

Results, Impacts, and Learning from Improving Sanitation at Scale in East Java, Indonesia



Acknowledgments

This Field Note was prepared by Rebekah Pinto, with valuable inputs provided by Deviariandy Setiawan, Ari Kamasan and Claire Chase. The author also gratefully acknowledges review comments provided by Almud Weitz, WSP Principal Regional Team Leader, and Eduardo Perez, WSP Senior Sanitation Specialist.

Water and Sanitation Program (WSP) reports are published to communicate the results of WSP's work to the development community. Some sources cited may be informal documents that are not readily available.

The findings, interpretations, and conclusions expressed herein are entirely those of the author and should not be attributed to the World Bank or its affiliated organizations, or to members of the Board of Executive Directors of the World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank Group concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

The material in this publication is copyrighted. Requests for permission to reproduce portions of it should be sent to wsp@worldbank.org. WSP encourages the dissemination of its work and will normally grant permission promptly. For more information, please visit www.wsp.org.

© 2013 International Bank for Reconstruction and Development/The World Bank

The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

Contents

Overview	1
Background	2
Departing from Business As Usual: “Light” Technical Assistance for Sanitation Service at Scale	4
Objectives and Targets	4
Results and Learning	7
Measuring Results and Impact	14
Program Effects on Child Health Outcomes.....	14
Lessons Learned from Scaling Up Rural Sanitation in Indonesia	15
References	17

Results, Impacts, and Learning from Improving Sanitation at Scale in East Java, Indonesia



OVERVIEW

Inadequate access to sanitation remains a persistent issue, affecting the lives of millions of children and families especially in poor and rural communities throughout the world. In Indonesia, efforts to expand coverage have barely affected the lives of poorest populations where rampant diarrheal disease continues to affect the health and well-being of the next generation of children. These efforts were further complicated by policies that provided sanitation hardware subsidies limited to populations identified under specific programs, rather than strategies aimed at promoting large-scale sustained behavior change such as awareness building and hygiene education. As a result, Indonesia has the second highest number of open defecators worldwide at 59 million, according to the 2013 update published by the WHO/UNICEF Joint Monitoring Programme (JMP)¹, and lags substantially behind its peers in the region in terms of access to sanitation.

However, in 2005 the Government of Indonesia embarked on a new approach to improving rural sanitation known as Community-Led Total Sanitation (or CLTS) piloted originally in Bangladesh. Instead of focusing on toilet construction, the CLTS approach recognized that sustainable demand for improved sanitation came only when households and communities were part of the process of identifying and addressing the problem. In order to demonstrate the success of this new approach, a small pilot began in 2005 as part of two larger scale water and sanitation programs funded by the World Bank and Asian Development Bank.

The success of this small pilot led to its initial expansion to additional villages and eventually in 2007 to the creation of the Scaling Up Rural Sanitation Program (initially known as the Total Sanitation and Sanitation Marketing Project or TSSM). TSSM, which was a demonstration of a community-led approach at scale², started in the East Java province of Indonesia as a result of collaboration between the Government of Indonesia, Bill & Melinda Gates Foundation and the Water and Sanitation Program (WSP) of the World Bank.

The TSSM approach combines three innovative approaches: (i) CLTS to generate demand; (ii) sanitation marketing to reinforce demand generation and increase supply of sanitation goods and services; and (iii) strategies to strengthen the country's enabling environment so that improvements could grow and ultimately be sustained. By December 2011, 2,200 communities in 29 districts have been officially declared and verified as Open Defecation Free (ODF), and over 1.4 million people have gained access to improved sanitation as a result of exposure to the program.³

¹ Progress on Drinking Water and Sanitation: 2013 Update. Joint Monitoring Programme, WHO/UNICEF.

² East Java has a total population of 37 million (70 percent rural).

³ WSP Project Monitoring Data. 2011. These figures have continued to grow beyond the December 2011 closing date of TSSM but December 2011 is used for consistency throughout the document.



As part of efforts to gather evidence on the health and welfare impacts of this approach, TSSM utilized a rigorous impact evaluation to measure the effects of the intervention on individual and collective sanitation behaviors, as well as the program's impact on the health and welfare of children under the age of five. Of 160 randomly selected communities including 2,100 households, treatment communities witnessed a 29 percent increase in toilet construction (albeit not among the poorest quintile of the households surveyed) and a 30 percent decrease in diarrhea prevalence reported by care-givers of children under the age of five.⁴ This randomized controlled trial evaluation also found that the program had impacts on other child health indicators ranging from reducing parasitic diseases to improvements in height and weight among households with no sanitation at baseline.

TSSM signified a strategic policy shift for sanitation on the part of the Government of Indonesia. What began as an at-scale, provincial program has become the backbone of Indonesia's national rural sanitation program today. A new National Strategy for Community-Based Total Sanitation (*Sanitasi Total Berbasis Masyarakat*, or STBM) was adopted in 2008 and builds further upon TSSM's three-pronged approach for improving the health of poor households and communities. Under the umbrella of STBM, and building on lessons learned in East Java, 32 out of 33 provinces in Indonesia⁵ are now beginning to assume full responsibility for financing and implementation of the new strategy, progressively internalizing the new approaches and applying these to their entire province, with technical assistance provided by WSP to the STBM secretariat and 5 provinces as well as through the World Bank-funded Third Water Supply and Sanitation for Low Income Communities (*Pamsimas*) project.⁶

This Field Note presents the achievements, learning and reflections that resulted from implementing a large-scale sanitation program in East Java, Indonesia and provides recommendations for future initiatives aimed at increasing access to improved sanitation globally.

BACKGROUND

Over the past decade the Indonesian economy has experienced positive economic growth, witnessed impressive reductions in poverty, and has made continued progress toward many of its Millennium Development Goal targets for 2015. However, these improvements partially mask the persistent problem of inadequate access to sanitation still facing millions of Indonesians, especially those that are from poor, rural households. Indonesia is currently not on track to meet the 2015 sanitation Millennium Development Goal: of Indonesia's 240 million residents, just over half (56 percent) belong to households with access to any kind of sanitation. In rural areas the problem is magnified—just 39 percent of individuals have access to sanitation and another 40 percent of rural residents still regularly engage in the practice of open defecation, using fields, beaches and most often rivers.

