


**Global Scaling Up Sanitation Project**

# Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs

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By Jacqueline Devine  
Senior Social Marketing Specialist,  
Water and Sanitation Program

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The Global Scaling Up Sanitation Project, supported by the Water and Sanitation Program (WSP) and the Bill & Melinda Gates Foundation, works with national and local governments to learn how to combine the promising approaches of Community-Led Total Sanitation and Sanitation Marketing to generate sanitation demand and strengthen the supply of sanitation products and services at large scale, leading to improved health for people in rural areas.

This Working Paper is one in a series of knowledge products designed to encourage the exchange of ideas and information and to promote learning.

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## I. INTRODUCTION

In developing countries today, 2.5 billion people do not have access to basic sanitation services.<sup>1</sup> This has a profound effect not only on their health but also on their economic and social well-being. Traditional approaches to improving sanitation, which are aimed at building facilities, have not resulted in significant and sustained sanitation coverage. More promising strategies have focused on creating demand for improved sanitation by changing behaviors while strengthening the availability of supporting products and services<sup>2</sup>.

This heightened focus on changing sanitation behaviors necessitates that we first understand them. Why do individuals with latrines continue to defecate in the open? What factors enable individuals or households to move up what is known as “the sanitation ladder”<sup>a</sup>—that is, as they progress from open defecation to use of simple latrines to use of more improved options such as toilets connected to a sewer? What factors inhibit them from doing so?

SaniFOAM is a conceptual framework designed to assist program managers and implementers in answering some of these questions. Developed in Durban in February 2008 in a workshop attended by participants from 6 organizations, including UNICEF, the London School of Hygiene and Tropical Medicine, USAID and AED/Hygiene Improvement Project. SaniFOAM is currently being applied by the Global Scaling Up Sanitation Project in three countries, including Tanzania (10 districts), Indonesia (East Java), and India (in two states – Madhya Pradesh and Himachal Pradesh). Most notably, in East Java, the SaniFOAM framework has been successfully used to design qualitative and quantitative surveys, develop communication materials supporting community-led efforts aimed at eradicating open defecation and design a strategy aimed at strengthening the supply of sanitation products and services.

## II. OBJECTIVES

This paper introduces SaniFOAM and describes how it was developed. Publications planned for later release will provide a more detailed guide on how to apply SaniFOAM, sharing lessons learned from the field. These publications are intended for use by program managers implementing sanitation promotion interventions as well as members of multilateral and bilateral agencies, academic institutions and government and nongovernmental organizations (NGOs) working in water and sanitation.

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<sup>a</sup> For more details, see Water Supply and Collaborative Council and WHO (World Health Organization). 2005. *Sanitation and Hygiene Promotion, Programming Guidance*. Geneva: WHO

The objectives of the paper are to:

1. Demonstrate the value of using SaniFOAM to program managers
2. Illustrate how SaniFOAM can be applied at different stages of program implementation
3. Validate SaniFOAM for all types of sanitation promotion programs including both community-led and sanitation marketing approaches.

### **III. BEHAVIOR CHANGE FRAMEWORKS**

It is important to understand why a framework to explain or analyze sanitation behaviors can be useful. A framework can help in accomplishing the following:

- Analyzing the results of available formative studies
- Informing the design of new research
- Prioritizing the behaviors to be changed and the populations to be targeted
- Understanding and considering the range of factors that influence a particular behavior
- Focusing and prioritizing interventions on particular factors for behavior change
- Improving the effectiveness of interventions aimed at changing the behavior
- Identifying the appropriate indicators to monitor.

Behavior change frameworks of this kind have been used since the 1950s on a range of health behaviors, including vaccination, diet, exercise, HIV/AIDS prevention, and family planning.

SaniFOAM can assist program managers working in sanitation promotion at all stages of their interventions, from program design through implementation to monitoring and evaluation.

### **IV. SANITATION BEHAVIORS**

What is meant by *sanitation behavior*? And which behaviors are to be promoted when carrying out a program aimed at improving sanitation?

There are many sanitation behaviors of interest, and SaniFOAM can be useful in analyzing behaviors such as:

- Ceasing to defecate in the open
- Building a sanitation facility
- Improving (or upgrading) one's sanitation facility<sup>b</sup>
- Properly maintaining one's facility (including cleaning and emptying)
- Correctly disposing of children's excreta.

## V. FOCUS FIRST

Defining *what* behaviors one wants to improve, along with identifying *whose* behavior one wants to change, is a critical first step. The letter *F* in SaniFOAM, representing Focus, stands for this first step.

Some examples of target populations are as follows:

- Rural households
- Urban and peri-urban households
- Urban slum dwellers
- Informal or temporary settlement dwellers
- Households that currently share a facility with their neighbors/other families
- Male heads of households
- Mothers or caretakers
- Young children.

The *F* in SaniFOAM reminds us to focus and define

- The desired sanitation behaviors, and
- The target population.

Research on households in East Java offers an instructive example of the importance of defining the target population. Based on data from Indonesia's 2004 National Social and Economic Survey (SUSENAS), 12.82 percent<sup>3</sup> of households in East Java share a sanitation facility. In current sanitation programs, including those supported by the Global Scaling Up Sanitation Project, households can share a facility with their neighbors as a first step along the sanitation ladder. However, in a large study undertaken by The Nielsen Company<sup>4</sup> for the project, 30

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<sup>b</sup> Upgrading could be progressing from an unsafe facility to one that is considered hygienic in that it adequately separates human feces from human contact, or it could be moving further up the sanitation ladder. Further criteria apply to meet UNICEF/WHO Millennium Development Goal definitions as defined by the Joint Monitoring Program (JMP).

percent of individuals living in households that share a facility (coined “sharers”) reported that they are not currently satisfied and 32 percent also report that they defecate in the open. These findings suggest that targeting this segment for future phases of the intervention based on an understanding of relevant factors will be important for program outcomes to be sustained.

