2016
Rural Sanitation and Hygiene
BEHAVIORAL STUDY VIETNAM
# Table of Contents

## Executive Summary

## Background

- Programming Context  
- Research Objectives

## Methodology

- Study Population  
- Sampling  
- Data Analysis  
- Ethical Issues

## Findings

- Demographic Profile  
- Sanitation Practices  
- Factors Associated with Sanitation Practices  
- Reasons for Using Unhygienic Sanitation with Hygienic Latrines Available  
- Reasons for Recent Investment in Sanitation  
- Sanitation Financing

## Hand-washing with Soap

## Exposure to and Behavior Change Associated with PSI's Sanitation Social Marketing Campaigns

## Conclusion and Recommendations
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1. EXECUTIVE SUMMARY

In December 2016, PSI Vietnam conducted a behavioral study among 1,200 rural households in Tien Giang and Dong Thap provinces to assess PSI’s sanitation social marketing program progress and to inform future improvements in coverage and sanitation as well as hygiene behaviors. This study highlights the continuing need for improved sanitation and hand-washing with soap practices among rural families in Vietnam, and identified factors that need to be addressed in order to improve sanitation and hand-washing practices. One-third of households surveyed still use unhygienic latrines and 15% practice open defecation when they are away from home. Whereas 74.5% of households surveyed report hand-washing with soap, only 67% were found with soap available at the place where household hand-washing occurs. Perceived advantages of unhygienic latrines, social acceptance of unhygienic sanitation practices and financial barriers are factors contributing to open defecation and ‘hanging’ or ‘fish pond’ unhygienic sanitation practices among rural households in the Mekong Delta region of Vietnam.

However, the findings of this study also indicate that market-based approaches and social marketing campaigns are contributing to improved sanitation behaviors. After slightly more than one year of implementation of PSI’s sanitation social marketing activities, 23% of rural households surveyed in Tien Giang province reported exposure to PSI’s “TOT” (‘Good’) toilet campaign or ROTO plastic tank brand promotion. Those individuals who reported exposure to PSI programming were more than twice as likely to have built a hygienic latrine in the year prior to the survey compared to individuals who were not exposed to PSI’s program. Message recall was greatest among individuals exposed to outdoor (billboard and boat) signage, mason advice and commune loudspeaker announcements, whereas posters placed in commune health stations yielded the lowest recall of key messages.

Increasing exposure to TOT or ROTO campaigns—or similar, evidence-based messaging designed to promote the benefits of sanitation and hand-washing with soap in terms likely to resonate with rural families—has potential to further increase improved sanitation and hand-washing with soap practices in Vietnam.
2. BACKGROUND

Despite Vietnam’s macroeconomic progress, water, sanitation and hygiene (WASH)-related diseases continue to limit improvements in health and socioeconomic development, particularly among underserved rural communities. Diarrheal disease is the seventh highest contributor to Vietnam’s national communicable disease burden, translating to over 107,000 years of healthy life lost annually. 1,2 Poor sanitation, unsafe drinking water and poor hygiene practices are leading causes of acute respiratory infection (ARI) and diarrheal diseases, which account for nearly one-third of deaths among children under five years old in Vietnam. 3,4 Diarrheal disease alone is the third highest cause of death in children under five years old in Vietnam. 5 WASH behaviors are interrelated with poor child nutrition status. In Vietnam approximately one out of every three children under age five are stunted. 6,7 Nutritional status is lowest among rural and ethnic minority communities where safe drinking water, sanitation and hygiene practices are also low. 8 In the Mekong Delta region where this study was conducted, close to one-fourth (23.5%) of children under five are stunted and an estimated 50% of rural households practice hygienic sanitation. 9,10

3. Nguyen et al., 2011
8. UNICEF Viet Nam (2014)
2.1 Programming Context

PSI Vietnam’s WASH program started in 2008 with social marketing of safe household water treatment and hand-washing with soap in multiple provinces of the Mekong Delta region. In 2015, PSI’s WASH program expanded to include a market-based approach to improving sanitation in Tien Giang, Dong Thap and Dak Nong provinces in the Mekong Delta and Central Highland regions respectively. Sanitation social marketing activities were launched as soon as local approvals were secured, beginning in Tien Giang (October 2015) followed by Dak Nong (June 2016) and Dong Thap (August 2017.) PSI/Vietnam’s sanitation program aims to address both demand and supply-side barriers to rural family investments in hygienic sanitation by:

