the TA carefully created an environment and momentum for this to happen 'organically' from members. The key to this process was to create common/shared values of members to achieve certain goals in relation to rural sanitation development. The TA then provided access to resources needed and facilitated the process for this association to develop and grow to perform their role.

Once established, it took a couple of years for APPSANI to put all of its systems in place and begin to build up momentum and membership. The key to APPSANI's membership growth so far has been the fact that its services address specific member needs. Members have identified access to finance, business support and government linkages as the main reasons why they chose to join APPSANI. Services themselves have come on-line over time, usually by piloting with a small group of members before expanding to the entire network. For example, APPSANI is currently trialing an MFI partnership model with selected enterprises, which will soon be expanded to all members. This approach to service roll-out has allowed for progressive learning among APPSANI staff and members, and step-by-step improvements to service provision.

The potential evolution of the APPSANI model from a network of independent businesses to a more centralized social franchise is a recent development in the life of the association, and may yet evolve in different directions. Arguably, the social franchise model has emerged through the process of industry development itself, and may not have been possible at the outset when the viability of a rural sanitation business model was still unproven. The decision to work together in a franchise-style model has grown from a bottom-up process whereby sanitation enterprises have grown to trust one another and to see increasing benefits for themselves through deeper dependency and collaboration. While external facilitation support by WSP and others had a role to play, the process and evolution of APPSANI demonstrates that industry development can be facilitated but does not happen in a directed, top-down approach.

### **3.5 Symbiotic relationship between entrepreneurs and local health officers**

To follow the sanitation ladder, the role of government through local health officers is key for the success of enterprises in delivering sanitation supply. They are the key actors in generating demand for better sanitation behavior change which results in demand for sanitation products offered by these enterprises. One-stop-shop entrepreneurs report the most success when they build close working relationships with government health staff and link their sales efforts to broader CLTS and demand promotion activities. One of the critical barriers for sanitation entrepreneurs is the conversion of potential demand to real consumer demand; that is, from a generally felt need to stop open defecation, to the actual purchase an improved latrine product. The investment required to change sanitation behaviors and establish new social norms is significant, and it may not be realistic to expect that the private sector alone can fully bear this cost. The TA recognizes the primary responsibility of the Government of Indonesia to support communities to end open defecation and promote household investment in improved sanitation, and recognizes the value of a partnership with the private sector to achieve their public policy goals.

In focus groups conducted in 2012, enterprises with the highest volumes of sales identified partnerships with sanitarians, district health center staff, health workers, and village heads as the most important contributing factors to their success. Entrepreneurs that have good relationships with health staff have greater access to market intelligence and potential customers. As part of the CLTS process, district

health centers play a major role in gathering and updating a social map with details of each household and their sanitation status. Entrepreneurs re-purpose this data as market intelligence on prospective customers, and use it to set daily and monthly sales targets and door-to-door sales routes. Under STBM, promoting the adoption of better sanitation practices is the job of primary health center staff, sanitarians, midwives and other local leaders. People trust them as credible source of information. Entrepreneurs that successfully tap into the primary health center network are able to obtain referrals and introductions to communities, gain greater credibility with potential customers, and access to up-to-date market information.

The learning and experience from East Java point to the critical role the local private sector can play in both achieving and sustaining open defecation free communities. The initial program logic assumed that households within triggered communities would climb a 'sanitation ladder' from very low cost, homegrown innovations inspired by the community triggering process, to increasing levels of service as communities seek to maintain their ODF status over time. This logic implies that CLTS triggering should therefore happen first, followed by other efforts that emphasize the available sanitation facilities. In fact, the market research clearly identified specific sanitation product preferences and perceptions that exist across the population, even before triggering. Households did not simply change their dissatisfaction with 'basic' lower-cost dry pit latrines, and in many cases opted to jump directly to the desired pour-flush latrine types or delay construction until they could afford this option.

Coupled with the shift away from mason-led business models, these findings among households led the program to shift to a more integrated and flexible approach, in which one-stop-shop enterprises are present at triggering events and able to introduce available products and services at the post-triggering stage, and to follow up with potential customers afterwards. In some cases, where CLTS has not yet occurred, one-stop-shops take the initiative to organize their own community product presentations, paying for marketing events at village level which include information about the products and behavior change messages. District-level staff responsible for CLTS triggering see one-stop-shop enterprises as partners, and as additional channels of important sanitation information. For their part, high-performing enterprises identify good relationships with community and district governments as one of the most critical success factors for achieving high sales volumes. This experience challenges the notion that there is a fixed or rigid order to 'sequencing' and product/service promotion. In any community, people play different roles: they are both community members working for the collective good, and consumers seeking the right products that suit their needs and taste. These roles and drivers are not mutually exclusive. In fact, they are mutually reinforcing, difficult to separate, and in the field the distinctions can blur into insignificance.

The clearer differentiation of roles between entrepreneurs and local health officers on the ground ensures that the process of CLTS triggering is not compromised. Private sector enterprises are able to complement and support the community-led process, but are still free to operate and reach as many customers as possible to fill sanitation needs.

### **3.6 Beginning program supply-side strengthening activities before CLTS can help build momentum, government buy-in and enterprise capacity so that demand generation activities can have the most impact**

The strategic decision to kick-off new provincial activities with the enterprise training and exposure visit was taken for two primary reasons. The evidence and experience from East Java indicated that developing private sector capacity can take time, and that it is most effective to begin this process as

early as possible so that adequate supply is available to meet the consumer demand unlocked by CLTS and behavior change activities. Thus, one important goal and expected outcome was for the two or three enterprises from each province to go back to their homes and set up pioneer one-stop-shop enterprises straight away. These pioneers could then be the provincial-level proof of concepts, leaders and examples to other potential enterprises at provincial level. This ‘seeing is believing’ approach appears to be working in the scale up provinces. By October 2014, there are more than 560 potential entrepreneurs participated in the trainings facilitated by government with more than 150 are now in business.

On the public sector side, the national program team recognized that the ‘demand’ components of CLTS and behavior change in the STBM strategy was more well known and easier for government health staff to understand, compared to unfamiliar activities related to market and enterprise development. In Indonesia, CLTS has been embraced as the core national approach to rural sanitation, but how this ‘demand generation’ can link with ‘supply-side strengthening’ is much less understood. The team wanted sub-national health staff to see for themselves how the one-stop-shop business model works, but more importantly, how it is integrated within the broader STBM framework. This serves to emphasize the linkages between ‘demand’ and ‘supply’ as the critical area of focus. By showing positive examples of how the whole system functions, the aim was to get provincial and district staff excited and ready to commit resources to all the necessary activities. The intensive enterprise training and exposure helped them to clearly understand what their role would be in market facilitation – not just in a vague sense of ‘improving local production’, but specifically in terms of the concrete steps and actions, and investments in funds and people, that are required to build a market. The expected outcome was that health staff would be ready to go back to their provinces and allocate funding not just for CLTS, but also for enterprise training and support activities.

### **3.7 Mapping the expected roles and capacities of different stakeholders is essential to the process of strengthening rural sanitation markets**

To effectively scale up, actors and institutions need to understand their different roles, and what resources are required to fulfill them. This takes strong buy-in and ownership from each level of local government. In Indonesia, provincial and district governments make funding decisions for the majority of health activities. Health authorities have many competing priorities and only limited funds. The national team at the STBM Secretariat has worked with the provincial governors and health coordinators to make sure that the STBM is a line item in every budget. This is an important first step, but it is not enough to ensure the allocated or actual level of funding, or that activities will take place with quality. Even in East Java, where political will was high, many districts were allocated only a fraction of their proposed budgets for their sanitation plans.

The easier it is for local government to understand the entire STBM concept, the more likely they will be to develop concrete tasks, steps, and roles that can be used as the basis for budgeting and planning. Role mapping and additional planning resources have made it possible to streamline the scaling up process, while creating ownership among local authorities. In the case of market facilitation, many of the roles are new and require additional support and capacity development. Once the overall concept is clear, however, most local health authorities can see the benefits of working with the private sector. They recognize that enterprises are willing to spend their own resources to market and sell their products, which effectively means that they are absorbing some promotional costs. More importantly, when households that can afford to pay invest in their own sanitation facility, the government can more effectively target support to those most in need. The emergence of the APPSANI industry association

allows the government to understand the key points of contact and roles of the private sector, and helps to improve and centralize coordination.