**Households sharing latrines – East Java Province, Indonesia**

Households can share a facility with their neighbors as a first step along the sanitation ladder. 12.82% of households in East Java do share a sanitation facility, yet 30% of the individuals in these households are not currently satisfied and 32% report that they defecate in the open.

Source: Indonesia National Social and Economic Survey (SUSENAS), 2004.

Once we have determined who and what to focus on, we are then ready to examine the factors that may influence the behaviors: these are known as the *behavioral determinants*.

## VI. BEHAVIORAL DETERMINANTS

*Behavioral determinants* are the factors that can facilitate or inhibit a behavior of interest among a certain population. For sanitation, these determinants can be internal (such as beliefs about feces) or external (such as sanctions for open defecation). The more we know about determinants and understand how they influence behavior, the more evidence-based and effective our interventions can be.

There are many different approaches, models, and frameworks for analyzing human behavior. SaniFOAM uses a classification system commonly used in fields such as consumer behavior, social marketing, and organizational management, to categorize sanitation behavioral determinants under three headings: *Opportunity*, *Ability*, and *Motivation*. These can be broadly defined as follows:

- *Opportunity*: Does the individual have the *chance* to perform the behavior?
- *Ability*: Is the individual *capable* of performing it?
- *Motivation*: Does the individual *want* to perform it?



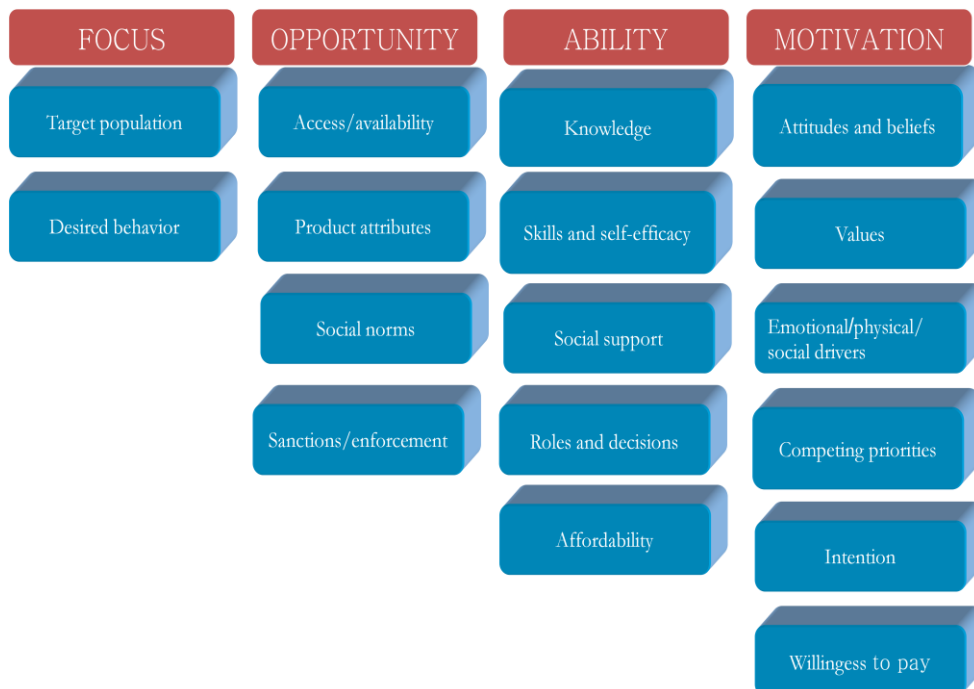
**Who Buys Latrines and Why?**

“Demand is created when consumers have motivation, opportunity, and ability to purchase sanitation technology which suits their needs. People require motivation to part with hard-earned cash. And there is a considerable body of research which indicates that latrine adoption is rarely motivated by messages about health benefits alone. More important are the immediate and direct benefits of increased convenience, comfort, cleanliness, privacy, safety, and prestige offered by home sanitation. However motivated they may be, consumers also need the opportunity and ability to purchase products or services that suit their household situation. Opportunity means access to good sanitation product information, builders, materials, and operating and maintenance services. Ability refers to the resources consumers must possess to make use of opportunities, including money, knowledge, skill, time, transportation, and control over decisions.”

Source: Water and Sanitation Program Field Note. *Who Buys Latrines and Why?*

Following the letter *F* for Focus, these categories spell out F-O-A-M, thus SaniFOAM has been adopted as the name for this sanitation behavior change framework (see illustration below). The following sections describe the determinants and provide examples from formative research findings and field-based experiences.

**SaniFOAM Framework**



## VII. OPPORTUNITY DETERMINANTS

As stated above, determinants under the Opportunity category influence whether an individual has the *chance* to engage in the desired behavior.

### Access and Availability

Access to—and availability of—products and services represents a key external or environmental factor. Here are some examples that illustrate the influence of access and availability in sanitation behavior:

- If a person working in a rice paddy does not have access to a latrine nearby, then chances are he or she will defecate in the open
- Someone may opt to defecate in the river if there is no water available in a latrine for anal cleansing.
- A household might not build a latrine if there are no masons within the community
- The type of sanitary platforms available in local market stalls will influence what type of facility a household builds.

#### **“Flying Toilets” – East Java**

“Flying toilets” is a term coined for the practice of defecating (or urinating) in plastic bags. In East Java, 7% of survey respondents reported having used this method recently.

Source: The Nielsen Company. “Total Sanitation and Sanitation Marketing Research in East Java.”