- Expanding rural commercial access to quality, affordable sanitation products and services as a result of extending rural distribution of ROTO septic tanks and training rural masons to comply with quality and gender installation guidelines including a lock on the inside of doors and safe disposal for menstrual hygiene products.
- Developing evidence-based behavior change communication (BCC) campaigns to promote the benefits of hygienic sanitation and hand-washing hygiene in terms that resonate with rural women, men and grandparents. TOT campaign messages placed in Tien Giang province during the year prior to this study emphasized the potential for hygienic latrines to i) give women pride when visitors from other provinces come to her home, and ii) protect a man’s reputation as a husband who will ensure that his wife is not seen by others while defecating.
- Designing toilet sales seminars and product shows to increase retail and community-level visibility and accessibility of products and services required to improve household sanitation.
- Using community engagement techniques to promote improved social norms relevant to sanitation, including commune competitions organized with support from Departments of Health.

2.2 Research Objectives

The 2016 Rural Sanitation and Hygiene Behavioral Study Vietnam was designed to inform future programming by collecting information regarding factors associated with improved sanitation and hand-washing practices as well as coverage and correlated behaviors achieved by PSI’s sanitation social marketing program during the first year of implementation. Specific research objectives included:

- Assess current sanitation and hand-washing practices as well as factors associated with these practices (Tien Giang & Dong Thap).
- Assess exposure to PSI/Vietnam’s rural sanitation market strengthening activities (Tien Giang).
- Assess positive correlation between exposure to PSI/Vietnam’s programming and hygienic sanitation practices (Tien Giang).
- Identify priorities for future rural sanitation market strengthening efforts (Mekong Delta).
3. METHODOLOGY

3.1 Study Population

Participants were recruited from five rural districts of Dong Thap and from seven districts of Tien Giang. Systematic random sampling was used to identify households to be approached by data collectors. Individual household members were screened for eligibility to identify no more than one individual per household meeting following criteria:

- Head of household, 18 years or older
- Resident of the same house for at least the past 6 months
- Willing to provide informed consent

Figure 1 District Sampled in Dong Thap and Tien Giang Provinces

- Participants were recruited from five rural districts of Dong Thap
- Participants were recruited from five rural districts of Dong Thap
- Participants were recruited from five rural districts of Dong Thap
3.2 Sampling

A probability sampling approach was used with clusters of households selected from the study sites based on the sampling frame using a list of communes in the rural districts included in the study. Using this approach, 1,200 individuals from households within the 75 selected clusters were selected to participate in the study.

Figure 2 Study Sample

<table>
<thead>
<tr>
<th>Province</th>
<th>Sample size</th>
<th>Rural districts included</th>
<th>Refusal rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dong Thap</td>
<td>640</td>
<td>Chau Thanh, Lap Vo, Cao Lanh, Thanh Binh, Tam Nong</td>
<td>2%</td>
</tr>
<tr>
<td>Tien Giang</td>
<td>560</td>
<td>Cai Be, Cai Lay, Chau Thanh, Tan Phuoc, Go Cong Tay, Tan Phu Dong, Cho Gao</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>1,200</td>
<td>12 rural districts</td>
<td>2%</td>
</tr>
</tbody>
</table>

3.3 Data Analysis

Data analysis was conducted using STATA version 2.0 software. Percentages/proportions/rates (for classification variables) and averages or medians (for continuous variables) were calculated and compared between different segments of the total sample. The resulting analysis shows the distribution of key variables among different sub-populations. Logistic regression was used to identify factors associated with sanitation and hand-washing with soap behaviors and to assess association between project exposure and improved sanitation behaviors.