⁴ Cameron, Shah and Olivia. Impact Evaluation of a Large-Scale Rural Sanitation Project in Indonesia. World Bank Impact Evaluation Series No. 83. February 2013.

⁵ The exception is DKI Jakarta which is classified as 100 percent urban.

⁶ Additional funding for Pamsimas to be implemented over the period 2013-2016 has been approved in May 2013 and will cover 32 provinces. As agreed with the Government, the STBM implementation approach has been revised towards a district-wide approach that allows STBM implementation not only in selected Pamsimas sites but across all villages in a district.



Inadequate sanitation disproportionately affects poor communities, as well as contributes to diarrheal disease, one of the leading causes of death in children under five. Widespread open defecation leads to feces being tracked through villages and into people's houses, where it is ingested. Repeated bouts of diarrhea as a result of poor sanitation and hygiene practices have been linked to long-term growth deficiencies (stunting) in children under two, which in turn leads to impaired long-term cognitive development and schooling attainment, as well as adult morbidity and lower incomes. Currently 36 percent of Indonesian children under 5 are moderately or severely stunted, making it among the 14 countries along with India and Nigeria that share the greatest percentage of the global burden of stunted children.

Poor sanitation also places a high economic burden on countries, particularly in Indonesia. According to a WSP study, the economic costs of poor sanitation are estimated to be as high as Rp56 trillion (US\$6.3 billion), equivalent to 2.3 percent of the country's GDP in 2006.⁷ This same study estimated that poor sanitation and hygiene practices also contributed to 120 million disease incidents and 50,000 premature deaths annually.⁸

Motivated by mounting challenges in the rural sanitation sector, the Government of Indonesia launched STBM in 2008 in an effort to improve sector effectiveness and reach the sanitation MDG. The new STBM strategy focuses on sustaining behavior change for sanitation and hygiene, creating demand at scale through community participation and empowerment and improving market supply as a response to generated demand. To complement these efforts the Ministry of Health and the East Java Provincial Government, with support from WSP, implemented the TSSM project from 2007-2010⁹ as an at-scale demonstration of implementing STBM at the local level.

When implementation started in East Java, a host of challenges had to be overcome to ensure effectiveness:

- **Clarity on Roles & Responsibilities:** Indonesia is highly decentralized and although policies are designed at the national level, local district governments are fully responsible for planning, funding and implementing their development agendas, including those related to rural sanitation. Decentralization has also meant that a widening pool of stakeholders and administrative bodies are charged with improvements to rural sanitation. At the beginning of TSSM, confusion and fragmentation over responsibilities and procedures often delayed implementation of a sustained sanitation program.
- **Lack of Demand & Awareness:** Among participating districts an important gap existed between knowledge about transmission of diseases from open defecation when feces did not visibly contaminate the immediate environment. Despite relatively high levels of knowledge among the population about sanitation, few seemed to understand the health hazards of openly defecating in rivers or far from where people lived. Information and education campaigns focusing primarily on top-down messages around health hazards did not seem to reach the broad population in order to instigate lasting behavior change.
- **Hardware vs. Behavior Change Approach:** Prior to TSSM, the government maintained a subsidy-based approach to providing sanitation hardware to house-

⁷ Napitupulu and Hutton, 2008.

⁸ *ibid*, 2008.

⁹ The project was subsequently extended to December 2011.

¹⁰ Mukherjee et. al. 2012.

holds under various programs. This did not foster lasting change – Indonesia’s rural sanitation coverage rates barely changed over the past decades – because it ignored why communities continued to defecate in the open. It also under-utilized the power of collective action and responsibility for improving sanitation facilities for all community members. Expectations that subsidies would eventually become available for all hampered collective action and created social divisions.¹⁰ For the new approach to be successful, districts had to be convinced one-by-one that having two competing approaches would not work and that a broad-based policy shift in line with STBM was required.

- **Limited Availability of Low-Cost Latrine Options:** The challenge of increasing demand for improved sanitation options was compounded by the fact that local markets did not offer latrines catering to those with lower purchasing power. Many households used personal savings to fund what was perceived as highly-priced latrine construction. Local masons had limited experience on how to package together a variety of low-cost latrine solutions for households that would enable consumers to invest in affordable and upgradable sanitation solutions. Such supply needed to be built up quickly if the newly created demand was to lead to substantial latrine uptake.

DEPARTING FROM BUSINESS AS USUAL: “LIGHT” TECHNICAL ASSISTANCE FOR SANITATION SERVICES AT SCALE

The TSSM approach departs from typical modes of delivering sanitation services by recognizing that sanitation is a multi-sectoral issue that has long-term impacts on health, education and the economy and next, that improvements in sanitation infrastructure alone will not solve the myriad of sanitation problems. Demand for new and improved latrines, as well as improvements in hygiene behaviors, come only when there is a change in community-level perceptions about the impacts of the lack of sanitation.

TSSM utilizes a theory of change developed globally by WSP that connects strengthened sanitation supply with demand creation and behavior change, rooted in an enabling environment whereby policy, institutional arrangements

and fiscal allocations at the central and local levels support the scaling up and sustainability of interventions.

The success of the demand generation approach lies in combining distinct elements aimed at getting communities to both stop open defecation, as well as build and utilize improved latrines, community-led total sanitation (CLTS) and behavior change communications (BCC). CLTS uses community-based sanitation ‘triggering’ events, awareness building and careful verification to successfully catalyze community commitment and demand for becoming 100 percent Open-Defecation Free (ODF).

This is complemented by formative research-based BCC strategies and a market research-based supply improvement program. The objective of the supply improvement program is to build on CLTS efforts by increasing individual consumer demand for and market supply of improved sanitation solutions that are both affordable and preferred by consumers of all classes and income levels. Over time, growth of improved supply is sustained through continued, quality entrepreneur training, monitoring and regulation of the market. This is complemented with targeted advocacy to local governments and capacity building for local government agencies.