In East Java, “flying toilets” is the term used for the practice of defecating (or urinating) in plastic bags. In a 2008 survey in East Java, 7 percent of 2,009 respondents reported that they have used a flying toilet, almost all of them within the previous month. When asked why, the majority stated that it was in the middle of the night or while traveling, illustrating how limited access to a latrine can influence behavior.<sup>5</sup>

It should be highlighted, however, that availability of a latrine at home is not sufficient to stop open defecation. In East Java 18 percent of unimproved toilet owners admit to also defecating in the open; the percentage among improved toilet owners is almost the same at 16 percent.<sup>6</sup> Clearly, other factors are at play. They are explained in the following sections.

## Product Attributes

The products and services mentioned above must not only be available and readily accessible, they must also have the level of quality and other attributes sought after by the target population.

To illustrate the possible influence of product attributes on behavior, consider the following:

- A public toilet may be located near the rice paddy; however, if it is not well maintained but smelly, an individual may defecate in the open instead
- A mason may be available in the community; however, if he or she does not enjoy a reputation for competence and reliability, a household may hold off on building a latrine
- A range of sanitation platforms may be available in the local market stall. They have the desirable qualities a female head of household is interested in (such as being easy to clean), so the household decides to improve its latrine.

Comfort, convenience, pleasant (or at least not unpleasant) smell, cleanliness, absence of flies, ease of cleaning and maintenance, durability, and ventilation are just a few examples of product attributes for latrines. Formative research can help identify which attributes are most important for a particular target population. Strengthening of the local private sector's ability to offer and promote the relevant features can then follow.

### **Desirable product attributes – Rural Tanzania**

In Tanzania, surveys have found that people prefer a water closet because it is easy to clean, modern, and durable. Those who preferred VIP latrines reported “no smell” as the main reason.

Source: Water and Sanitation Program and PricewaterhouseCoopers. *Market Research Assessment in Rural Tanzania for New Approaches to Stimulate and Scale up Sanitation Demand and Supply.*

Respondents in a survey in Tanzania were asked about the attributes of different types of toilet they had tried. Those who stated that their favorite type of toilet was a water closet said this was because it was easy to clean, modern, and durable. Those who preferred VIP latrines reported “no smell” as the main reason. This information was useful in developing effective promotional materials as well as training masons on what attributes and benefits to highlight when proposing options to customers.<sup>7</sup>

It should be noted that for some population segments, open defecation itself has positive attributes. For example, defecation at a river site offers an opportunity to socialize. Interventions aimed at eradicating open defecation need to take into account the perceived trade-offs that individuals may feel they are making when adopting more hygienic practices.

**Positive attributes of open defecation – East Java**

In East Java, 34% of those who habitually open-defecate indicated that they were satisfied with this practice. In a qualitative study people reported that this allowed them to be independent and some explained that it was a less smelly experience.

Source: The Nielsen Company. “Total Sanitation and Sanitation Marketing Research in East Java.”

In East Java, 34 percent of those who habitually open-defecate indicated that they were satisfied with this practice. Only 60 percent agreed with the statement that there are disadvantages to defecating in the open. The qualitative portion of the same study conducted in East Java revealed that the practice of open defecation allowed them to be independent by not having to bother their neighbor and was viewed by some as not being as smelly an experience. It should be noted that 60 percent of the open defecators had never tried using a toilet before, suggesting they did not have a clear appreciation of the possible positive benefits of using one. Interventions using demonstration toilets to incite trial would be appropriate.<sup>8</sup>

**Social Norms**

Social norms are the rules that govern how individuals in a group or society behave. Any behavior outside these norms is considered abnormal. Put simply: *If everyone is doing it, then why can't I? Conversely, If no one is doing it, can I?*

The role of social norms in influencing behavior has been recognized in different fields, ranging from smoking cessation to the use of car seat belts and, more recently, for obesity, which in North America has been qualified as “socially contagious.”<sup>9</sup>

Social norms have been recognized to influence open defecation. As a participant in a focus group discussion in East Java said, “*Yeah, I am embarrassed if people pass by, but I think everybody is used to it, everybody also does that ...*”<sup>10</sup> Approaches such as Community-Led Total Sanitation (CLTS), which were initiated in Bangladesh<sup>11</sup> and have since been replicated in several states in India and elsewhere, use social mobilization techniques to move communities from one social norm (open defecation) to another (universal latrine use).<sup>12</sup>

As with many determinants, social norms can be a facilitator or deterrent to a behavior, depending on the situation. They provide *implicit* social permissions or sanctions, not just around open defecation but around all types of sanitation behaviors. For example:

- A toddler sees another child defecate in the field and regards it as a signal that is okay to do it, and so he or she does it as well
- A shared toilet user does not clean up after using it because the previous user did not
- A worker in a river paddy opts to use a public toilet because she has seen her coworkers use it
- A household decides on a particular pour-flush model because they have observed that most households in their community have it.

These social norms can be objective, based on what can be currently observed. They can also be inferred based on those traditional practices. As a villager in Orissa remarked, “*if [open defecation] was good enough for the Maharajas, it’s good enough for me.*”<sup>13</sup> Similarly, social norms are also influenced by age-old habits as indicated by a man from Soforia village in Bangladesh, who stated: “*We have been defecating in open places over the decades. We acquired this habit from our antecedents (bap dada). It has been transforming from generation to generation (bangso porosporay). We haven’t yet given up this habit. I think it will take more time to be habituated with the latrine use.*”<sup>14</sup>

Social norms were examined in a large study conducted in 2008 in East Java by The Nielson Company for the Global Scaling Up Project. Statistical analyses showed that social norms were a significant determinant when it comes to open defecation. Respondents were asked to state their degree of agreement or disagreement along a four-point scale to a series of eight statements. The following results illustrate the percentage who strongly agreed with statements related to the acceptability of open defecation and compare the social norms of those who are currently open defecators with those that are not.