3.4 Ethical Issues

This study was initiated only after receiving written approval from the Hanoi School of Public Health Ethical Review Board. All participants provided consent prior to participating and the research team ensured that participants understood their right to withdraw from the study at any time. Respondents received a modest allowance of 30,000 VND (~1.5 USD) after participating in the interview which lasted approximately 45 minutes.
4. FINDINGS
4.1 Demographic Profile of the Respondents

Slightly more than 6 out of 10 individuals interviewed were female heads of household, vs. male. Most respondents reported a relatively low education level, with 41% of the sample only finishing primary school. The most common professions were farming or fishing (42%) followed by small business workers (22%). One out of five respondents reported no employment. Approximately four out of ten respondents were not covered by health insurance, and the average household monthly income was approximately 300 USD.

Figure 3 Demographic & Socio-economic Profile of Respondents

<table>
<thead>
<tr>
<th>Study Population Characteristics</th>
<th>N=1,200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (years)</td>
<td>49</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>63%</td>
</tr>
<tr>
<td>Male</td>
<td>37%</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Single (never been married)</td>
<td>5%</td>
</tr>
<tr>
<td>Married</td>
<td>83%</td>
</tr>
<tr>
<td>Divorced/separated/widowed</td>
<td>12%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Never attended school</td>
<td>5%</td>
</tr>
<tr>
<td>Primary school</td>
<td>41%</td>
</tr>
<tr>
<td>Secondary school (Grades 6-9)</td>
<td>36%</td>
</tr>
<tr>
<td>High school or higher (Grades 10-12)</td>
<td>18%</td>
</tr>
<tr>
<td>Main occupation</td>
<td></td>
</tr>
<tr>
<td>Unemployed/homemaker/retired</td>
<td>20%</td>
</tr>
<tr>
<td>Farming/fishing</td>
<td>42%</td>
</tr>
<tr>
<td>Small business</td>
<td>22%</td>
</tr>
<tr>
<td>Manual worker</td>
<td>11%</td>
</tr>
<tr>
<td>Office worker</td>
<td>3%</td>
</tr>
<tr>
<td>Covered by health insurance</td>
<td>63%</td>
</tr>
<tr>
<td>Average household size (people)</td>
<td>4</td>
</tr>
<tr>
<td>% sampled HHS w/ child &lt; 5</td>
<td>27%</td>
</tr>
<tr>
<td>% sampled HHS with savings</td>
<td>50%</td>
</tr>
<tr>
<td>% sampled HHS having ever taken out a loan (any type)</td>
<td>47%</td>
</tr>
<tr>
<td>% sampled HHS that own the house they live in</td>
<td>95%</td>
</tr>
<tr>
<td>Average monthly HHS income</td>
<td>6.9m VND (~300 USD)</td>
</tr>
<tr>
<td>% sampled HHS reporting a family member experiencing diarrhea</td>
<td></td>
</tr>
<tr>
<td>Last 1 month</td>
<td>7%</td>
</tr>
<tr>
<td>Last 6 month</td>
<td>14%</td>
</tr>
</tbody>
</table>
4.2 Sanitation Practices

Among the individuals surveyed with a hygienic latrine at home, 51% installed the latrine more than five years ago, 21% installed the latrine between the last 3-5 years, 16% installed the latrine between 1-3 years and 8% installed the latrine within the last one year. Only 8% of respondents were unable to answer this question either because they moved into the home after the latrine was built, or because they could not remember the year when it was installed. Among respondents who reported installing a hygienic latrine in the last 1-3 years, 25% used some sort of a loan to finance latrine installation costs.