OBJECTIVES & TARGETS

The project’s overall goal in East Java was to design and implement an innovative, sustainable program to reduce open defecation and increase access to hygienic sanitation in all 29 rural districts throughout East Java. The hypothesis behind the approach (or ‘theory of action’) was that ‘light’, time-bound¹¹ technical assistance could be extended across the whole province provided that local governments would be in the driver seat and implement – and largely fund – interventions through existing government systems, while households would be able to fund their own toilet investments provided the market catered to their demand for affordable and desirable products.

The following section summarizes the results against these objectives, as well as lessons learned over the course of the TSSM project in East Java.

¹¹ Each district received technical assistance for a period of only 8-9 months.

TABLE 1. RESULTS SUMMARY AND KEY ACHIEVEMENT

Objectives and Targets	2007 Baseline	2009 Target	2011 Achievement
Objective 1: Increase Collective Demand and Behavior Change Among Communities and Households through CLTS and BCC Campaign			
Number of communities "triggered"	0	2,700	6,250 (231%)
Number of communities declared and verified open defecation free	0	870	2,200 (252%)
Population gaining access to improved sanitation fully financed by households	0	1.4 million	1.4 million
Objective 2: Strengthening the Supply of Affordable Latrines and Services for Households¹²			
Business model of one-stop-shop sanitation developed and promoted to local entrepreneurs	n/a	n/a	60 entrepreneurs from 28 districts trained
Objective 3: Strengthening the Enabling Environment			
Policy, Strategy and Direction			
Strategic Planning			
STBM Approval	No	Yes	Yes
District Strategies Implemented	0	14 (48%)	28 (96%) ¹³
Political Support			
National Sanitation Budget Allocation	US\$1.3 million	US\$2.2 million	US\$800 million ¹⁴
Policy Alignment: Total Sanitation			
UNICEF Indonesia	No	Yes	Yes
Plan Indonesia	No	Yes	Yes
Ministry of Public Works	No	Yes	Partial
Program Methodology			
Total Sanitation at Scale			
Number and percentage of districts using total sanitation approach	54 districts (15%)	150 districts (43%)	252 districts (72%)
UNICEF Indonesia	No	Yes	Yes
Plan Indonesia	No	Yes	Yes
Sanitation Marketing at Scale			
Number and percentage of districts using sanitation marketing approach	0	-	28 districts ¹⁵
UNICEF Indonesia	No	Yes	Yes
Plan Indonesia	No	Yes	Yes
Implementation Capacity			
Knowledge Management			
Exposure visits (people per year)	0	200	160 ¹⁶
Best practice seminars	0	4	4
WSP field notes	0	1	1 ¹⁷
Active Sanitarians			
East Java: filled positions	620/826 (75%)	750/833 (90%)	632/833 (76%)
East Java: active entrepreneurs	0	29	6 ¹⁸

¹² Project activities related to supply strengthening were introduced following a consumer market survey showing limited knowledge and accessibility presented challenges to adoption of improved household sanitation options. For this reason 2009 targets were not originally included in the program's design.

¹³ Thirteen districts have completed their strategic sanitation plans for 4-5 years with official endorsement by the Head of District or the head of the local health department, and 15 districts have incorporated the rural sanitation strategic plans into existing multi-year district strategic plans for water and sanitation (Renstra AMPL) or Health (Renstra Kesehatan).

¹⁴ The majority of this amount has been earmarked for urban sanitation infrastructure.

¹⁵ One district in East Java has not adopted the main elements of the TSSM methodology.

¹⁶ Fourteen internal district-to-district and nine international/external (from Cambodia, Laos, East Timor, the Philippines, Vietnam, India, Pakistan, WSLIC-2, and the Asian Development Bank-supported Community Water Services and Health Project) exposure visits over the last two years.

¹⁷ WSP 2009.

¹⁸ These data were obtained from an assessment that took place in July 2010. At the completion of the project in December 2011, the number of active sanitation entrepreneurs in East Java reached 30.

TABLE 1. RESULTS SUMMARY AND KEY ACHIEVEMENT (CONT'D)

Objectives and Targets	2007 Baseline	2009 Target	2011 Achievement
Availability of Goods and Services			
Technology Options			
Promoted by local producers	5	10	6
Found in poor households	2	4	3
Rural Service Providers			
Number of trained masons	0	+25%	+3%
Number of sanitation businesses	0	+44%	6
User Satisfaction			
Owners of improved latrines	Unknown	75%	85% ¹⁹
Owners of unimproved latrines	Unknown	-	57%
Users of shared latrines	Unknown	-	34%
Financing			
Sanitation Finance			
Annual sanitation budget (East Java)	US\$169,000	US\$750,000	US\$372,000 ²⁰
Sanitation Incentives			
National sanitation award	No	Yes	No
East Java sanitation award	No	Yes	Yes
East Java ODF incentive	0	US\$67,000	US\$22,000
Cost-Effective Implementation			
Effectiveness (East Java)			
Nr. triggered communities	0	2,700	6,250 (231%)
Verified ODF communities	0	870	2,200 (252%)
ODF success rate	-	-	35%
Cost-Effectiveness			
Program cost per ODF community	US\$6,400	US\$4,000	US\$1,060
Program cost per latrine in use	US\$9	US\$5	US\$4.26
Leverage ratio (household: program)	2:1	4:1	5.3:1
Monitoring & Evaluation			
Monitoring systems			
National outcome monitoring	No	Yes	Yes ²¹
Finance for national monitoring	US\$0	-	US\$110,000 ²²
Harmonization with JMP indicators	No	Yes	No
Sanitation evaluations			
WSP-financed (East Java)	0	2	2
Government-financed (national)	0	2	0

¹⁹ User satisfaction data from Nielsen (2008) that demonstrated satisfaction is far higher among owners of improved latrines, and thus satisfaction should increase as improved sanitation coverage rises.

²⁰ Total budget allocations by the provincial government and 29 district governments peaked at US\$603,000 in 2009, then declined to US\$372,000 in the 2010 election year.

²¹ The national sms and web-based monitoring system was launched in October 2011, during national coordination meeting for STBM (Rakornas).

²² Puskesmas budget for all sanitation software activities (100 puskesmas in 2010; 8,000 puskesmas in 2011 is equal to US\$8.9 million in budget allocations).