### **Attitudes toward open defecation-East Java**

It should be noted that social norms around sanitation may not be homogeneous within a target population and may vary across regions or even ethnic groups. A case in point is in rural Tanzania, where social norms around open defecation varied considerably across the districts

	Open Defecators (%)	All Others (%)
	(n=545)	(n=1464)
Most of the people I know defecate in the toilet	31	74
If our ancestors defecated in the open, than it's alright for us to do that	31	11
Defecating in the open is unethical	24	75
Defecating in the open is unacceptable	23	55
Defecating in the open is a proper thing to do because everybody does so	59	17
It's acceptable if children defecate in the open	60	39
It's acceptable to defecate in the open if they can't reach the location of the toilet	69	44
People who defecate in the open won't be accepted in their community	14	24

Source: The Nielsen Company. *Total Sanitation and Sanitation Marketing Research Report*.

studied<sup>15</sup>. Program managers would need to know this when designing their interventions so that communication channels and messages could be tailored accordingly and adequate monitoring planned.

### Sanctions and Enforcement

While social norms provide implicit or implied permissions or sanctions for people to engage in a certain behavior or not, formal sanctions and their enforcement provide them in an *explicit* way.

CLTS approaches encourage villages to establish systems for punishing those who continue to defecate in the open. Punishments can involve monetary fines or social sanctions such as mocking<sup>15</sup> or throwing stones at those who continue to practice open defecation. By establishing a set of common expectations about others' actions and establishing informal or formal punishments for deviating from accepted practices, the incentive to conform may outweigh the incentive to defecate in the open.<sup>16</sup> Thus, these sanctions (assuming they are enforced) diminish one's opportunity to defecate in the open.

For example, in May 2009, in the district of Wakiso, Uganda, more than 40 people were arrested and fined 50,000 shillings each (around US\$22) by the district magistrates' court for not having pit latrines in their homes. The operation was organized by the district chairman, who wanted district residents to change their attitudes to ensure they maintained proper sanitation and hygiene in their homes.<sup>17</sup>

## VIII. ABILITY DETERMINANTS

There are three determinants under Ability which influence whether a person has the *capacity* to engage in a certain sanitation behavior: knowledge, social support, and self-efficacy.

## Knowledge

Knowledge is acquired through learning and may pertain to objects or products, behaviors and even outcomes. Inaccurate or incomplete knowledge, as well as lack of knowledge altogether, may prevent individuals from engaging in appropriate sanitation behaviors.

Being aware of the health and environmental risks of unhygienic sanitation is a commonly cited knowledge. For example, transect walks used in CLTS-type approaches serve to generate this knowledge by sensitizing villagers to the volume and location of feces in their community, helping to make them realize that they are, in a sense, eating each other's feces.

However, there are many other types of knowledge pertinent to sanitation behaviors of interest. Some examples are as follows:

- A rice paddy worker knows where the closest public toilet is located
- A rural household knows where to find a qualified mason to build their latrine
- An urban dweller knows how to contact a company that can empty her septic tank
- A mother knows where she should dispose of her infant's feces
- A household is aware of an informal saving scheme that will allow them to get the funds to build a latrine.

### **Knowledge in Blantyre and Lilongwe – Malawi**

Knowledge of sanitation and hygiene behavior appears to be high in these regions, including understanding that lack of safe water causes diarrheal diseases, that hands should be cleaned after the toilet, that “good” slab prevents diarrheal diseases, and that dirty latrines spread germs.

Source: Water and Sanitation Program. *Lilongwe and Blantyr Sanitation Marketing and Hygiene Promotion Project*.

A 2007 report on the state of hygiene knowledge in Blantyre and Lilongwe in Malawi found the following: “Though some misinformation among consumers in both Lilongwe and Malawi exist—for example, that a broom is sufficient for cleaning and that a mud floor is ‘good’ sanitation—knowledge of sanitation and hygiene behavior appears to be high. In a recent study, the most commonly cited knowledge included the fact that lack of safe water causes diarrheal diseases, that hands should be cleaned after the toilet, that ash kills latrine odors, that ‘good’ slab prevents diarrheal diseases, and that dirty latrines spread germs...”<sup>18</sup>

It is important to emphasize that knowledge, while critical, is not sufficient to generate behavior change. The knowledge-behavior gap encountered in smoking cessation and condom promotion campaigns, to name but a few examples, explains in part why individuals engage in certain behaviors even when they are aware of the associated risks. This underscores the importance of examining the influence of other factors contained in SaniFOAM.

## **Skills**

There is another type of knowledge that warrants its own category: *skills*. In many communities, households tend to build their latrine themselves rather than hire a mason or retail outlet to do it. For these self-builders, the knowledge needed to go about this is referred to as *skills*. Examples of skills required to build a latrine include:

- How to construct a proper slab
- How to select the most appropriate technology option based on geological and other factors
- How deep to dig the pit
- How to line a pit.

These skills can be acquired from masons, members of the community who may be considered opinion leaders in the area, or neighbors or relatives who may have built a similar facility. (Also, see the next section, “Social Support.”)

Regardless of their actual skill level – high or low – individuals may opt not to build a latrine if they have limited confidence in their ability. This behavioral determinant is known as *self-efficacy*.<sup>c</sup>

### **Perceived skills to move up the sanitation ladder – Rural Tanzania**

Among rural households in Tanzania, the proportion of respondents who felt a member of their household has the skills to improve their sanitation facility was relatively low.

Source: Water and Sanitation Program and PricewaterhouseCoopers. *Market Research Assessment in Rural Tanzania for New Approaches to Stimulate and Scale up Sanitation Demand and Supply*.