Despite the progress, significant challenges still remain. Budgeting and planning cycles and bureaucratic processes differ from one local government to another. Annual planning and mid-year budget revisions do not always happen as planned, and this affects local government ability to execute its CLTS, promotions, and training plans. In addition, high turn-over and staff rotation within the line agencies means institutional knowledge is frequently lost. Lack of capacity and skill remains a constant issue. Roles for different actors evolve over time as institutions and individuals gain confidence, exposure, capacity, and as the market itself changes. These dynamic forces requires a constant feedback loop and revisiting the role mapping exercise to ensure that different actors are doing what they can do best.

### **3.8 Facilitating collaboration between one-stop shop enterprises with potential finance institutions is crucial in providing consumer with credit to purchase toilet**

Despite local-level collaboration between enterprises and local finance institutions (FI) emerging, they have not yet scaled up. Lessons identified that might cause this are:

- Low awareness of potential FIs on sanitation financing. The TA addressed this issue by conducting a dissemination workshop inviting potential FIs to learn and share experiences. Following the workshop, some of these have conducted visits with more experienced ones.
- A more systematic support and technical assistance is crucial for FIs to start their sanitation financing product. The TA developed collaboration with the international NGO Water.org to provide these FIs with the technical support.
- Limited availability of low-cost of finance has hindered them to finance customers as requested by enterprises who now have hundreds of pending orders waiting to be served.
- In the case of BRI Bank – one of the biggest national banks in Indonesia – the challenge is on how to mainstream sanitation consumer financing product across all branch offices. Some collaboration between enterprises and BRI Bank has happened locally but remains at the discretion of the corresponding unit manager.

In most of the cases, facilitation between enterprises with potential FI partner was crucial to be provided. APPSANI played crucial rule in this process.

## Annex-1

### District-Wide Approach is:

An approach that positioned district's government as the coordinator of the whole STBM implementation, with characteristics as follows:

- Location; the program is gradually implemented in all villages in the district.
- Implementation; by optimizing existing institutional structures in local government's coverage and partnerships.
- Funding; by optimizing various source of funds, particularly local budget, health operational fund, sub-district's, village's and private's budget, including community contribution.
- Partnership with external agencies; external agencies such as projects provide technical assistance and initial fund for inception activities to demonstrate implementation strategy, while private sector can act as the partner in the implementation.

	<b>Project Based</b>	<b>District-Wide Approach</b>
<b>Intervention Location</b>	Selected villages	Gradually in all villages in districts and cities
<b>Triggering Team</b>	Projects' community facilitators	Community cadres led by the sanitarians
<b>Intervention Type</b>	Emphasized in CLTS	Comprehensive and holistic intervention in Demand, Supply and Enabling Environment
<b>Monitoring and Evaluation Mechanism</b>	Projects' community facilitators and consultants through data management assistants	Sanitarians, district health offices, through STBM website.
<b>Consultants' Role</b>	Projects' implementer	Implementing partners and enabler
<b>Implementation Budget</b>	Projects' fund	From various sources, including local government's budget, health operational budget, and other sources.
<b>Institutions' Engagement</b>	Focus in health offices and their immediate networks.	Coordinated by health offices and involves other related offices at local level that have potential to support rural sanitation development program, such as local planning board office, information and communication office, health promotion office, public work office, marketing sanitation, and financing institutions.

## Annex-2

# Applying Value Engineering to the Development of an Economic and Hygienic Latrine Design (Case Study: Sanitation Entrepreneurs in East Java)

### **Muhammad Jefi Nur Cahyono**

Department of Industrial Engineering, Institut Teknologi Sepuluh Nopember  
Kampus Keputih, Sukolilo, Surabaya, 60111  
Tel: 031-5939361, Fax: 031-5939361  
Email: [jefinurcahyo@gmail.com](mailto:jefinurcahyo@gmail.com)

### **Lantip Trisunarno**

Department of Industrial Engineering, Institut Teknologi Sepuluh Nopember  
Kampus Keputih, Sukolilo, Surabaya, 60111  
Tel: 031-5939361, Fax: 031-5939361  
Email: [lantip@ie.its.ac.id](mailto:lantip@ie.its.ac.id)

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**Abstract.** Sanitation is a problem that requires serious attention. One of the causes of poor sanitation in Indonesia is the large number of people who practice open defecation. Difficulty accessing hygienic toilets exacerbates the situation. And the high-costs involved makes hygienic toilets unaffordable to the majority of people. This research, therefore, will attempt to analyse existing latrine designs and develop new latrine designs that meet the criteria for a hygienic latrine and are also economical. This research uses value engineering to analyse and develop latrine design alternatives. The stages involved follow those of the value engineering job plan, which are information, creation, analysis, development and presentation. The research produced three alternatives of improved latrine designs. The value and affordability of each of the alternatives was then compared to select the best alternative, i.e. the one that is of the highest value and the most economical. Thus, a hygienic and economic latrine design is produced that does not sacrifice the quality of the latrine.

**Key Words:** Sanitation, Value Engineering, Latrine, Design

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## INTRODUCTION

Indonesia has an urgent need for clean water supply and hygienic sanitation. But Indonesia faces enormous challenges in meeting this need. A 2006 study by the Indonesia Sanitation Sector Development Program (ISSDP) indicated that 47% of people still defecate in the open, in rivers, fields, ponds, gardens, and open spaces. This behaviour causes the contamination of water sources by *Escherichia coli* bacteria. *Escherichia coli* bacteria in human faeces will eventually enter and contaminate water sources that people use for drinking water. A Basic Human Service (BHS) survey of household water management behaviour found that 99.20% of households boil water for drinking, but that 47.50% of this water still contained *Escherichia coli* bacteria. This is the cause of the high incidence of diarrhoea in Indonesia. In 2006, 423 per thousand population of all ages from 16 provinces suffered diarrhoea outbreaks, with a case fatality rate (CFR) of 2.52%. Another study, by the World Bank, found that poor sanitation is a cause of death in children under 3 years, with a mortality rate of 19% or around 100,000 children dying from diarrhoea each year, and an estimated economic loss of 2.3% of gross domestic product (World Bank, 2007).

According to the Phase 1 ESI study by the Water and Sanitation Program, the economic cost of poor sanitation

in Indonesia amounts to USD 6.3 billion (IDR 56 trillion) annually, at 2005 prices; the equivalent of 2.3% of gross domestic product. The Phase 2 ESI study conducted by WSP in 2012 found links between sanitation and tourism and the economy in Indonesia. Of the 15% of foreign tourists who said they did not want to return to Indonesia, 40% cited poor sanitation in Indonesia as the reason for not wishing to return.

A key component, and one of the main pillars in the implementation of this program, is sanitation providers. The task of these providers is to provide and meet consumer demand for hygienic latrines. Before setting up shop, these providers were given training. After three years of implementing the program, with regular monitoring and support, there has been an interesting finding among the providers: latrine designs and production processes vary from one provider to another. These design differences have had negative impacts on latrine production costs and meeting the criteria for hygienic latrines. These two aspects are of particular concern to sanitation providers, because as well as being profit-seeking entrepreneurs, they also have a social responsibility to contributing to the eradication of open defecation.

Therefore, latrine design standards are needed so that low production cost latrines can be produced which are of a quality that meet the criteria for a hygienic latrine. One method of designing a product, in this case a latrine, is value engineering. Value engineering is the method of choice because it has advantages in terms of controlling cost by using an approach that analyses the value of its function without compromising on the desired quality and reliability.

## THE CONCEPT OF VALUE ENGINEERING

Following is an explanation of value engineering, which is used as the basis for this research.

### Definition of value

Value has a subjective meaning, particularly where moral, social and aesthetic values are concerned (Fanani, 2006). Value in engineering, meanwhile, has much to do with economics. This makes value difficult to differentiate from price, because a value is largely determined by function, and function by the price of the components that make up a product.

With regard to the development of a project or product, value is also closely related to cost which makes it difficult to differentiate value from cost. This is because:

- Value is measured by use, while price or cost is determined by the price of the components that make up the product.
- Measurement of value tends to be subjective, while cost is determined by the expenditure made to create the product.

Value is defined as the possible financial return on a product or service. In other words, value is the use or benefit provided by a product or service. Economic value consists of 4 types:

- Use value: refers to the extent to which the general attributes of a product enable it to perform its function.
- Esteem value: refers to the extent to which a product can attract consumers.
- Cost value: refers to the cost of the materials, labour, equipment and other costs of producing the product.
- Exchange value: refers to how much consumers want to sacrifice or spend or exchange in return for something they want.