RESULTS AND LEARNING

Objective 1: Increasing Collective Demand and Behavior Change Among Communities and Households Through CLTS and BCC Campaign

One of the key challenges to expanding sanitation interventions in Indonesia is motivating households to recognize and appreciate the importance of defecating in hygienic latrines for their families and their community. In East Java 96 percent of households that do not have access to sanitation report defecating in rivers. Open defecation, especially in rivers, is still culturally acceptable and frequently considered more convenient than using sanitation facilities. To combat this perception the CLTS approach aims to ‘trigger’ the desire for a community environment that is ODF. At the district level, the TSSM intervention began with a series of roadshows aimed at generating stakeholder buy-in through presentations that demonstrated the economic and social impacts of poor sanitation. These roadshows also provided a forum for establishing the program’s ‘rules of engagement’, namely that (i) formal letters of interest had to be received from district, subdistrict and village leaders

expressing their desire to participate, with priority given to those willing to co-finance implementation; (ii) no subsidies would be provided for household toilet construction in accordance with STBM; (iii) no monetary incentives would be given to communities verified as ODF.

At the sub-village level, triggering events typically begin with a ‘walk of shame’ where villages are asked to provide a tour of where defecation occurs. Following this, facilitators help individuals analyze how fecal contamination spreads from exposed excreta to their living environments, food and drinking water supply. Finally, a social mapping exercise leads community members through the process of identifying where they live, where they defecate and the routes they take there and back. The realization of how closely these activities take place, often leads to collective action to be free from the hazard by becoming ODF. In order to achieve this following triggering, communities must come together and forge their own action plan, with only limited support from project staff. Communities that are verified ODF by government agencies receive recognition from local and provincial government leadership. Sub-villages who have received CLTS are also vital in triggering other sub-villages to become ODF.²³

In East Java the CLTS approach resulted in tangible improvements to household-level sanitation behavior change. The fraction of households reporting that at least one member engages in open defecation is systematically lower in communities that participated in the project (‘treatment’ communities). Households reporting that a member continues to practice open defecation is 4.4 percentage points lower in treatment villages. Among communities on rivers, open defecation by any household member is 6 percentage points lower in treatment communities than in control communities participating in the TSSM impact evaluation.²⁴

²³ Typically 5-10 subvillages comprise a single village.

²⁴ Draft. TSSM Impact Evaluation. 2012.



Lessons Learned

TSSM monitoring data show rapid progress in more than 5,000 triggered communities in East Java, with demand accelerating from district governments.²⁵ About 83 percent of these communities were ‘triggered’ with local government funding, indicating a high – and growing – degree of local government ownership of the approach. One of the keys to success was an approach that required early buy-in from districts, subdistrict and village leadership, as well as their explicit interest and commitment to engaging with project facilitators. Over time TSSM shifted to explore alternative strategies for sustaining buy-in from districts such as competitions between areas, award ceremonies, and repurposing project outcomes to lobby for additional budget allocation.

However, triggering alone was not enough to guarantee successful progression to ODF, which was achieved by over 2,200 communities by December 2011. Repeat messaging and targeted monitoring and follow-up through household visits were key to ensuring consistent support to households. Repeat messaging, which mainly occurred through existing congregational and communal gatherings, was especially important for reinforcing the themes of the original triggering event. For communities that take several months to become ODF, periodic re-checks may be a valuable tool for ensuring that ODF status has been

sustained. One pathway that has proved successful for ensuring sustained repeat behavior change messaging to communities is working in collaboration with health promotion units (*Promkes*) at the Ministry of Health. Working through *Promkes* provided an institutional “home” for promoting messages around rural sanitation, with formative research aiding in the development of tools that district governments can use to develop their own sanitation improvement campaigns.

Objective 2: Strengthening the Supply of Affordable Latrines and Services for Households

While CLTS has proved effective for triggering a community desire and effort to be free from open defecation, it alone is not sufficient for driving the adoption of improved latrines. For a community to be able to sustain ODF status, increased household demand must be met with a range of options that would allow individuals to progressively upgrade facilities over a sustained period of time. Supply-side challenges centered around how to popularize what constitutes an ideal safe, healthy, hygienic sanitation facility among consumers and suppliers, as well as how to motivate the market (including manufacturers, suppliers, vendors and masons) to deliver a range of sanitation options priced for different segments of consumers.

In order to meet these challenges WSP developed a strategic sanitation behavior change framework to help guide the analysis of determinants of sanitation behavior change based on extensive market research collected in East Java. Formative research using SaniFOAM (Sanitation Framework of Opportunity, Ability and Motivation) revealed a number of clear factors constraining adoption of latrines:

- Flush latrines were perceived as prohibitively expensive by households
- Disease was seen as a result of poverty and/or destiny and not related to sanitation behaviors
- Sanitation was perceived as a waste of clean water especially in water scarce areas, whereas open defecation is clean, convenient and free

²⁵ Inception Report for the Five Year At-Scale Sanitation and Hygiene Implementation Program in Indonesia. WSP, World Bank Group. 2011.

- Although sanitation materials and services appeared plentiful, suppliers presented relatively expensive options when asked about the cost of a hygienic latrine facility
- The supply market chain for sanitation was fragmented and lacked clear standards to identify safe, hygienic latrines, thus perpetuating the assumption among consumers that safe latrines were unaffordable

It was from this new framework for action that the following features were added to TSSM in an effort to enhance supply and bolster community demand for low-cost latrine options:

- Promotion of definitions of ‘improved’ and ‘unimproved’ sanitation as part of all program implementation tools and resources in a way that makes it easy to understand the difference between the two at the community level
- Creation of an Informed Choice Catalogue (ICC) of safe sanitation options that: (i) illustrates all possible combinations from lowest to highest cost; and (ii) promotes the idea that safe, hygienic latrines are affordable and good for all
- Development of mason training/accreditation program designed to equip every district with masons capable of facilitating informed consumer choice-making from the ICC, as well as promote and deliver safe improved sanitation options (“*WC-ku Sehat*”)
- Promotion of “*WC-ku Sehat*” thumbs-up sign branding for facilities that meet ‘improved sanitation’ criteria
- Launch of a vendor orientation program to promote “*WC-ku Sehat*” option and link consumers with trained masons

Lessons Learned

Strengthening the supply of affordable latrine proved to be substantially more difficult than increasing demand. Progress in improving local supply capacity was initially delayed due to difficulties in identifying and recruiting a marketing expert for TSSM, a position henceforth not seen in the sanitation sector. The sanitation-marketing component thus started with an 18-month delay. Ideally,

market research to understand consumer preferences and the supply capacity of local markets, followed by developing pro-poor marketing strategies in response, should have preceded implementation of CLTS and BCC interventions to generate demand while helping local capacity to grow.