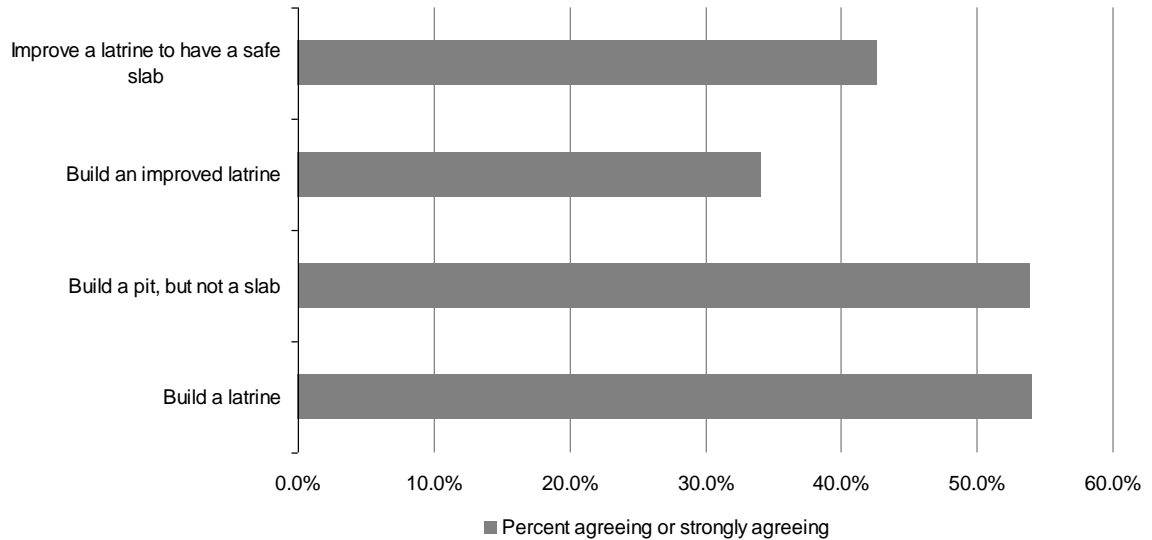
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<sup>c</sup> For more information on self-efficacy, see A. Bandura, *Social Foundations of Thought and Action: A Social Cognitive Theory* (Englewood Cliffs, NJ: Prentice Hall, 1986).



In the survey for the Global Scaling Up Sanitation Project among rural households in Tanzania, the proportion of respondents who felt a member of their household had the skills to improve their sanitation facility was relatively low, as can be seen in the following graph:

**Perceived skills to move up the sanitation ladder in rural Tanzania (N = 978)**



Source: Water and Sanitation Program and PricewaterhouseCoopers. *Market Research Assessment in Rural Tanzania for New Approaches to Stimulate and Scale up Sanitation Demand and Supply.*

The implication of this finding is that interventions must seek to strengthen households’ skills as well as those of a network of easily accessible masons.<sup>19</sup>

It should be mentioned that skills for other sanitation behaviors may also apply, for instance:

- How often, and where to empty a full pit
- How to properly clean a toilet
- How to teach a toddler to use a potty
- How to dispose of a child’s feces.

**Social Support**

Social support is the physical and emotional comfort given to individuals by family, community members, friends, coworkers and others. Social support can take several forms: physical, emotional or informational. These are some examples:

- A daughter helps an elderly parent to use a latrine
- A community health worker praises a household for having added a slab to their pit latrine
- A villager provides advice to his neighbor on how often he should empty his pit latrine
- A village is recognized as having reached total sanitation status.

#### **Social support – East Java**

A study in East Java identified neighbors, friends, and relatives as the most important source of information not only on what types of latrines to build but also on how to build them, surpassing even masons.

Source: The Nielsen Company. "Total Sanitation and Sanitation Marketing Research in East Java."

When surveying households who had built a toilet within the previous year, the Global Scaling Up Sanitation Project study in East Java identified neighbors, friends, and relatives as the most important source of information on types available and how to build them, surpassing masons. Based on this finding, the Global Scaling Up Sanitation Project is continuing to build capacity within the community by training opinion leaders on toilet options in addition to training masons and other sanitation providers.<sup>20</sup>

If formative research identifies social support as an important determinant for a certain behavior and population, then the project may strongly consider that peer-education, community outreach, or other interpersonal communication should be included in the intervention mix.