The value engineering definition of value is as follows:

$$\text{Value index} = \frac{\text{worth}}{\text{Cost}} \quad (1)$$

Where :

Worth                      = The benefit from use of function, or benefit of a project or product  
 Cost                         = The cost of producing a project or product

Or, can be written as follows:

$$\text{Value} = \frac{\text{performance}}{\text{Cost}} \quad (2)$$

Where :

$$\begin{aligned} \text{Performance} &= \text{Performance of a project or product} \\ \text{Cost} &= \text{The cost of producing a project or product} \end{aligned}$$

There is no unit of measure for value. If cost is measured in rupiahs, then performance should be measured in rupiahs as well, which means that performance score need to be converted to performance in rupiahs. This conversion assumes an initial value of 1. The resulting equation is as follows:

Value

$$V_0 = \frac{P_0}{C_0} = 1 \quad (3)$$

The formula for comparing the initial design value of alternative products is:

$$V_0 = V_n \quad (4)$$

$$\frac{P_0}{C_0} = \frac{P_n}{C_n} \quad (5)$$

$$C'_n = \frac{P_n \cdot C_0}{P_0} \quad (6)$$

C'n is a rupiah measure of performance Pn. So:

$$C_n = P_n \quad (7)$$

$$V_n = \frac{P_n}{C_n} = \frac{C'_n}{C_n} \quad (8)$$

Where :

- Vo = Initial value (design value)
- Vn = Value of alternative product n
- Po = Initial design performance
- Pn = Performance of alternative product n
- Co = Initial design cost
- Cn = Cost of alternative product n
- C'n = Performance of alternative in rupiahs

## Definition of Value Engineering

Value engineering is defined as a systematic and organised method of analysing the functions of systems, products and services for the purpose of achieving or providing essential functions that achieve the lowest life cycle cost and are consistent with performance, reliability quality and safety standards. As explained above, several terms are commonly used to describe value engineering (Dell'isola, 1975) The Society of American Value Engineers International (SAVE International) uses the broader term value methodology for value engineering.

## Value Engineering Job Plan

Value engineering follows a systematic step-by-step methodology known as the value engineering job plan. With the aim of reducing costs without sacrificing the quality of work, the value engineering job plan has a number of organised, systematic and focused stages based on Dell'Isola's theory (1975). These stages are:

### Information

During this stage, as much information as possible is gathered about the design, background, constraints, and projected cost of the project or product. Then function analysis is carried out to rank relative product cost as a system or sub-system to identify potential high cost areas.

The function analysis aims to classify the basic functions and secondary functions, and to compare cost and worth, in order to classify these functions. This stage also generates the critical criteria that will be used as the basis for creating alternatives in the next stage.

### Creation

The aim of this stage is to create ideas for alternative designs that fulfil the basic functions of the chosen item. This stage involves brainstorming ideas, without any decisions or analysis being made.

### Analysis

The aim of this stage is to analyse the alternatives identified during the creative stage in order to select the best alternative as the proposed design in the recommendation stage. The techniques and methods used in the analysis and selection of alternatives thrown up in the previous stage are cost analysis, evaluation matrix, criteria weighting and performance evaluation.

### Development

After analysis of the alternatives, the final stage in the value engineering job plan is development. In this stage, criteria are applied to select the best alternative. According to Dell'Isola (1975), in this stage all alternatives should be considered carefully and in detail to ensure that the highest value and most economical alternative is offered.

### Presentation

Presentation is the final stage in the value engineering job plan. This stage involves presentation of the best alternative, recommended based on the outcome of the development stage. The presentation must explain all aspects in detail, including benefits and costs, performance achieved, and cost savings achieved.

## CASE STUDY

The purpose of the case study is to answer essential questions about how value engineering can be used to help provide a standard hygienic latrine design and calculate the cost saving from applying value engineering to select latrine design alternatives. The object of the study is sanitation entrepreneurs who are members of Asosiasi Pengelola dan Pemberdayaan Sanitasi (APPSANI), an association of sanitation entrepreneurs in East Java. The steps, stages and methods applied include: information, creation, analysis, development and presentation.

### Information

The information stage was used to explore in more detail the knowledge and understanding of the products/projects to be discussed, and to define the functions of these products. During this stage, data were collected. The cost of producing the existing latrine design was IDR 1,331,000. Figure 1 shows the existing latrine design, which uses a stack of reinforced concrete rings as the septic tank.

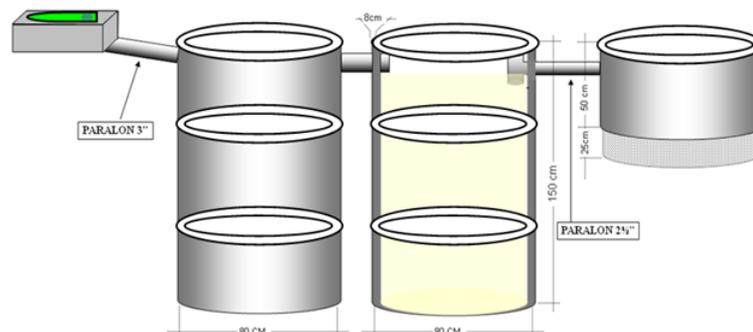


Figure 1: Existing latrine design type 3-3-1

To identify the root causes, a root cause analysis (RCA) was performed, using a fishbone diagram. This was followed by a failure mode and effect analysis (FMEA) to identify the effects of the problems and to determine the risk priority number (RPN).

From field observations and interviews with sanitation experts, the following advantages and disadvantages of latrine design type 3-3-1 were identified:

Advantages:

1. Construction of the latrine does not require much equipment

Disadvantages:

1. The septic tank is susceptible to leaks
2. Constructing the latrines is costly
3. Installing the reinforced concrete rings is time consuming
4. Installing the reinforced concrete rings in a small space is difficult
5. The slab is not level (sloping)

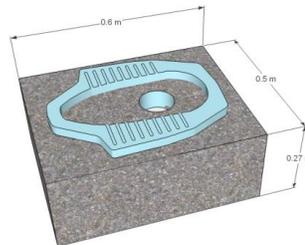
From the root cause analysis and failure mode and effect analysis, it was possible to identify criteria that would be used as the basis for developing and selecting latrine designs. These criteria are:

1. Cost efficiency
2. Practicality of the latrine construction process
3. Resistance of the reinforced concrete rings to leaks
4. The speed of the construction process
5. Practicality of the equipment used
6. Flexibility in the space for installing the latrine

## Creation

The aim of this stage was to develop a maximum of alternatives that would address the existing problems and meet the criteria identified in the information stage. The design development was divided into two parts: development of the construction design and the latrine construction process.

The slab dimensions of length = 0.6 m, width = 0.5 m and depth = 0.27 m were chosen because these are the dimensions of the standard slab currently used.



Construction stability calculations found that reinforced concrete rings of 0.07 m thickness offered good stability. Because the weight of the construction is below the soil bearing capacity, the construction stability standard is met. A thickness of 0.07 m is the minimum, and of 0.08 m is the maximum. A thickness of 0.07 m was selected for materials cost efficiency purposes. If the reinforced concrete rings were thicker than 0.08 m, the soil would not be able to support the load and the reinforced concrete rings would sink. If the thickness of the reinforced concrete rings were less than 0.07m, they would not be able resist the soil pressure from the sides and the rings would move or slip to the side, causing breakage or cracking. The overall dimensions of the rings used were: inner diameter = 1m, outer diameter = 1.14m, thickness = 0.07 m, depth = 1.5 m. The diameter of the inlet pipe matched the diameter of the septic tank (outer diameter = 0.14 m, inner diameter = 1m, and thickness = 0.07 m). The dimensions of the ventilation were in accordance with National Standard 03-2398-2002; the air pipe used was 50 mm (2 inches) in diameter, with a minimum height of 25 cm from the surface of the soil, and positioned on the second septic tank.

Figures 4, 5, and 6 show the revised hygienic latrine design.