In 61% of the cases, hygienic latrines are installed as part of larger household renovation projects. In Tien Giang province, only 36% of families with hygienic latrines reported building these as a stand-alone construction project compared to 49% of similar families in Dong Thap province. This suggests that in many cases, families are waiting until they can complete larger household renovation projects before improving sanitation.
One third of all rural individuals surveyed report unhygienic sanitation practices (Figure 4). Among the 34% of individuals surveyed who reported using unhygienic sanitation some or all of the time, the hanging latrine is the most commonly reported method. In Tien Giang, 35% of respondents reporting using hanging latrines. In Dong Thap, this figure was 26% (Figure 6). While open defecation practices are rare at home among families surveyed in these two provinces, 15% of respondents reported using open defecation when away from home. Open defecation outside of home is more common in Dong Thap (19%) compared to Tien Giang (10%). District-level analysis reveals the following districts where unhygienic practices rates are highest: Chau Thanh and Cao Lanh districts in Dong Thap as well as Cai Lay and Cai Be districts in Tien Giang (Figure 7). Applying these statistics to estimated population size in these four provinces, this represents close to 380,000 rural families in these four districts alone in need of improved sanitation. Among the individuals surveyed with a hygienic latrine at home, only one-quarter (8%) had built the latrine in the past one year.

Figure 6 Unhygienic Sanitation Practices by Type and by Province

![Unhygienic Sanitation Practices by Type and by Province](image)

Figure 7 Unhygienic Sanitation Practices by District

![Unhygienic Sanitation Practices by District](image)

4.3 Factors Correlated with Sanitation Practices

As summarized in Figure 8, individuals reporting open defecation away from home are more likely to be men, poor, unemployed, married and less educated compared to individuals who do not report open defecation away from home.

Respondents are more likely to report open defecation when away from home based on these factors:

- **Gender**: Men (20%) vs. Women (12%)
- **Education**: Less education => more likely to OD
- **Marital Status**: Married (16%) vs. unmarried (4%)
- **Employment Type**: Unemployed (25%) Farmer (18%) Manual labor (21%)
- **Income**: HHS registered as poor with local government (24%) vs. not poor (14%)

Individual beliefs about sanitation yield additional insights regarding motivations behind continuing use of unhygienic latrines and open defecation practices.

- Individuals who agree that “It is acceptable to use a hanging latrine, because our ancestors used the same practice” are five times more likely to use unhygienic sanitation compared to individuals who do not agree with this statement: Odds Ratio (OR) = 5.0
- Individuals who agree with the statement “A latrine is an urban concept that is not needed for rural life” are close to three times more likely to use unhygienic sanitation compared to individuals who do not agree with this statement: OR = 2.83
- Individuals who agree that "Investment in children’s education is more important than investment in sanitation" are more than twice as likely to use unhygienic sanitation: OR = 2.38
- Individuals who believe that “VBSP loans for sanitation are not accessible” or who believe that “Building a latrine is expensive” are also more than/almost twice as likely to use unhygienic sanitation: ORs = 2.34 and 1.77 respectively

In the opposite direction, individuals who agree that unhygienic sanitation is a risk to a husband’s reputation (if his wife is seen) and to a family’s ability to be proud to share their home with visitors are more likely to practice hygienic sanitation.
4.4 Reasons for Using Unhygienic Sanitation when Hygienic Latrines are Available

Among 1,200 individuals interviewed, 160 reported having installed a hygienic latrine but continued to use unhygienic latrines due to beliefs that hanging latrines are ‘more comfortable’ (49%), habit (27%), the desire to feed/farm fish (23%), lack of water (14%), or because the hygienic latrine was unusable because it is broken or being used by others (10%).

Unhygienic sanitation practices are more likely to be used for defecation than for urination. Among individuals reporting unhygienic sanitation practices, 33% reported only using these practices for defecation compared to 5% for urination only, and 62% for both defecation and urination.
4.5 Reasons for Recent Investment in Sanitation

The most common reason for sanitation investment among families who installed a hygienic latrine in the last three years is a desire for more comfort and/or convenience, including protection from rain and easier latrine use at night. Other commonly cited factors associated with recent latrine installation include a desire for a cleaner home, desire for family safety and affordability.

The most commonly appreciated benefit of hanging latrine, among individuals using them, is the fact that they are perceived as ‘comfortable.’ In 6 out of 19 cases, respondents described liking the ‘comfortable’ aspect of their hanging latrine, perhaps linked to a preference for open-air defecation practices. But one-fourth of all cases (26%) responded that they do not like anything about their hanging latrine. The most commonly cited negatives associated with hanging latrines were the lack of protection during the rain and safety.
4.6 Sanitation Financing

Among 35% of respondents who plan to upgrade their household sanitation in the next 1-3 years, close to 8 out of 10 (77%) explained that they planned to finance the construction using family savings. The next most commonly cited sources of financing was a VBSP loan (14%) or a loan from a friend or relative (10%).