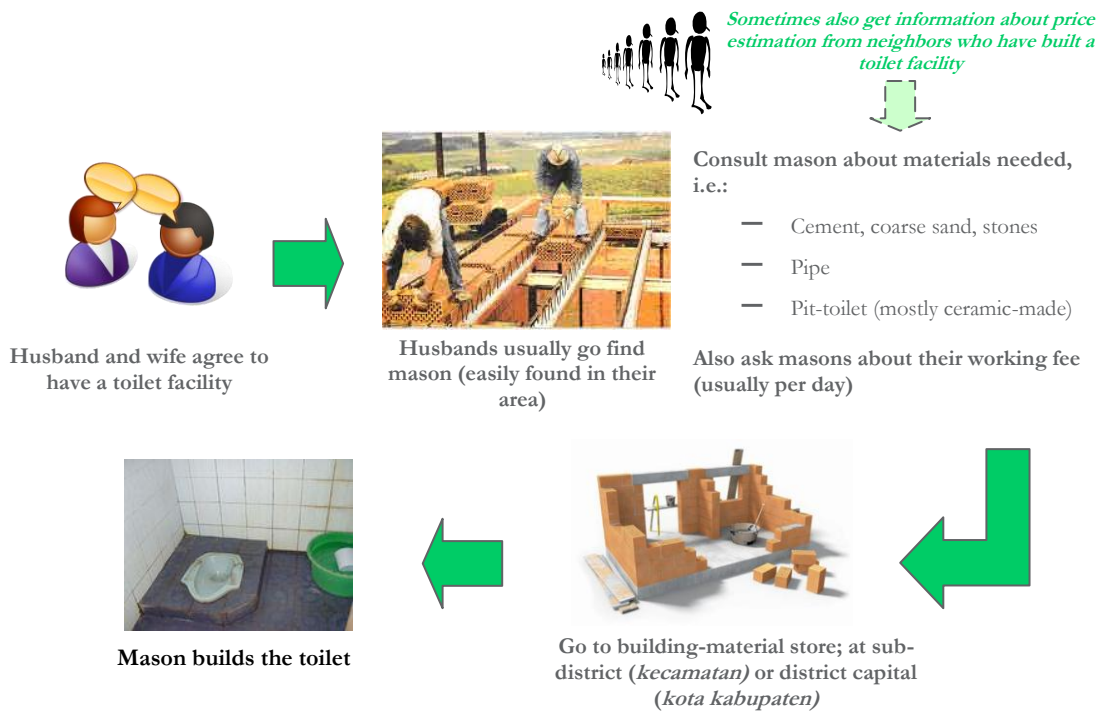
#### **Roles and Decisions**

Household decisions regarding sanitation behaviors are numerous. Regarding the acquisition of a latrine, the following are examples:

- What type of latrine should be built?
- What features are needed?
- How much will be spent and how will money be saved up?
- Where will it be installed?
- Who will be able to access and use it, that is, will it be shared with neighbors?
- Who will choose the construction materials? Where will they be bought and who will do the actual purchase?
- Who will install the latrine?

The person(s) within the household who takes the lead on each of these decisions and has some influence will certainly vary across cultures and regions and may also evolve over time. In some regions, such as East Java, female heads of household have the final say in hygiene matters and male heads of household decide on major household expenditures. In other areas, decisions are shared (see illustration below). Since the decision-making process for a durable good or household improvement such as a latrine can be lengthy and have multiple steps,<sup>d</sup> household members other than the heads, such as children and in-laws, may also play an influential role. A better understanding of the various roles and dynamics of decision-making at the household level will lead to more effective targeting and messaging within interventions.

**Shopping process for a latrine-- East Java**



Source: The Nielsen Company. "Total Sanitation and Sanitation Marketing Research in East Java."

For households that do not own their property, their decision-making role (and power) in major sanitation behaviors, such as upgrading latrines, may be limited, in which case the intervention would also need to target the landlords.

<sup>d</sup> The reader is encouraged to read the works of Jenkins and Scott who have studied the decision-making process behind latrines. See: Jenkins, Marion W. and Beth Scott. 2007. "Behavioral Indicators of Household Decision-Making and Demand for Sanitation and Potential Gains from Sanitation Marketing in Ghana." *Social Science & Medicine*; 64 (12): 2427-42.

For other sanitation behaviors, roles and decisions can also be important. Stopping open defecation among younger children may involve the mother but also the father if he plays a lead role in discipline matters. The female members may take the lead in cleaning the latrine but males may control the budget for the products needed. Again, program managers need to be aware of gender differences and decision-making dynamics that may ultimately influence sanitation behaviors in order to hone their targeting and strategies.

### **Affordability**

Affordability has certainly been a behavioral determinant that has received a lot of attention from program managers, government agencies, and donors. While the best strategy to address it has been and continues to be the topic of heated debate, there is little disagreement that meeting the sanitation needs of those in the lowest income quintile is challenging.

Affordability in the context of SaniFOAM refers to one's *ability* to pay for a sanitation product or service or to engage in a sanitation behavior. In addition to financial constraints, constraints can be time-related. For example, a mother may be unable to take 10 minutes to bring her child to her neighbor's toilet because she needs to feed her crying infant.

Affordability is influenced by many factors including household income, availability of cash, time of year, access to credit, and availability of accessibly-priced sanitation options in the area. Affordability is different from willingness to pay. A household may be able to afford to purchase a latrine, but if there is a history of subsidies in the region, it may not be willing to pay. While affordability affects a household's *ability* in matters of sanitation, willingness to pay influences at the *motivational* level and will be discussed in the next section.

#### **Ability and willingness to pay – Cambodia**

In Cambodia, respondents were asked if they be able and willing to buy their "ideal" latrine if it cost just US\$100. The majority said they would be willing to pay for this latrine but not straight away, needing time to save.

Source: Roberts and Long. *Demand Assessment for Sanitary Latrines in Rural and Urban Areas in Cambodia*.

In a qualitative study in Cambodia, respondents were asked whether, if their "ideal" latrine was available at a special price so that it cost US\$100, they would be able and willing to buy it. The majority said they would be willing to pay for this latrine but not straight-away, that they would need time to save. Some respondents felt that they would purchase such a latrine within three to

six months. However, several stated that they would not purchase such a latrine at all as they did not have enough money.<sup>21</sup>

Perceived affordability can also differ from actual affordability if the household or individual is not aware of lower-cost options (for example, if such options are not offered locally or if none of their neighbors has one) or if the lower-cost options are undesirable. If the research indicates that these are relevant issues, then the intervention needs to focus on broadening awareness and availability of a range of options. Another option is to re-position lower-end latrines, through appropriate communication strategies, so they are regarded as “aspirational.”

**What’s in a name: *letrinas* in Peru**

In Peru, more affordable options have a bad name, latrines in particular. Having a latrine means: “I am poor.”

Source: Baskovich. *Building Inclusive Sanitation Markets for the Poor*.

In Peru, lower-cost and thus more affordable options have a bad name. Latrines in particular do not enjoy good perceptions. Having one means: *I am poor*. The Alternative Pro-Poor Sanitation Solutions Project headed by WSP is seeking to change these perceptions through its marketing efforts.<sup>22</sup>

## IX. MOTIVATION DETERMINANTS

For a behavior to take place, an individual must also be motivated to engage in it. The following section examines the behavioral determinants that fall under Motivation.