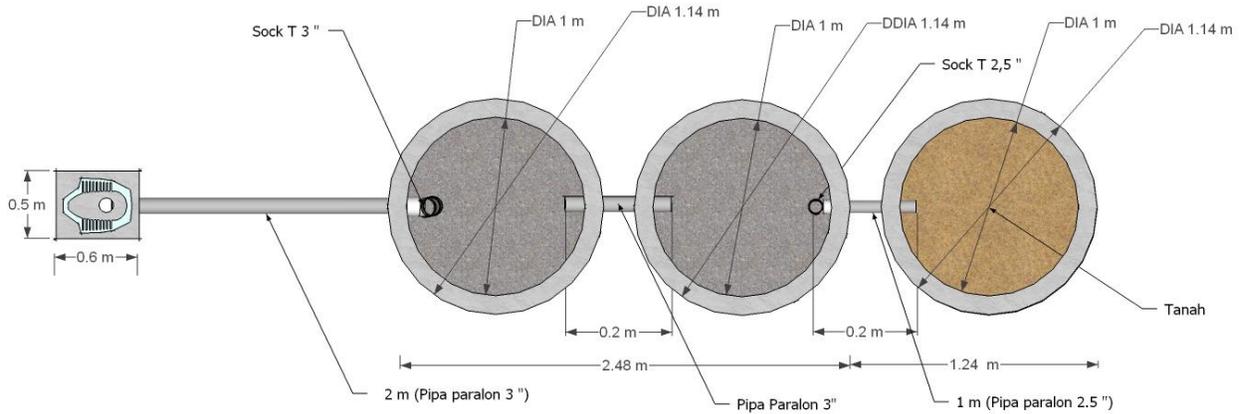


Figure 4: Top view of the revised latrine design

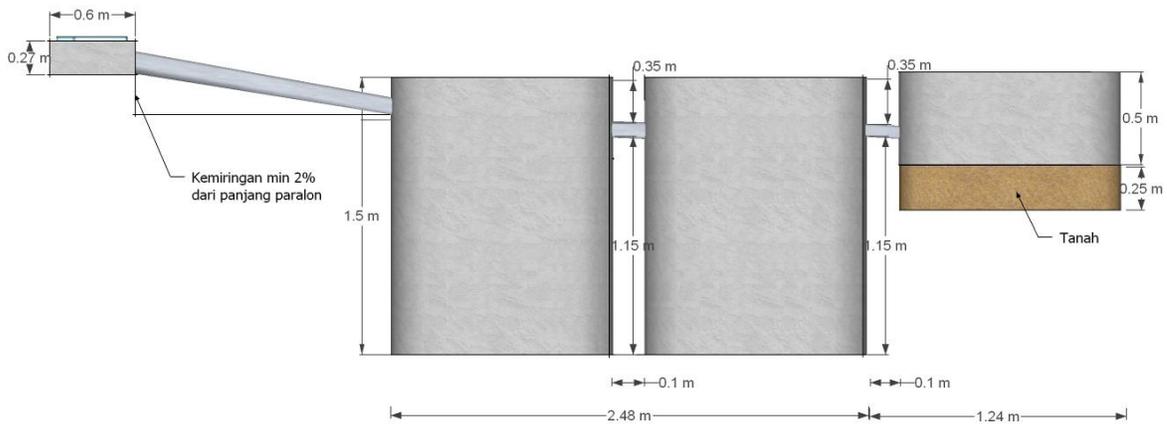


Figure Error! No text of specified style in document.: Side view of the revised latrine design

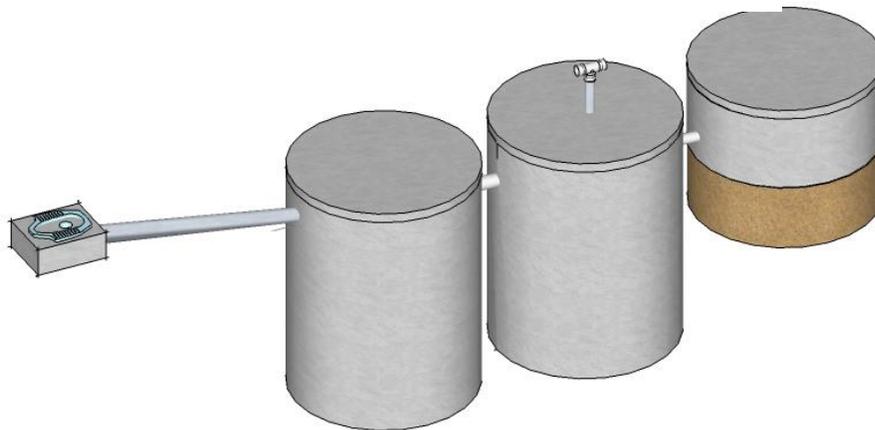


Figure 6: ISO view of the revised latrine design

Having created a design that meets the hygiene and construction criteria, latrine construction alternatives were explored. The alternatives differ in the process of construction of the septic tank and inlet pipe, because the main problem with the existing design is in the septic tank and inlet pipe. The problem with the slab was more to do with human error when measuring. Following are the alternative methods of constructing the septic tank:

1. **Alternative 1**

Rather than using a stack of three reinforced concrete rings, this alternative uses one reinforced concrete ring which is then placed in a hole that has been made in the ground.

**2. Alternative 2**

This alternative involves casting inner and outer moulds on site, of the following dimensions:

- a. Outer septic tank mould : diameter = 1.14 m, height = 1,5 m
- b. Inner septic tank mould : diameter = 1 m, height = 1.5 m
- c. Outer inlet pipe mould: diameter = 1.14 m, height = 0.5 m
- d. Inner inlet pipe mould: diameter = 1 m, height = 0.5 m

**3. Alternative 3**

This alternative involves casting inner moulds only on site. The soil performs the function of the outer moulds. The dimensions are:

- a. Septic tank mould: diameter = 1 m, height = 1.5 m
- b. Inlet pipe mould: diameter = 1 m, height = 0.5 m

**Analysis**

This stage began with an evaluation matrix analysis to analyse and rank the alternatives, the results of which were as follows:

Table 1: Final Evaluation Matrix Analysis Results

No	Alternative	Criteria					
		Criteria-1	Criteria-2	Criteria-3	Criteria-4	Criteria-5	Criteria-6
1	Baseline	11	9	10	15	15	17
2	1	13	7	19	12	9	9
3	2	17	15	23	18	20	18
4	3	24	23	24	25	22	24

The next step was to weight each of the criterion using an analytic hierarchy process matrix, the results of which were as follows:

Table 2: Criteria Weighting

Criteria Weighting					
Criteria-1	Criteria-2	Criteria-3	Criteria-4	Criteria-5	Criteria-6
0.183	0.232	0.35	0.068	0.102	0.065

Then the performance value was calculated by multiplying the total scores in the evaluation matrix by the weighting for each criteria, for each alternative and the baseline. The resulting overall performance scores were as follows:

Table 3: Performance Scores

No	Alternative	Criteria Weighting						Performance (P)
		Criteria-1	Criteria-2	Criteria-3	Criteria-4	Criteria-5	Criteria-6	
		0.183	0.232	0.35	0.068	0.102	0.065	
1	Baseline	11	9	10	15	15	17	11.256
2	1	13	7	19	12	9	9	12.972
3	2	17	15	23	18	20	18	19.075
4	3	24	23	24	25	22	24	23.632

## Development

In the development stage, cost analysis and value calculations were performed based on the performance scores obtained from the analysis using the evaluation matrix for each alternative and the baseline. The total cost of alternative 1 (total cost of materials plus total wages) was IDR 1,177,171; the total cost of alternative 2 was IDR 1,028,770, and the total cost of alternative 3 was IDR 978,770.

In the previous stages, performance scores and total cost for each alternative were calculated. These figures were then compared to obtain a value for each alternative, which were as follows:

Table 4: Values of the Alternatives

No	Alternative	Performance (P)	Cost (C )	Monetary conversion of performance score	Value	Ranking
1	Baseline	11.256	IDR 1,331,000	IDR 1,331,000	1.00	4
2	1	12.972	IDR 1,177,171	IDR 1,533,914	1.30	3
3	2	19.075	IDR 1,028,770	IDR 2,255,581	2.19	2
4	3	23.632	IDR 978,770	IDR 2,794,438	2.86	1

Based on the total cost of each alternative, the cost savings are as follows:

Table 5: Cost Savings

Baseline	Alternative #	Cost Saving	Percentage
IDR 1,331,000	1	IDR 1,177,171	12%
	2	IDR 1,028,770	23%
	3	IDR 978,770	26%

## Presentation

This stage is the presentation of the selected alternative, which was alternative 3, casting the inner rings of the septic tank and inlet pipe on site. The main problem with the existing latrine design is leaking of the joints between the rings used for the septic tank, which causes bacterial contamination of the environment. It is essential, therefore that the design of the septic tank be watertight. Thus, joint free septic tank is the best alternative for resolving this problem.