In addition to implementation delays, this component required a substantial revision in its approach based on emerging lessons from the first half of the year. Training of masons proved to be ineffective as participants, who were chosen by the district to ensure district ownership in this component, were not appropriate candidates for training and in some cases had limited interaction with communities that needed upgraded facilities the most. Initially, this resulted in an imbalance between communities in which demand was ignited through CLTS and local markets’ ability to provide a range of low-cost options for consumers. Adjustments to the approach included introducing increasingly rigorous selection criteria for training recipients; shifting the pool of trainees from masons ‘one level up’ to sanitation entrepreneurs; and ensuring that there was a better match between those trained and the communities being targeted as part of TSSM. The result was a marked increase in the number of toilets sold and built in treatment communities since TSSM’s inception, almost 30 percent higher in treatment versus control communities (representing a 31 percent increase in the rate of toilet construction over baseline).²⁶



²⁶ Ibid. Draft. TSSM Impact Evaluation. 2012.

But traditional individual training models alone are not enough to motivate sanitation market transformation. Partnerships with community organizations proved effective, as was done with ‘one-stop-shop’ sanitation centers in East Java. These centers provide conventional mason services with information centers, promotional creativity, technical support provision, as well as sanitation construction materials. Currently there are approximately 85 one-stop centers in operation in East Java that have sold over 15,000 sanitation packages, generating more than US\$1.3 million in revenue.²⁷

Delays in project implementation of this objective also had an effect on the distribution of the informed choice catalogue (ICC) to various stakeholders. This catalogue, which was used widely in training of sanitarians, masons and

entrepreneurs, was a valuable tool for encouraging households to upgrade existing latrines and building awareness about low-cost options for progressive upgrades of latrine facilities. Actors at the provincial and district level that were exposed to the catalogue found it a useful tool, although many at the village level, for which cost is perceived as the main impediment to latrine adoption, reported less exposure to the ICC. Evidence from the TSSM Impact Evaluation demonstrates the need for continued awareness building about low-cost latrine options, especially at the household level. On average households surveyed estimated that it would cost approximately Rp1.2 million to build a latrine (US\$135), roughly equal to the average household’s per capita, per month income. In reality, TSSM estimates the actual cost to install a latrine with a slab to be in the range of US\$50 to US\$90.²⁸

BOX 1. LEARNING FROM SUCCESS: LATRINE SAVINGS CLUBS IN JOMBANG DISTRICT

The sanitation business in Jombang district is growing thanks to the efforts of a local sanitarian named Subianadi. As part of his job responsibilities Subianadi is responsible for environmental programming in each of the areas sub-villages, including the construction of healthy latrines. To accelerate community demand for construction of healthy latrines, Subianadi initially proposed the idea of a latrine savings club or arisan where club members could pay Rp1,000 (approximately US\$0.09) a day towards a new latrine, an idea that was readily accepted by villagers who felt it was easy to set aside Rp1,000 a day without too much trouble. Volunteers were set to collect contributions from club members every day and the idea was officially endorsed by the subdistrict leader.

Using this savings club scheme, Subianadi and his team have been able to help construct 23 household latrines per month, per village, with outstanding orders for 111 latrines. Under this scheme, each member of the savings club eventually receives a savings pot of Rp600,000 (approximately US\$54), which can be used towards the construction of a new latrine. The models’ success has meant that word has continued to spread—with the club now being developed in several subdistricts beyond Subiandi’s subdistrict of Sumobito.

Subiandi said when the idea of the savings club scheme was introduced, villagers initially doubted that Rp600,000 was sufficient funding to build a healthy latrine. He often uses BCC materials to address these concerns, and demonstrates that there are a range of healthy latrines at various prices. The savings club scheme also does away with the need for hardware subsidies and loans from financial institutions because the turnover of funds is rapid enough for Subianadi to purchase materials and pay the masons.

Subianadi also believes that sanitarians are instrumental to the successful construction of healthy latrines as they are considered credible experts in the eyes of the community. However, more needs to be done to socialize the importance of this work among sanitarians who still feel that it is occasionally “unfamiliar and bothersome” work that places additional burdens such as travel on their everyday work.

²⁷ WSP Project Monitoring Data, August 2012.

²⁸ Water and Sanitation Program, 2012.



However, cost alone does not paint the full picture of why poor households decided not to adopt improved latrines. Households that cited ‘lack of money’ as a reason for not owning a latrine also reported owning assets such as televisions, motorbikes, bicycles, livestock, cell phones, paddy fields and permanent housing with brickwork, masonry and tiled roofs.²⁹ The issue is not only of cost, but also of household prioritization and awareness about the continued dangers of open defecation. The one advantage of assets, such as a television or motorbike, is that they can be bought on credit and paid off over several months. Affordable financing options such as installment credit or deferred payments would provide affordable pathways for poor households looking to upgrade latrines, especially when coupled with targeted promotion about the range of products available on the market.

In East Java the cost barrier was also addressed through a number of innovative financing mechanisms that empowered villages to leverage group resources to help poor households gain access to latrines. In some cases, entrepreneurs engaged with local microfinance institutions to provide households with available credit. Another mechanism was the use of group savings (*arisans*) commonly used in Java to enable poor households to raise funds for large expenses, such as sanitation revolving funds. In some cases, *arisan* groups even entered into agreements with local sanitation material retailers to get supplies on credit, build facilities and pay back the total amount in six monthly installments.

Each of these community-led innovations provides indications that support the idea that poor households are willing to invest in the mid-priced pour-flush latrine options if some form of credit to enable payment by installments is made available to them.