### Attitudes and Beliefs

Attitudes and beliefs relate to an individual's understanding and perceptions of the sanitation products and services and of the sanitation behaviors themselves as well as those who engage in them. Beliefs may not be factually correct, leading to misconceptions that can impede the adoption of safe sanitation practices. Individuals are often unaware of their beliefs and attitudes which may be positive, negative, or even neutral.

The following are examples of how beliefs and attitudes can influence sanitation behaviors:

- Believing that feces may contain harmful spirits will motivate you to defecate in the open far from your home
- Believing that infant's feces are harmless will motivate you do dispose of them in the open
- Having a positive attitude toward latrines because of prior pleasant experiences will motivate you to build one.

#### **Misconceptions about feces and sanitation – East Java**

A considerable proportion of people in East Java have misconceptions around the environmental risk of feces. Many households have toilets with PVC toilets that evacuate waste directly into the river. Almost two-thirds of open defecators agree with the statement that “the flow of the river cleans out the feces.”

Source: The Nielsen Company. “Total Sanitation and Sanitation Marketing Research in East Java.”

A considerable proportion of people in East Java have misconceptions around the environmental risk of feces, particular among those who defecate in the open. *“I don't think it is a mistake [to defecate in the open] as I often see that my waste is beneficial to feed the fish in the river. They eat it directly while it is there.”* Says another, *“If the water goes to the paddy field, [my waste] can act as fertilizer; it will help the paddy to grow, using organic fertilizer.”* <sup>23</sup>

Whether these are true misconceptions or psychological “refuges” (excuses for one's behavior), it is clear that to be effective a sanitation promotion program would need to address them. In East Java, many households have toilets with PVC toilets that evacuate waste directly into the river. Almost two-thirds of open defecators agree with the statement that “the flow of the river cleans out the feces.” Through the Global Scaling Up Sanitation Project or STOPS, as it is called in Indonesia, WSP and partners aim to correct these dangerous beliefs.

#### **Taboos – Rural India**

In some rural areas of India, “there is a taboo that the kitchen is considered as a pure place, whereas latrines are considered as dirty places.” Interestingly, this perception differed substantially among users and non-users of latrines.

Source: Heierli, Urs, et al. *One Fly Is Deadlier Than 100 Tigers: Total Sanitation as a Business and Community Action in Bangladesh and Elsewhere.*

According to researchers Urs Heierli and Jaime Frias, et al, in some rural areas of India, “there is a taboo that the kitchen is considered as a pure place, whereas latrines are considered as dirty places, and for this reason, a latrine should not be located near the home or the kitchen.

Interestingly, this perception differed substantially among users and non-users of latrines: Latrine users had a strong belief that it was not latrines but the open field that were dirty and polluted. Non-users, on the other hand, had the opposite reaction – that it was latrines that were dirty and polluted.”<sup>24</sup>

One key belief is an individual’s perceptions about the main causes of events in his or her life: This particular belief is often referred to as *locus of control*<sup>e</sup>. Individuals with an internal locus of control have a strong sense of authority over their own lives. By contrast, to possess an external locus of control is to believe that God, fate, poverty, or some other extrinsic force exerts control over one’s circumstances or behavior. Individuals with an external locus of control are less likely to engage in healthy behaviors and may display higher levels of resignation and apathy about the future. These individuals are also more prone to believe that suffering and illness are an inevitable part of life.<sup>f</sup> Although locus of control has been studied in fields such as HIV/AIDS, its role in influencing sanitation behaviors remains an area for investigation.

## Values

Values are related to beliefs. Whereas attitudes and beliefs lie mostly at the individual level, values operate at the collective level. Values represent important and enduring ideas shared by the members of a community

about what is good or desirable and what is not. Values that favor or are consistent with the adoption of safe sanitation practices can motivate individuals to act. A sanitation program intervention can tap into the relevant values and promote sanitation by strengthening the association between the value and the desired behavior.

### Values and sanitation – Peru

In Peruvian society, having a sanitation facility at home means modernity and progress, two important values, and is also believed to add economic value by enhancing the resale value of the home.

Source: Baskovich. *Building Inclusive Sanitation Markets for the Poor*.

<sup>e</sup> Julian Rotter introduced this concept in the late 1950s.

<sup>f</sup> It is important to note that some people with a high external locus of control may be correct in that assumption – if they are at the bottom of society they will have less power, money and influence to make changes in their lives.

In Peru today, having a sanitation facility at home means modernity and progress, two important values in Peruvian society. In addition, it is also believed to add economic value by enhancing the resale value of the home. In its Alternative Pro-poor Sanitation Solutions Project, WSP/Peru and its partners are tapping into the values when promoting improved sanitation and developing communications messages.<sup>25</sup>

### **Emotional, Social and Physical Drivers**

Drivers are strong internal thoughts and feelings that motivate behavior. They can be positive or negative, and can stem from unmet physical, emotional, or psychological needs. Such drivers have been identified through research in several countries as motivators to engage in safe sanitation behaviors. CLTS approaches have focused on negative drivers, particularly shame and disgust.<sup>26</sup>

Other possible emotional, social and physical drivers to motivate people to cease open defecation are as follows:

- Safety (for example from snakes or other elements, for children and women in particular)
- Comfort
- Privacy (for women in particular)
- Status
- Pride and self-esteem.

These same drivers can be motivators to move households up the sanitation ladder (for example by acquiring their own facility or upgrading it). By contrast, the health benefits from improved sanitation have rarely been identified as a primary driver.

#### **Emotional drivers – Tanzania**

In rural Tanzania, shame was a significant driver. In total, 89% of those surveyed agreed that people in the community would feel ashamed if they did not have a latrine.