Also, given that the main target market for these latrines is poor consumers, the latrines produced must not only meet the environmental health standards (not contaminate the environment), but also be affordable yet perform to the standard of existing latrines or better.

The results of data processing performed in this case study indicate that alternative 3 is the best design. At 23.632, the performance score of alternative 3 is higher than that of the other alternatives. Also, compared with the baseline, the cost savings of alternative 3 are the best, at 26% or IDR 352,230. Finally, the septic tank in alternative 3 would not need emptying for 10 years, against 6 years 3 months for the baseline.

## CONCLUSIONS

Applying value engineering to create a hygienic and economical latrine design, it can be concluded that the best design is alternative 3, the specifications for which are:

- a. Slab: 0.6 m x 0.5 m x 0.27 m
- b. Septic tank: inner diameter = 1 m , thickness = 0.07 m, height = 1.5 m
- c. Inlet pipe: inner diameter = 1 m, height of ring = 0.5 m, sitting on the soil without a bottom lid. Depth of the hole below the ring = 0.25m
- d. The casting is done on site, using only one mould (inner ring)
- e. Ventilation: pipe 50 mm (2") in diameter, and minimum height of 0.25 m from the surface of the soil.
- f. Pipe gradient: 2% of the length of the pipe.

In terms of cost efficiency, the cost saving of alternative 3 is 26% or IDR 325,230 compared with the existing latrine design.

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**Annex-3**

**Entrepreneur Application Form**  
**(Revised Based on Female Entrepreneur Study)**

**Sanitation Entrepreneur Training Application Form**

**A. GENERAL INFORMATION**

1. Name: \_\_\_\_\_

2. Gender:                      Male                      Female

3. Marital Status:              Married                      Unmarried                      Widowed

4. Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Telephone: \_\_\_\_\_

6. Date of Birth: \_\_\_\_\_

**B. EDUCATIONAL BACKGROUND**

7. What are your educational qualifications?

Program	Name of Educational Institute	Qualifications	Year
Primary			
Junior Secondary			
Senior Secondary			
Level 1 Diploma			
Level 2 Diploma			
Bachelor			
Master			

8. How many total years of education do you have in a sanitation-related field? (i.e. community health, environmental health)
- a. 0
  - b. 1-2
  - c. 3-4
  - d. 5 or more

**C. WORK EXPERIENCE**

9. What work experience do you have?

Position	Duration (years)	Dates

10. How many total years of work experience do you have in a sanitation-related occupation?
- a. 0
  - b. 1-5
  - c. 6-10
  - d. 11 or more

**D. ENTREPRENEURIAL SKILLS (choose one answer)**

11. What are your communication skills like?
- a. I have difficulty expressing ideas
  - b. I can express ideas to others
  - c. I can express ideas to and convince others
  - d. I can express ideas to, convince, and teach others
12. Do you enjoy talking to new people?
- a. Yes, I am very comfortable approaching new people
  - b. I am somewhat comfortable approaching new people
  - c. No, I do not enjoy approaching new people

13. I am willing to take risks in order to succeed at new endeavors.

- a. Very true
- b. Somewhat true
- c. Not true

14. I am happy to try new things and be an example for my peers.

- a. Very true
- b. Somewhat true
- c. Not true

**E. BUSINESS EXPERIENCE**

15. Have you ever been involved in a business?                      Yes                      No

16. Do you currently have a business?                                      Yes                      No

17. Why did you start your business and what type of business is it?

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**F. SANITATION BUSINESS**

18. How do you perceive opportunities in the healthy latrine business?

- a. Interesting products/services
- b. Uninteresting products/services

19. Are you interested in starting a sanitation business?

- a. Yes, will definitely start business
- b. Yes, but need training first
- c. Unsure
- d. No, because I do not have interest in a sanitation business

20. Please elaborate:

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21. Have you taken any steps to start this business?                      Yes                      No



If no, please elaborate on reason:

---

28. Are you prepared to participate fully in this training?                      Yes                      No

**I. ANY OTHER INFORMATION THAT YOU FEEL IS RELEVANT TO YOUR APPLICATION**

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Name and Signature of Applicant

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## Annex-4

### Appendix 6: Entrepreneur Selection Criteria (Revised Based on Female Entrepreneur Study)

#### **GUIDELINES FOR EVALUATING THE SANITATION PROVIDER TRAINING APPLICATION FORMS**

Scores are given for each of the following criteria:

- B. Educational background
- C. Work experience
- D. Entrepreneurial skills
- E. Business experience
- F. Sanitation Business
- G. Funding sources
- H. Commitment

The scores given for each criteria are weighted, because each criterion has a range of indicators.

#### **B. Educational Background**

Maximum score of 8 for this criterion.

<b>Educational Qualifications</b>	<b>Score</b>
Level 1/Level 3 Diploma/ Degree	4
Senior secondary	3
Junior secondary	2
Primary	0

<b>Years of education in sanitation-related field</b>	<b>Score</b>
5 or more	4
3-4	3
1-2	2
0	0

TOTAL:

#### **C. Work Experience**

Maximum score of 8 for this criterion.

<b>Total years of work experience</b>	<b>Score</b>
11 or more	4
6-10	3
1-5	2

0	0
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Total years of sanitation-related experience	Score
11 or more	4
6-10	3
1-5	2
0	0

TOTAL:

#### D. Entrepreneurial Skills

Maximum score of 8 for this criterion.

Communication Skills	Score
Excellent (can communicate ideas, and persuade and teach others)	2
Good (can communicate ideas, and persuade others)	1
Fair (can communicate ideas)	1
Poor (cannot communicate ideas to others)	0

Talking to new people	Score
Yes, I am very comfortable approaching new people	2
I am somewhat comfortable approaching new people	1
No, I do not enjoy approaching new people	0

Taking on new challenges	Score
Very true	2
Somewhat true	1
Not true	0

Happy to try new things and be example	Score
Very true	2
Somewhat true	1
Not true	0

TOTAL:

### E. Business Experience

Maximum score of 8 for this criterion.

Indicator	Score
Has run a sanitation business in the past	8
Currently has own business (non-sanitation related)	6
Has been involved in a business in the past	4

TOTAL:

### F. Sanitation Business

Maximum score of 8 for this criterion.

Perception of opportunities in healthy latrine business	Score
Interesting products/services	1
Uninteresting products/services	0

Interested in starting a sanitation business	Score
Yes, will definitely start business	3
Yes, but need training first	2
Unsure, but open to possibility	1
No, because I do not have interest in a sanitation business	Reject Application

\*\*If have taken legitimate steps to start the business, plus 3 points.

Comfortable overseeing masons/other employees	Score
Very comfortable	2
Somewhat comfortable	1
Not comfortable	0

Illness that would prevent you from working in field	Score
No	2
Yes, but has plan for overcoming	1
Yes, and no plan for overcoming	Reject Application

### G. Funding Sources

Maximum score of 10 for this criterion.

Indicator	Score
Has the financial capacity to start up a sanitation business without any financial support or loans	4
Hopes to get the startup funds from family friends or other sources	2
Has no guarantee or hope of financial support from others	0

Willing to take on financial risk	Score
Yes	4
No	0

If the entrepreneur scores 0 on both questions in this category, reject application.

TOTAL:

### H. Commitment

Maximum score of 8 for this criterion.

Attending the training	Score
Yes, to start a business	5
No, for another reason	Reject Application

Prepared to participate fully	Score
Yes	3
No	Reject Application

TOTAL:

TOTAL SCORE FOR APPLICATION:

ENGLISH



BUSINESS PROCESS FOR

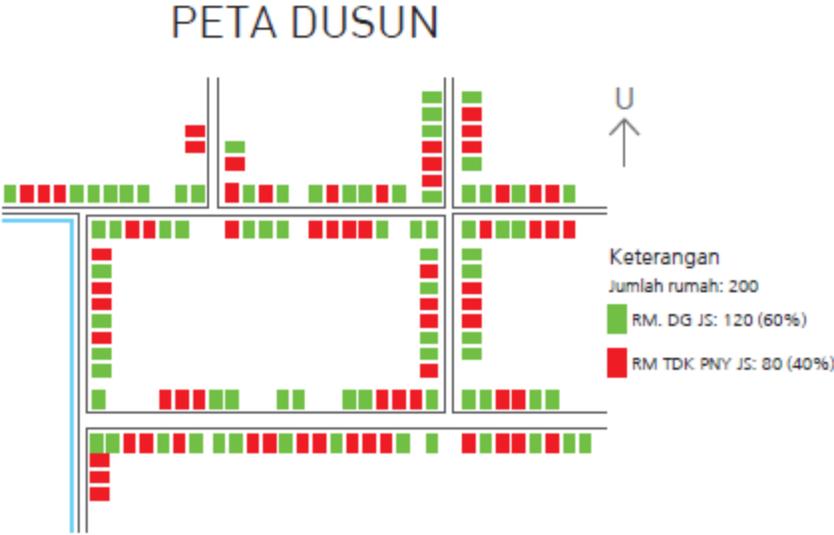
# SANITATION ENTREPRENEURS





# 1 GET SOCIAL MAP

For each village under our target market, get the social map.