70% of respondents reported plans to install a latrine with help from a mason, 13% explained that they plan to do this by themselves and 34% with help from relatives, friends or neighbors.
To inform PSI’s program plans to expand flexible payment terms offered by affiliated retailers and Masons, the study assessed the extent to which rural customers were already benefitting from flexible payment terms offered by sanitation retailers and/or Masons. Only 23% of respondents who had installed hygienic sanitation as either a stand-alone or as a latrine-only construction project in the last three years reported benefitting from flexible payment terms. As reflected in Figure 14, flexible payment terms are more likely to be offered in cases of larger house renovation projects, and they are more commonly utilized in Dong Thap province than Tien Giang for stand-alone latrine installation projects.
5. Hand-washing with Soap

Approximately 84% of rural individuals are aware that hand-washing with soap is important after defecating compared to 68% awareness that this practice is important after eating. Rates of reported hand-washing with soap at these same critical junctures are significantly lower, indicating that knowledge is not translating into practice. In addition, knowledge gaps persist with respect to the specific times and cases when hands need to be washed with soap, with 67% of respondents stating that the way hands look or smell is associated with a critical time to wash hands. These findings suggest a need to emphasize the importance of washing hands with soap even if hands look and smell clean after defecating and before eating. Furthermore, consistent with other research conducted in Vietnam, this study highlights the importance of program approaches that extend beyond awareness raising to motivate families to place soap close to the location where hand washing takes place, as only 67% of respondents in this study had soap available at the place where family hand washing takes place (according to physical verification conducted by the researchers).

Beliefs that can be leveraged or addressed to motivate rural families to wash hands with soap at the critical junctures include:

- The **misperception that soap is not necessary** to clean hands. Individuals who agree with the statement “Hands can be cleaned with water alone” are 4 times LESS likely to wash hands with soap after defecating and before eating.

- The **belief that soap is expensive**. Individuals who agree with the statement “Soap is expensive” are three times LESS likely to wash hands with soap after defecating and before eating.

- The **belief that hands only need to be washed with soap when they look or smell dirty**. Individuals who agree with the statement: “It is only important to wash hands with soap when they look or smell dirty” are two and a half times LESS likely to wash hands with soap after defecating and before eating.

- The **perception that hand washing with soap is time consuming**. Individuals who agree with the statement “Hand-washing is a time-consuming activity” are two times LESS likely to wash hands with soap after defecating and before eating.
6. Exposure to & Behavior Change Associated with PSI Sanitation Social Marketing Campaigns

6.1 Sanitation Campaign Exposure

Among 560 rural individuals interviewed in Tien Giang province, 23% reported exposure to either TOT or ROTO communication through any channel approximately 10 months after PSI social marketing campaigns were launched in the same province. Exposure to PSI communications varied by district, with half of all respondents in Tan Phu Dong district reporting exposure compared to only 14% in Cho Gao. This is consistent with PSI’s communication placement and mason training/retailer engagement efforts, which also varied by district. For example, at the time of the study, PSI had placed 19 TOT outdoor billboards in Tan Phu Dong compared to 8 billboards in Cho Gao. PSI made a targeted effort in the districts with the most need, Cai Lay and Cai Be, by placing the highest number of TOT outdoor billboards in these districts, 20 and 23 billboards respectively. However, Tan Phu Dong’s exposure is significantly greater when compared to Cai Lay and Cai Be. It is important to note that Tan Phu Dong is an exceptional case because there is one road in and out of the district that everyone must use, thus their exposure to TOT messaging is strong, and thus districts like Cai Lay and Cai Be can only reach the same level of exposure through increased implementation of PSI’s programming.