In the future, support to Indonesia’s sanitation entrepreneurs is poised to expand. Entrepreneurs have come together to form the *Asosiasi Pengelola and Pemberdayaan Sanitasi Indonesia* (APPSANI, or Indonesia Sanitation Developer and Empowerment Association) in early 2012. Through APPSANI entrepreneurs will be able to collectively advocate for standardization of pricing, standards, recruitment of new entrepreneurs and a training curriculum. These efforts are also being reinforced by the Ministry of Health, which has begun to require local governments interested in expanding STBM to provide cofinancing for local sanitation entrepreneur training.

Objective 3: Strengthening the Enabling Environment

In order to seriously address the sanitation crisis in Indonesia, national and local governments need to take a strong lead in ensuring accountability and sustainability of sanitation interventions in the short, medium and long-term in order to ensure that project outcomes, no matter how successful, survive once external funding ceases. For this reason, an enabling environment is central to the scaling up and sustainability of project outcomes. For the purposes of TSSM an enabling environment was defined as one where the *policy, institutional and financial environment promotes mutually self-sustaining growth of, demand for and supply of improved sanitation*. Success in achieving this objective is focused on eight dimensions:

- ✓ Policy, Strategy and Direction
- ✓ Institutional Arrangements
- ✓ Program Methodology
- ✓ Implementation Capacity
- ✓ Availability of Products and Tools
- ✓ Financing
- ✓ Cost-Effective Implementation
- ✓ Monitoring & Evaluation

²⁹ Ibid, Mukherjee et. al. 2012.

BOX 2. STRENGTHENING THE ENABLING ENVIRONMENT

As part of WSP's commitment to supporting sustainable change at scale in Indonesia, the program has continued to provide high quality technical support well beyond the life of the project. Since 2010, Ministry of Health's STBM Secretariat, with support from WSP, has continued to scale up its efforts to strengthen the enabling environment through sanitation policy development, adoption of behavior change and sanitation marketing strategies, creation of improved systems for monitoring and evaluation and greater sub-national investment in rural sanitation improvements. WSP also provides capacity building support to the Department for Human Resource Development within Ministry of Health, where together they are making strides in improving:

- Standardization and accreditation of sanitation entrepreneurs
- Provision of performance-based provider incentives for civil servants
- Collaboration with provincial training institutes (Health Polytechnics) to integrate STBM training material into formal curriculum

WSP is also co-managing the health component of the Pamsimas project in 32 provinces through provision of technical, monitoring and training assistance at provincial, regional and national levels.

Lessons Learned

Policy, Strategy and Direction support for STBM (using the TSSM approach) is continuing to grow in Indonesia and is already significant among key ministries such as the Ministry of Health and the Ministry of Planning (BAPPENAS). For the Ministry of Health, STBM is an essential part of the 2009-2014 Strategic Plan, targeting implementation in 20,000 villages and as a program priority for supervision under the National Medium-Term Development Plan by the Presidential Unit for Development, Monitoring and Control, all of which are aimed at making Indonesia ODF by 2014. Through the project, WSP also provided intensive technical assistance to districts about how to prepare detailed district sanitation plans for scale-up to ensure sustained funding for rural sanitation. These plans provide a roadmap for how sanitarians, village midwives and health cadres can work collaboratively in order to implement STBM strategies in their community. This effort has born ample fruit as several districts have already completed their strategic plans and/or incorporated these plans into their existing multi-year district strategic plans for water and sanitation. NGOs have also signaled their support of CLTS, with variations having been adopted by UNICEF and Plan Indonesia as central components of their sanitation programs.

As part of creating sustainable **Institutional Arrangements**, the TSSM approach has been successful in developing ownership and encouraging greater allocation of local government funds towards rural sanitation. For every Rp1 million the project was successful in leveraging an additional Rp2-37 million, depending on the district, between January 2008 and December 2010. Decentralization of decision-making has also been critical for assuring local governments' involvement in taking responsibility for decisions around whether to adopt particular approaches, utilize project tools or participate in capacity building activities.

Increases in the **Availability of Products, Tools and Services** have led to improved latrine designs and technology options that have now expanded beyond East Java into four additional provinces, both through TSSM training courses and knowledge sharing at stakeholder events. One of the most popular models of provision remains the one-stop shop where customers can organize latrine construction in one easy visit, allowing them to choose from a range of low-cost latrine options that can be delivered and installed in a timely manner. One-stop shops, run by sanitation entrepreneurs, have now expanded to four new provinces where local governments are increasingly providing resources to

support the training and coordination needed to match increased community demand for improved latrines with entrepreneurs ready to serve them.

District governments have also begun to select communication materials from a menu of design templates and replicate them over local media channels using their own funds. Progress in getting districts to fully utilize these resources is beginning to climb, although future research into lessons learned about why some district governments decide to use or not use BCC materials could potentially provide pathways for improving and sustaining utilization. Going forward, opportunities also exist to expand distribution and awareness building around the ICC, as well as create formal systems at all levels of government (district, province and national) to collect and share innovative designs and technical options.

One result of the TSSM project in East Java has been a growing awareness of the importance of *Cost-effective Implementation* rather than simple measurement of latrine and latrine subsidies. A recent costing study on the TSSM program in East Java demonstrates the potential of the TSSM program to leverage noteworthy investments by households

in improved sanitation. Under this project, total government costs were US\$2.73 per beneficiary. The study found that households with no exposure to the program invested approximately US\$5.82 while households that did participate spent an additional US\$2.94 on improving sanitation over and above control households, representing a 47 percent increase in spending. Thus, every US\$1 spent by the government returned increased household investment of US\$1.08. Increases were also reported for poor households who were also willing to make substantial investments in improved sanitation, spending US\$1.55 per capita more than their counterparts who were in control communities.³⁰ Moreover, the treatment induced greater investments from the private sector on the supply side, and from the community in terms of volunteer time, totaling an additional US\$2.86 per beneficiary. Once this is accounted for, every US\$1 spent by the government leveraged an additional US\$2.13 in total new investments from households, communities and the private sector. This demonstrates that relatively small amounts of government spending can trigger significant non-government investments, emphasizing the importance of collecting information on these investments when estimating cost-effectiveness of implementation.



³⁰ Chase, Briceno, Naafs, 2013.