Social map will show the graphical diagrams and locations of household with healthy toilets and unhealthy ones.

In addition to diagram, it would be better to get the names and specific address.



**2**

## RECORD THE ORDERS

All incoming orders should be recorded in the Order Form and Work Plan Form.

	<b>FORM</b>	Number Revision Date Page	FR-APPSANI-002 00 1-Nov-13 1 of 1
	<b>ORDER ITEM NOTE</b>		

.....  
.....  
.....

NO	QUANTITY	ITEM NAME	PRICE	AMOUNT
			RP	RP

	<b>FORM</b>					Number Revision Date Page	FR-APPSANI-001 00 1-Nov-13 1 of 1
	<b>TOILET WORK PLAN</b>						

NO	NAME	RT	RW	TYPE	INFORMATION	DATE

Every entrepreneur should keep the above records if possible to the last 12 months.



### 3 RECORD THE INCREASE IN SANITATION ACCESS

For every village within our target market, record the increasing access in healthy sanitation. When our business running well, it should be seen in the access of sanitation.

MONTH	NUMBER OF HOUSEHOLDS WITH HEALTHY TOILET	NUMBER OF HOUSEHOLDS WITH HEALTHY TOILET	TOTAL NUMBER OF HOUSEHOLDS	% INCREASING ACCESS OF HEALTHY TOILETS
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				
Jan				
Feb				
Mar				



## 4 ALWAYS INTRODUCE YOUR PRODUCTS

In every follow up after triggering or other opportunity, always do an introduction of your products and services to your prospects.





## 5 **DISTRIBUTE AN INFORMATIVE BROCHURE**

Provide all the critical informations such as types of products, price, and our contact numbers.

**JAMBAH SEHAT PAKET HEMAT...! TINGGAL JONGSKOK...**

<p><b>SMS-1</b></p> <p>FAKET Rp.1.250.000</p> <p>Paralon 3"      Paralon 2 1/2"</p>	<p><b>SMS-2</b></p> <p>FAKET Rp.1.050.000</p> <p>Paralon 3"      Paralon 2 1/2"</p>	<p><b>SMS-3</b></p> <p>FAKET Rp.875.000</p> <p>Paralon 3"      Paralon 2 1/2"</p>
<p><b>SMS-4</b></p> <p>FAKET Rp.725.000</p> <p>Paralon 3"      Paralon 2 1/2"</p>	<p><b>CETAKAN SUPER PAKET</b></p>	

JAMBAH PRODUK "SMS" LEBIH KUAT DAN TAHAN LAMA, KARENA BUIS BETON DICOR LANGSUNG DI TEMPAT TANPA SAMBUNGAN SESUAI PESANAN  
 JAMBAH PRODUK "SMS" DIKERJAKAN OLEH TUKANG SANITASI TERLATIH DAN BERSERTIFIKAT PELATIHAN TUKANG SANITASI YANG DITERBITKAN OLEH WSP (WATER & SANITATION PROGRAM)

**BELEANDA BERMINAT SEGERA HUBUNGI**      Bpk : SUBIANADI  
 Alamat : Kantor PUSKESMAS SUMOBITO JOMBANG  
 Rumah Di BAKALAN Kec. SUMOBITO - JOMBANG Tlp. (0321) 5172448 /  
 Sanitasi Masyarakat Sehat      085854045800 /



6

## ALWAYS RECORD THE START AND FINISH DATE OF INSTALLATION

With this record we could control our masons and also customers satisfactions.

	<b>FORM</b>	Nomor Revision Date Page	PR-APPSANI-005 00 1-Nov-13 1 dari 1
	<b>INSTALLATION FORM</b>		

Installation of

NO	CUSTOMER	START DATE	FINISH DATE	DURATION	VILLAGE	TYPE	SUPERVISOR	MASONS	NOTES



## 7 ASSIGN THE SUPERVISOR TO CONDUCT QUALITY CHECK DURING INSTALLATION

It is recommended to use picture for documentation and to ask the customers to check during construction. As the owner, you should check randomly.



As a priority, make sure the inspection for the parts that could be seen from outside when the product is finished (for instance, the septic tank).



## 8 RECORD THE PRODUCTION COST

As an entrepreneur you should record all your cost diligently. With good records you could save your cost.

**USE ACCOUNTING SOFTWARE  
(BEST PRACTICES).**

	<b>FORM</b>		Number	FR-APPSANI-011
	<b>COST OF GOODS MANUFACTURED</b>		Revision	00
			Date	1-Nov-13
			Page	1 dari 1
<b>COGM COST</b>	<b>PRODUCT/SERVICE TYPE</b>			
Material Cost	3-0	3-2	3-3-1	
Direct Labor Cost (Handyman + Assistant Handyman)				
<b>TOTAL COGM</b>				



## 9 RECORD ALL TRANSACTIONS AND CASHFLOW

To manage the business wells, record all transactions especially the cashflow.

### BEST PRACTICES: USE ACCOUNTING SOFTWARE

		FORM		Number		FR-APPSANI-014	
		CASH FLOW PROJECTION		Revision	00	Date	1-Nov-13
				Date	1-Nov-13		
				Page	1 of 1		
DETAILS		MONTH # (IN THOUSANDS/RP)					
		MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
CASH IN	Cash in / Initial Balance						
	Cash in from Toilet Sales						
	Cash in from Miscellaneous						
	<b>TOTAL CASH IN</b>						
CASH OUT	COGM Cost						
	Operational Cost						
	Miscellaneous Cost						
	<b>TOTAL CASH OUT</b>						
<b>TOTAL ENDING BALANCE</b>							



## 10 RECORD YOUR PROFIT/LOSS

To have a business means to get profit. Every entrepreneur has to know his/her profitability per month.

### BEST PRACTICES: USE ACCOUNTING SOFTWARE

	FORM		Number		FR-APPSANI-015	
	PROFIT AND LOSS PROJECTION		Revision	00	Date	1-Nov-13
			Page	1 dari 1		
DETAILS	MONTH # (IN THOUSANDS/RP)					
	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
Sales Income						
Other Income						
Total COGM						
<b>GROSS PROFIT</b>						
Operational Cost						
<b>PROFIT BEFORE INTEREST</b>						
Interest on Loans						
<b>PROFIT BEFORE TAX</b>						
Business Tax						
<b>NET PROFIT</b>						
<b>TOTAL AMOUNT BY END OF MONTH</b>						





## 12 CREATE BUSINESS PLAN

By having business plan, you could plan in advance your target and capacity to make the business grows.

	<b>FORM</b>		Number	FR-APPSANI-007
	<b>SANITATION BUSINESS PLAN</b>		Revision	00
			Date	1-Nov-13
			Page	1 on 1
OWNER NAME :				
ADDRESS :				
BUSINESS NAME :				
TARGET MARKET		<b>FORM</b>		Number
ADVANTAGE (COMPARED TO COMPETITORS)		<b>PRODUCTION CAPACITY</b>		Revision
TARGET PROFIT			Date	FR-APPSANI-012
TOTAL CAPITAL			Page	00
				1-Nov-13
				1 of 1
	<b>PRODUCT</b>	<b>MAXIMUM MONTHLY SALES CAPACITY</b>	<b>INFORMATION</b>	
	3 - 0			
	3 - 2			
	3 - 3 - 1			



# 13 SET YOUR MONTHLY SALES TARGET

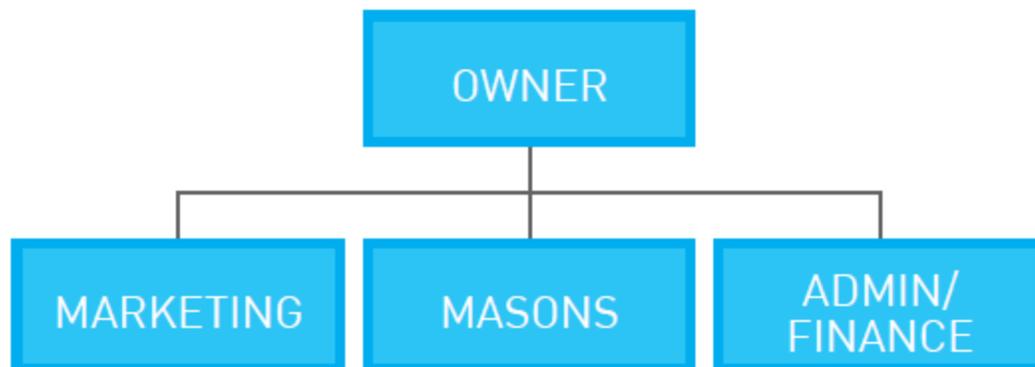
As part of the business plan, you have to set your monthly target. It will make you works productively.