Figure 19 Exposures to TOT or ROTO Communication by District
Among individuals who had been exposed to sanitation messaging through any channel, mason consultations were the most likely to be associated with unprompted recall of a key message related to the benefits of hygienic sanitation or ROTO tanks in particular. Following mason advice, commune loudspeakers, ferry boat signs, television/radio coverage (not supported by PSI) and outdoor billboards were associated with the highest rates of message recall. Only 44% of individuals exposed to sanitation posters at commune health stations were able to recall a key message, whereas 56% of individuals exposed to a poster (or standee or ROTO tank sticker) at a construction shop/sanitation retailer were able to recall a key campaign message.

6.2 Correlation between Exposure & Latrine Installation Behavior

Individuals exposed to TOT sanitation or ROTO tank messaging were 2.8 times more likely to have built a hygienic latrine in the last one year, compared to individuals who were not exposed. 38% of individuals exposed to sanitation messaging reported investing in a hygienic latrine in the past year, while only 18% of individuals who were not exposed reported installing a latrine during the same period. This finding demonstrates that exposure to TOT or ROTO campaign messages is motivating families to invest in hygienic sanitation.
7. Conclusion and Recommendations

The findings of this study indicate that market-based approaches and social marketing campaigns can contribute to improved sanitation. Increasing coverage within the Mekong Delta region and beyond is critical to efforts to help the Ministry of Health achieve national targets related to improving sanitation. The following specific conclusions can be drawn from the 2016 Sanitation and Hygiene Behavioral Study Vietnam:

- **Use of unhygienic latrines and open defecation practices are still common; associated factors should inform future programming even where hygienic latrines exist.** One-third of rural households surveyed still use unhygienic latrines and 15% of households surveyed practice open defecation when they are away from home. Households are five times more likely to use unhygienic sanitation practices if they agree with the statement “because our ancestors used hanging latrines, it is acceptable for us to use a hanging latrine.” Perceived advantages associated with hanging latrines including perceived comfort of open-air defecation practices need to be considered at the same time that remaining supply and demand-side barriers to hygienic sanitation are addressed.

- **Improved ventilation in latrine construction and related discussion with masons and clients about how ventilation can provide ‘open-air’ benefits in an improved sanitation setting may motivate rural families to invest in sanitation.** Among households that have access to hygienic and unhygienic latrines, 33% reported using unhygienic latrines for defecation only and 5% reported using unhygienic latrines for urination only. This data confirms other anecdotal feedback from rural consumers regarding the importance of smell. Engaging masons and clients to modify typical closed superstructure construction practices to achieve better ventilation may address concerns about smell and motivate more consistent use of hygienic latrines.

- **Perceived affordability of sanitation is barrier to installation.** This study and other research conducted in Vietnam reflects the reality that rural families face multiple demands on limited resources. In this study, families were less likely to invest in sanitation if they believed that children’s education is more important than sanitation. In addition, most rural families who have already invested in sanitation have used a loan of some type, most commonly from friends or family, to finance sanitation costs. This study highlights the potential to improve sanitation affordability by i) communicating actual cost of sanitation including lower-cost superstructure options; ii) targeting subsidies to the neediest families; iii) improving access to flexible payment terms offered by sanitation retailers or masons serving families investing in latrine-only construction projects.

- **Increased exposure to evidence-based sanitation messaging is likely to yield greater sanitation behavior change.** Households exposed to TOT sanitation or ROTO tank messages are 2.8 times more likely to have built a hygienic latrine in the last year, compared to those not exposed. While this data is promising evidence that social marketing campaigns are impactful, greater campaign coverage is needed given that less than one-fourth of all rural households reported exposure after the first 10 months of campaign implementation. **Convenience** during night and rain as well as **cleanliness** was identified as perceived advantages associated with hygienic sanitation. Emphasizing these benefits may help motivate rural families to invest in hygienic sanitation.

- **Additional programming to promote hand washing with soap is needed among rural families in Mekong Delta.** Campaigns should leverage factors associated with hand-washing with soap as well as address the misperception that water alone is sufficient to wash hands, and that hands that look or feel clean do not need to be washed with soap. In addition, programs should aim to improve perceived affordability of soap and motivate families to place soap at locations where hand washing needs to take place for protection at the critical junctures, particularly after defecating and before eating.
Contact

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