MEASURING RESULTS & IMPACTS

Monitoring and evaluation of progress towards each of the project's objectives and targets was considered a major component of the program from its earliest stages. Multiple collection pathways, as well as continuous monitoring of data accuracy and efficiency, allowed WSP to measure success frequently, as well as highlight areas where course corrections were necessary during implementation. The monitoring and evaluation component of TSSM included the following elements:

- **Project implementation monitoring and improvement** regularly monitored progress of individual, planned activities. This process was an ongoing dynamic process that allowed the project to use data and information in real time to make adjustments as needed to project implementation.
- **Monitoring and evaluation of expected outcomes and results** that monitored increases in access to hygienic sanitation, number of open-defecation free communities and hygiene behavior changes.
- **Impact Evaluation** that measured the project intervention's health, behavioral, welfare and economic impacts.
- **Enabling Environment Assessment** that examined national and local government policies for accelerating rates of increased access to sanitation, especially among the poorest communities.

- **Documentation and dissemination of lessons**, which provided stakeholders at the central and local level with publications, study tours and opportunities to engage in learning events in order to review progress and capture lessons learned before further expansion of activities.

One of the biggest challenges faced over the course of the TSSM project was availability of reliable, timely data on rural sanitation access and hygiene behaviors. Currently in Indonesia there exists no functional monitoring system for rural sanitation, other than the annual *Susenas* socio-economic household survey, which provides only representative data on use of household sanitation facilities. Likewise, at the local level, there is no reliable monitoring of sanitation outcomes such as latrine usage, hand washing with soap, safe disposal of infant excreta or open defecation rates. Thus, TSSM focused heavily on improving the quality and reliability of rural sanitation data by developing a community-based monitoring system that feeds access and behavior data regularly into local, provincial and ultimately national databases. Currently, an improved version of the system, developed as part of the original program design, is being managed by the STBM Secretariat in order to provide resources for local-level facilities to collect and analyze project-monitoring data. This new web and SMS-based system will eventually provide an interactive platform for program trouble-shooting and up-to-date information for policy decision-making.

PROGRAM EFFECTS ON CHILD HEALTH OUTCOMES

Of the four most important causes of under-5 mortality in Indonesia two - diarrhea and typhoid - are preventable fecal-borne illnesses directly linked to inadequate water supply, sanitation and hygiene issues.³¹ In Indonesia alone, about 11 percent of children suffer from diarrhea in any 2-week period and it has been estimated that an excess of 33,000 children die each year in Indonesia from diarrhea and 11,000 from typhoid.³² Children under five in Indonesia continue to bear the brunt of inadequate rural sanitation through increased instances of morbidity through early life.

³¹ MOH, 2002.

³² Curtis, 2004.

Diarrheal diseases are one of the most significant causes of malnutrition and nutrient malabsorption, which can lead to impaired physical growth (stunting), reduced resistance to infection, long-term gastrointestinal disorders and even long-term cognitive deficiencies.³³

Among TSSM's achievements was a notable reduction in diarrhea prevalence (7-day and 2-day recall) among communities receiving the intervention. Specifically, being in treatment communities was associated with diarrhea prevalence being lowered by approximately 1.3 percentage points from a 4.6 percent base. These decreases were driven largely by non-poor households that did not have adequate sanitation facilities at the beginning of the project. Among the other effects on child health, instance of parasitic infection in treatment communities was lower, as was the instance of refusal to eat and instance of blood or mucous in stool.³⁴

LESSONS LEARNED FROM SCALING UP RURAL SANITATION IN INDONESIA

Four years of TSSM implementation have not only provided a wealth of lessons but also a pathway forward for scaling up rural sanitation throughout Indonesia. With an established legal framework, widespread political support and demonstrated effects at a large scale, the STBM framework has the potential to substantially increase the number of rural Indonesians with access to and use of an improved toilet.

A project approach that adjusts for country context was key for ensuring client ownership. The decentralized nature of Indonesia's regulatory environment made working closely with district leadership an essential element in ensuring project ownership and sustainability. Early road shows provided an opportunity to socialize a wide array of stakeholders from health, education, finance and development to the importance of scaling-up rural sanitation interventions through a behavior change-focused approach. Following socialization, districts were required to submit letters of intent guaranteeing their commitment to staffing and providing future resourcing for rural sanitation. In this

way, the project was successful in generating local government's early interest and creating a strong foundation for sustained partnership over the course of the project's implementation. The project also managed to adjust implementation approaches based on a continuing flow of lessons coming in through a variety of formal and informal reviews and reflections that helped define which of the approaches was working well (for example, pairing government counterparts with CLTS specialists to learn from them during triggering and verification) and which needed adjustment (such as revising supply side strengthening from a focus on masons to entrepreneurs).

Enhancing local government capacities to fully implement STBM requires continued, long-term commitment.

Despite growing steadily over the past few years, local governments are still working under their capacity to implement and sustain resourcing for large-scale rural sanitation programs. This includes greater supervision of CLTS facilitators, greater support for sanitarians and engagement of private sector suppliers. Going forward, it will be necessary to continue to develop the capacity of local governments to adopt total sanitation and sanitation marketing strategies including strategic plans, standardized tools, training materials and budget allocations. Institutionalizing knowledge sharing, especially through peer-to-peer exchanges, has been especially helpful in improving capacity and sustaining local governments' engagement in building the sector.

Quality formative research is central to effective program design. Over the course of the project, carefully planned, early formative research was critical in both understanding the underlying factors motivating individual sanitation behavior change and potential gaps in the sanitation supply chain. Through this research district governments have been able to more effectively use local media to deliver targeted messages to the community as a pathway for increasing demand for improved sanitation solutions. In turn, suppliers have been able to offer a better array of product options that are tailored to meet consumer preferences.

³³ Murray, Lopez (1997); Guerrant et al (1999); Baqui et al (1993); Schneider et al (1978); Humphrey (2009).

³⁴ Instance of parasitic infection intensity for *Ascaris* and *Trichuris*, estimated as egg worms per milligram, was not statistically significant over the whole sample.

Champions from a variety of stakeholders can facilitate greater program reach and sustainability. Identifying and acknowledging champions can be the catalyst to accelerate government's buy-in to the program. In Indonesia, an early understanding of various actors' motives prior to implementation allowed WSP flexibility in being able to package the project's potential benefits from a variety of stakeholder's perspectives. The process of identifying or monitoring individual(s) or institution as champions should be embedded into the project intervention design from the earliest stages of planning. It is important to ensure that emerging champions — be they government employees, volunteers, engaged mothers, etc. — are embedded in the program to ensure maximum program reach.