		<b>FORM</b>			Number Revision Date Page		FR-APPSANI-012 00 1-Nov-13 1 of 1	
		<b>SALES PROJECTION</b>						
Product/Service Type	SALES PRICE PER UNIT	NUMBER OF PRODUCT/SERVICE ON MONTH #						
		1	2	3	4	5	6	
3-0								
3-2								
3-3-1								
TOTAL SALES (UNIT)								
TOTAL SALES (RP)								



## 14 WRITE DOWN AND MAKE SURE CLEAR ROLES AND RESPONSIBILITIES

Everyone in the business has to understand his/her roles and responsibilities. Therefore, every employee is accountable for a specific task/function.





## OPPORTUNITIES FOR MICROFINANCE INSTITUTIONS IN INDONESIA'S RURAL SANITATION MARKET

JUNE 2014

The rural sanitation market in Indonesia presents a major opportunity for microfinance institutions (MFIs) to access new customers. The market for improved sanitation options is projected to be 155.9 billion IDR (\$13.5 million) in 2015 alone. Many poor households cannot afford to purchase improved sanitation solutions without additional financial support. The World Bank's Water and Sanitation Program is supporting MFIs in Indonesia identify and target these customers for sanitation loans. This brief analyzes the sanitation market, profiles its potential customers, and presents high-level case studies of successful sanitation loan products from the region.



<b>Key Statistics</b>	Est. potential sanitation loan borrowers, 2015	Est. potential portfolio worth, 2015
	<b>103,938</b>	<b>155.9 billion IDR</b>

Estimates based on BPS census data, JMP data, and the Indonesia Demographic & Health Survey, 2012

### Market Trends

- 
**Emphasis on Sanitation Marketing**  
 The government has increased support for sanitation marketing initiatives combined with Community Led Total Sanitation (CLTS) campaigns to stimulate demand and educate consumers about the importance of improved sanitation.
- 
**Customer Dissatisfaction with Current Sanitation Options**  
 78 million people are have unfulfilled desires with respect to sanitation options and are dissatisfied with their current situation.
- 
**Increased Wealth and Creditworthiness**  
 Indonesia has seen 48% per capita GDP growth from 2005 to 2010 and a 6% reduction in poverty rates. This suggests that households previously unable to apply for sanitation loans may now be more creditworthy.
- 
**Increased Availability of Affordable Sanitation Products**  
 Sanitation products are evolving, with emphasis on improving features and payment options to meet the needs of low-income consumers.

### Why Invest in Sanitation?

Entering the sanitation loan market offers several key benefits to microfinance institutions:



**Access to New Customer Base:** Provision of sanitation loans can enable MFIs to reach previously untapped market segments. Depending on the product type offered, MFIs may also be able to reach new income segments.



**Deepening Engagement with Existing Clients:** Providing new products to current clients can be a cost-effective way to increase revenue. WASH financial products can help improve customer loyalty and client living standards.



**New Sources of Funding:** Donors and NGOs dedicated to improving WASH solutions may be interested in providing additional funds to support sanitation loans.



**Contribution to Social Mission:** Sanitation loans help customers meet basic needs. Offering these products helps MFIs better target the poor and improve the health and well-being of the communities they serve. Improving access to improved sanitation could save Indonesia up to 72.9 trillion IDR (\$6.3 billion) per year.



**Experience to Leverage for Housing Finance:** Providing sanitation loans may help gradually prepare MFIs enter the housing finance market for low-income populations after gaining several years of critical experience.

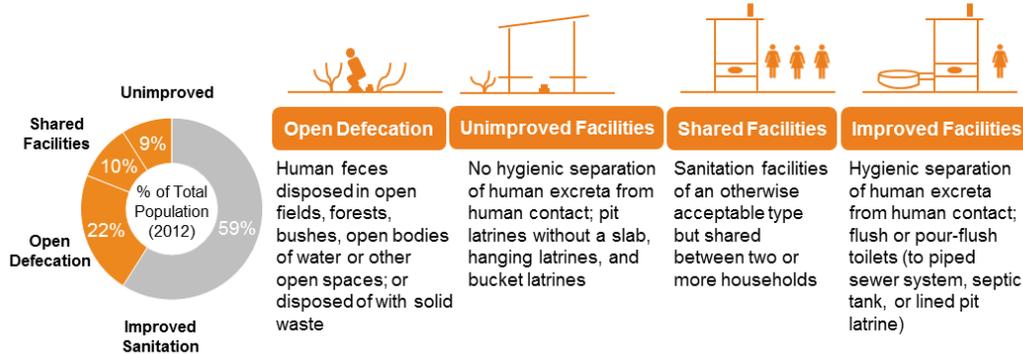
Sources: Primary Interviews; Sy, Jemima, Robert Warner, Jane, Jamieson. "Tapping the Markets: Opportunities for Domestic Investments in Water and Sanitation for the Poor." World Bank, 2014; "Water, Sanitation and Microfinance Toolkit 2: Water, Sanitation and Hygiene Financial Product Development." MicroSave and Water.org. 2013; Joint Monitoring Programme, 2012 data



## Introduction to Indonesia's Rural Sanitation Sector

### Access to Sanitation

#### National Sanitation Service Levels



### Consumer Characteristics

Poor customers have distinct preferences and requirements that influence their decision to purchase sanitation solutions. They are discerning customers who will not settle for sub-optimal sanitation products and services.



#### Ideal Product Qualities

- Durability
- Ease of maintenance
- Safety



#### Non-Price Factors

- Availability of land
- Avoidance of contaminated water sources
- Potential household health impact
- Comfort, modernity, and privacy



#### Buying Experience

- Product and pricing differentiation
- Credit facility (installment payments)
- Packaged product for both toilet and septic tank



#### Desired Add-Ons

- Warranty on installation
- Septic tank emptying service

### Access to Finance

Poor households in Indonesia face several obstacles to accessing finance to purchase sanitation products and services.

- Lack of collateral:** Poor households do not have sufficient assets to use as collateral when applying for loans. Many financial institutions will not accept soft collateral.
- Absence of credit history:** Poor households often do not have sufficient formal financial history to demonstrate creditworthiness.
- Lack of experience with the formal financial system:** Many poor households have never taken out loans or do not have formal bank accounts. They are often unfamiliar with the processes and requirements for loan applications.

### Other Key Players

Several other stakeholders play a critical role in improving access to improved sanitation in rural Indonesia. These stakeholders may be potential partners for MFIs looking to enter the sanitation loan market.



**Sanitarians:** Government health officials who work to promote healthy sanitation in rural areas.



**Sanitation Entrepreneurs:** Small companies who provide materials for and assemble sanitation solutions. Many have formed "one stop shops" for customers. APPSANI, a local trade association, has helped many of these entrepreneurs by providing business development services.

Sources: Primary Interviews; Sy, Jemima; Robert Warner, Jane, Jamieson. "Tapping the Markets: Opportunities for Domestic Investments in Water and Sanitation for the Poor." World Bank, 2014; Nielsen Indonesia, "Total Sanitation and Sanitation Marketing Research Report" March 2009; Water, Sanitation and Microfinance Toolkit 1: Introduction to Opportunities in Water, Sanitation and Hygiene Finance." MicroSave and Water.org, 2013; Joint Monitoring Programme, 2012 data



## Kegiatan Pembiayaan Sanitasi

Meskipun pembiayaan sanitasi adalah hal yang baru di Indonesia, ada banyak contoh-contoh dari dalam dan luar negeri yang menunjukkan bahwa pembiayaan sanitasi dapat berkelanjutan secara finansial, dan sekaligus meningkatkan jumlah nasabah LKM.

### Keuntungan Pembiayaan Sanitasi: Pelajaran dari Luar Negeri

Sektor perbankan di Indonesia dapat belajar dari negara-negara tetangga disekitarnya. Contoh-contoh ini menggambarkan pendekatan berbeda-beda yang dapat diambil LKM untuk mengikutsertakan produk sanitasi ke dalam daftar produk-produk mereka.

#### Kredit kelompok tanpa agunan

##### **Grameen Bank, Bangladesh**

Bank pertama yang menyediakan pinjaman sanitasi di pedesaan Bangladesh; menawarkan pinjaman untuk jamban tanpa agunan selama dua tahun sampai Rp 228.240. Hingga tahun 1998, ~30% anggota telah meminjam dana untuk sanitasi atau air. Saat ini, jamban adalah bagian dari produk KPR yang disediakan *Grameen Bank*.

#### Kelompok desa & pinjaman individu

##### **KREDIT dan VisionFund, Cambodia**

Program pinjaman sanitasi diujicobakan di empat kabupaten; pinjaman sampai Rp 4 juta ditawarkan sampai 12 bulan dengan bunga maksimum 2.85% per bulan untuk perorangan atau kelompok kecil (2-10 orang); 2.000 pinjaman telah disalurkan melalui usaha-usaha jamban; pada bulan ke delapan dari uji coba, pinjaman sanitasi mencapai kemandirian dengan tingkat kegagalan 0%, dan 0% portofolio berisiko (*at risk*) setelah 30 hari.

#### Pinjaman untuk kelompok yang didukung oleh penanam modal yang berbasis sosial

##### **GUARDIAN, India**

Menyediakan modal pinjaman kepada anggota-anggota wanita untuk investasi WASH dengan dukungan dari *Acumen Fund*, *Milaap*, dan *Water.org*; pada tahun 2007-2013, Rp 62.8 milyar telah disalurkan ke 15.700 peminjam, dan mencapai 108% kemandirian operasional.

#### Pinjaman untuk kelompok yang didukung oleh Mitra kerja

##### **Vietnam Bank for Social Policy**

Menarik peminjam dari anggota serikat wanita di Vietnam yang tertarik dengan peluncuran produk pinjaman sanitasi nasional tanpa agunan dan berbunga rendah pada tahun 2004. Pinjaman dana sampai Rp 2.1 juta per RT; 470.000 pinjaman telah diberikan dalam tiga tahun, setara dengan 10% dari total peminjam di *Vietnam Bank*.

Note: Semua pinjaman dilakukan dalam bentuk mata uang lokal, tetapi telah dikonversi menjadi Rupiah untuk perbandingan.

Sumber: Mehta, Meera. "Assessing Microfinance for Water and Sanitation: Exploring Opportunities for Sustainable Scaling Up." Bill & Melinda Gates Foundation, 2008.

### Menjadi Pemimpin: Pengambil Langkah Pertama di Indonesia

Beberapa bank di Indonesia, seperti yang di bawah ini, sudah menawarkan pinjaman untuk perorangan dan kelompok untuk pembelian produk sanitasi. Ada beberapa produk pinjaman yang khusus di pinjaman sanitasi, namun ada beberapa yang digabung dengan produk-produk lain yang sudah ada.

#### Meluncurkan program pinjaman sanitasi berkelompok dengan agunan gaji

##### **Badan Kredit Kecamatan (BKK) Eramoko**

Telah membiayai 75 jamban dalam dua bulan pertama setelah mulai menawarkan pinjaman sanitasi ke kelompok (5 orang) dengan tanggung renteng; setiap anggota kelompok harus memiliki 25% dari total biaya jamban (termasuk instalasi) dalam rekening tabungan mereka masing-masing sebagai jaminan; tenor pinjaman sampai 5 tahun dengan bunga tetap 1.5% per bulan.

"Kami melihat bahwa ada banyak kebutuhan sanitasi yang layak di Wonogiri."

— Pimpinan BKK Eramoko

#### Memperluas jangkauan nasabah melalui pinjaman sanitasi perorangan

##### **Bank Perkreditan Rakyat (BPR) Jombang**

Menawarkan modal dan pinjaman perorangan untuk konsumsi, termasuk jamban, dengan tenor 1-3 tahun dan bunga tetap 1.5% per bulan.

"Efek multiplier [untuk pinjaman sanitasi] sangat besar: banyak orang datang ke BPR Jombang untuk membuka rekening tabungan agar bisa mendapat pinjaman."

—Pimpinan BPR Jombang

Sumber: Wawancara dilakukan di bulan April and Mei 2014



## Market Penetration Strategies

Financial institutions looking to serve the significant untapped sanitation market in Indonesia can build off of lessons learned from international and domestic early movers.

### Leverage Partnerships

Financial institutions can work with strategic partners already knowledgeable about the sector and can provide access to sensitized customers.

#### Build on changing social norms

Local governments and development partners implementing Indonesia's National Community-based Total Sanitation Strategy (Sanitasi Total Berbasis Masyarakat, STBM) are agents of change for sanitation practices. MFIs can piggy-back off of STBM implementation to identify new borrowers.

#### EXAMPLES IN ACTION

The Ministry of Health and East Java Provincial Government piloted STBM at a provincial level, implementing behavior change campaigns to stimulate demand for improved sanitation. By coupling these demand generation activities with product suppliers, the pilot resulted in a 31% increase in the rate of toilet construction. For households that did not construct a toilet, the main barrier was cost.

#### Look for aligned incentives

Latrines businesses can be effective conduits of business for FIs. Sanitation entrepreneurs often cannot afford to provide installment payment plans to their customers, but they can direct their clients to financial institutions offering sanitation loans.

#### EXAMPLES IN ACTION

Asosiasi Pengelola dan Pemberdayaan Sanitasi Indonesia (APPSANI) and BRI have teamed up in a win-win arrangement. Consumers order toilets through APPSANI members, who inform BRI of the orders. BRI provides loans to these buyers, thereby lowering the upfront cost to the consumer. To date, BRI has provided 465 loans for household toilets through this partnership. APPSANI is similarly partnered with BPR Jombang and BKK Eromoko, with a total additional 358 loans.

### Consider Different Loan Product Features

The small size of sanitation loans means MFIs bear a smaller risk per transaction, but also face the challenge of high transaction costs. These potential product features can help mitigate these challenges.

#### Spread risk across groups

Many households cannot provide proportionate collateral for toilet loans. To offset risk, MFIs can offer group loans. FIs can also work with development partners to provide limited period loan guarantees that help reach the poorest households.

#### EXAMPLES IN ACTION

In Cambodia, microfinancer KREDIT offers no-collateral group sanitation loans, where a group of households share default risk and a group of groups shares the risk of access to future loans in the event of default. This structure lowers transaction costs per loan, while also spreading risk across multiple borrowers.

#### Think location and convenience

FIs can offer various features to increase timely repayment of loans, such as "village banking," where a field officer goes into each community on a monthly basis to collect payments. Interest rate structures also provide an opportunity for MFIs to encourage timeline repayments.

#### EXAMPLES IN ACTION

BRI and BPR Jombang are both early movers in Indonesia's sanitation financing market. Both are employing innovative interest rate structures to incentivize their borrowers. BRI decreases rates if payments are made on time in a "carrot" approach. BPR Jombang instead has employed a "stick" approach, increasing interest rates for delinquent payments.

#### Enroll community champions

A consumer's receptiveness to a given message is highly influenced by the message's source. MFIs can identify new viable loan clients through word-of-mouth marketing for sanitation loans by trusted peer intermediaries who have already successfully obtained and paid back a loan.

#### EXAMPLES IN ACTION

Toyola, a Ghanaian business that has sold over 250,000 improved cook stoves across West Africa, encourages sales agents to enroll "evangelists" among their first clients. Since evangelists can generate and report on village demand, agents can prioritize visiting villages with guaranteed sales and avoid missing existing demand. Evangelists receive a commission for their work (e.g. around 5% cash commission or a free stove if they convince 10 friends to purchase).

Sources: Cameron, Lisa, Manisha Shah, Susan Olivia. "Impact Evaluation of a Large-Scale Rural Sanitation Project in Indonesia." World Bank Policy Research Working Paper 6360. 2013. "Marketing Innovative Devices For The Base Of The Pyramid." Hystra, 2013. Primary Interview Notes. "Bending the Learning Curve: Lessons Learned from introducing microfinance loans for sanitation in rural Cambodia." Water & Sanitation Program, 2014.

For more information, contact: [wspcap@worldbank.org](mailto:wspcap@worldbank.org)