For the poorest, cost is still the biggest challenge to adopting improved sanitation. The cost of toilet construction still presents a challenge in particular to the poorest fami-

lies. Results from the program's impact evaluation indicate that non-poor households were more likely to build a toilet as a result of exposure to the program rather than poorer households. According to government data, a number of treatment and control villages have become open defecation-free after the endline survey was finalized, which would suggest that all households including the poorest have by now been able to build some kind of toilet for the community to be verified as open defecation-free. However, further in-depth research is necessary to confirm these results and more importantly, to fully understand willingness to pay, availability of affordable products, and financing strategies and options (e.g., provision of credit for households and/or entrepreneurs, collective saving schemes for households, or 'smart' subsidies well targeted at these families) to speed up equitable access to improved sanitation and to ensure that the poorest households are not left behind.

REFERENCES

- Amin, S., Rangarajan, A., Borkum, E. *Improving Sanitation at Scale: Lessons from TSSM Implementation in East Java, Indonesia*. Mathematica Policy Research, Inc. May 10, 2011.
- Baqui, A. et al. *Methodological Issues in Diarrheal Diseases Epidemiology: Definition of Diarrheal Episodes*. International Journal of Epidemiology. 20(4): 1057-1063.
- Cameron, L., Manisha, S. *Scaling Up Rural Sanitation: Findings from the Impact Evaluation Baseline Survey in Indonesia*. Water and Sanitation Program, The World Bank Group. November 2010.
- Cameron, L. et al. *Impact Evaluation of a Large-Scale Rural Sanitation Project in Indonesia. Impact Evaluation Series No. 83 the TSSM Project in East Java, Indonesia*. Water and Sanitation Program, The World Bank Group. 2012.
- Chase, C., Briceno, B., Naafs, A. *It's Going to Cost You: Costing the Total Sanitation & Sanitation Marketing Program in East Java, Indonesia*. Water and Sanitation Program, The World Bank Group. 2013.
- Curtis, V. *Hand-washing, Hygiene, and Health: Proposals for Strengthening WSLIC-2's Health Component and National Hand-wash Campaign*. Hygiene Centre, London School of Hygiene and Tropical Medicine. London. 2004
- Frias, J. *Opportunities to Improve Sanitation: Situation Assessment of Sanitation in Rural East Java, Indonesia*. Water and Sanitation Program, The World Bank Group. 2007.
- Guerrant, D., Moore, S., Lima, A., et al. *Association of Early Childhood Diarrhea and Cryptosporidiosis with Impaired Physical Fitness and Cognitive Function in Four-Seven Years Later in a Poor Urban Communities in Northeast Brazil*. American Journal of Tropical Medicine and Hygiene. 61(5): 707-713.
- Humphrey, J. *Child undernutrition, tropical enteropathy, toilets, and handwashing*. Lancet 2009; 374: 1032-35.
- Inception Report for The Five Year At-Scale Sanitation and Hygiene Implementation Program in Indonesia*. Water and Sanitation Program, The World Bank Group. 2011.
- Ministry of Health. *Indonesia Health Profile*. Ministry of Health, Indonesia. 2002.
- Mukherjee, N. et al. *Achieving and Sustaining Open Defecation Free Communities: Learning from East Java*. Water and Sanitation Program, The World Bank Group. March 2012.
- Mukherjee, N. *Factors Associated with Achieving and Sustaining Open Defecation Free Communities: Learning from East Java*. Water and Sanitation Program: Research Brief. The World Bank Group. September 2011.
- Mukherjee, N. et al. *Managing the Flow of Monitoring Information to Improve Rural Sanitation in East Java*. Water and Sanitation Program, The World Bank Group. February 2011.
- Mukherjee, N. *Total Sanitation and Sanitation Marketing Project: Indonesia Country Update June 2009 Learning at Scale*. Water and Sanitation Program, The World Bank Group. August 2009.
- Murray, C. and Lopez, A. *Global Mortality, Disability and the Contribution of Risk Factors: Global Burden of Disease Study*. Lancet 349(9063): 1436-1442.
- Napitupulu and Hutton. *Economic Impacts of Sanitation in Indonesia*. Water and Sanitation Program, World Bank Group. August, 2008
- Nielsen Indonesia. *Total Sanitation and Sanitation Marketing Report*. Prepared for The World Bank Water and Sanitation Program. March 2009.
- Perez, Eduardo, Amelink, C., Briceno, B. et al. *Progress Report July 1, 2009-June 30, 2010*. Global Scaling Up Sanitation Project, Water and Sanitation Project, The World Bank Group. 2011.

Perez, E. et al. *What Does It Take to Scale Up Rural Sanitation?* Water and Sanitation Program, The World Bank Group. July 2012.

Robinson, A. *Enabling Environment Assessment for Scaling Up Sanitation Programs: East Java, Indonesia.* Global Scaling Up Sanitation Project, Water and Sanitation Project, The World Bank Group. January 2008.

Schneider, R.E. Shiffman, M. and Faigenblum, J. *Potential Effects of Water on Gastrointestinal Infections Prevalent in Developing Countries.* American Journal of Clinical Nutrition. 31(11): 2089-2099.

U-Primo Rodriguez, Guy Hutton, Nelissa Jamora, Dieldre Harder, Jeremy Ockelford and EdKarl Galing. *Economic assessment of sanitation interventions in the Philippines.* World Bank, Water and Sanitation Program. 2011.

Water and Sanitation Program. *Economic Impacts of Sanitation in Indonesia: A five-country study conducted in Cambodia, Indonesia, Lao PDR, the Philippines, and Vietnam under the Economics of Sanitation Initiative (ESI).* Water and Sanitation Program East Asia and the Pacific. The World Bank. 2008.

Water and Sanitation Program. *Learning at Scale: Total Sanitation and Sanitation Marketing Project, Indonesia Country Update June.* The World Bank. 2009.

Water and Sanitation Program. *Achieving and Sustaining Open Defecation Free Communities: Learning from East Java.* Water and Sanitation Program. The World Bank. 2012.