Source: Water and Sanitation Program and PricewaterhouseCoopers. *Market Research Assessment in Rural Tanzania for New Approaches to Stimulate and Scale up Sanitation Demand and Supply*.

A range of biological and emotional drivers to improve sanitation practices were identified among the communities surveyed in rural Tanzania. Shame was a significant driver. In total 89 percent



of those surveyed agreed that people in the community would feel ashamed if they did not have a latrine. Privacy and safety were also cited as drivers.<sup>27</sup> These drivers should not be assumed to be universal across all populations and regions. They need to be identified or validated through research. The relevant drivers can be built into communication efforts such as mass media campaigns or in the “triggering”<sup>g</sup> process at the community level.

For other sanitation behaviors, emotional drivers may be of relevance and warrant further investigation through formative research. For example, pride may drive individuals to clean their facility more often. Being a good mother may motivate mothers to teach toddlers to use the potty and dispose of their children’s feces correctly.

Households and individuals face many competing demands when it comes to spending; the lower the income, the more these competing demands will influence behavior. Financial demands can be for day-to-day necessities (such as food, shelter, water and transportation), occasional or periodic expenses (such as school fees, urgent home repairs, weddings or religious celebrations) or discretionary expenditures (such as home improvements). Households with strong financial pressures will often place a lower priority on sanitation and be less motivated to acquire a facility.

The program manager’s challenge is to elevate sanitation in the list of priorities while at the same time being sensitive to the very real demands faced by households and individuals. Intensive CTLS-type approaches, as well as those with community-level incentives for achieving open-defecation-free status (whether a cash or recognition award), help elevate the importance of improved sanitation.

**Sanitation competing with cell phones -- Rural Tanzania**

In three of the five districts studied in a rural Tanzania, household sanitation did not rate as high as a priority as other investments, such as mobile telephones, school fees, bicycles, and livestock.

Source: Water and Sanitation Program and PricewaterhouseCoopers, *Market Research Assessment in Rural Tanzania for New Approaches to Stimulate and Scale up Sanitation Demand and Supply*.

Sanitation may even compete with cell phones. In three of the five districts studied in rural Tanzania, household sanitation did not rate as high as a priority as other investments (such as

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<sup>g</sup> Triggering refers to the initial community-level activities which aim to result in a collective awareness of the risks of their sanitation practices and a subsequent social mobilization and commitment to change behavior.

mobile telephones, school fees, bicycles and livestock). However, in two other districts respondents tended to prioritize sanitation above other competing priorities. Given the limited resources at their disposal, households considered that they may derive more long term benefits from consumer goods than from sanitation. For example, animals provide a source of food, a mobile phone or a bicycle may enable the household to hold down a job, school fees may be considered a long-term investment (e.g. for old age, when children obtain better jobs and are able to support their families).<sup>28</sup>

Understanding how households prioritize expenditures through high-quality formative research can help program managers be more effective in the following ways:

- If we know from research what improved sanitation is truly “competing with,” we are better able to position it in our communication intervention. For example, if the research indicates that sanitation competes with cell phones, we can highlight the benefits that a cell phone cannot yield but improved sanitation can;
- Competing priorities may have seasonal variation, so planning the timing of an intervention is important. For example, during harvest season, increased availability of cash may allow households to give greater priority to discretionary expenditures and be more receptive to messages on latrine upgrades. Conversely, running a sanitation promotion campaign during Ramadan may not be advised given that households traditionally need to save up and spend on end-of-fast celebrations.

#### **Competing priorities as opportunities -- East Java**

In East Java, a study revealed a rather complex hierarchy of financial priorities. Sanitation figures low on the priority list, directly competing with household improvements and goods such as TVs.

Source: The Nielsen Company. *Total Sanitation and Sanitation Marketing Research Report*.

In East Java, a study found a rather complex hierarchy of financial priorities. Once essential expenditures (such as food and rent) have been covered, households will consider more discretionary expenses. These are prioritized in decreasing order as follows: gifts to others (for example for weddings), education (such as school fees or uniforms), children or family needs (such as weddings), and Lebaran or the end of Ramadan (such as clothing and special foods). If these last expenses have been covered, then others may be considered, in decreasing priority, as follows: repaying debt, acquiring something that can be resold later (such as gold or a goat), buying a luxury good (such as a TV or a fridge) and renovating the home (such as buying or

upgrading a latrine). Though sanitation figures low on this priority list, directly competing with household improvements and goods such as TVs, the Global Scaling Up Project team decided to turn a competing demand into an opportunity. Since paying off debt is a matter of honor in Javanese society and therefore prioritized, the Global Scaling Up Project is seeking to facilitate access to informal and formal credit schemes for sanitation.<sup>29</sup>

## Intention

Intention represents an individual's plan on whether or not to engage in a certain behavior. Intention is thought to be a powerful motivator of behavior and, according to the Theory of Reasoned Action,<sup>30</sup> is a predictor of behavior change.

To understand intention, it is helpful to view sanitation behavior change as a process taking place over time. Models like the Stages of Change model<sup>31</sup> view behavior as a series of steps, beginning with an awareness of a situation or problem (such as that cigarettes cause cancer) and ending with behavioral maintenance (such as continuing to not smoke cigarettes). Roughly speaking, intention represents a midpoint along this continuum. Marion Jenkins and Beth Scott<sup>32</sup> have studied households' decision-making around sanitation in Benin and Ghana, among other countries. They view the process of adopting sanitation as having three stages: households first develop a preference for changing sanitation; they then form an intention to build; and they end by making the choice to install a toilet.

### **Intentions in peri-urban settlements of Lusaka -- Zambia**

In 2008, a survey found that around three-quarters of households in Lusaka's peri-urban settlements planned to upgrade their latrines. A further 44% of those who had no plans said they would consider upgrading if they received some assistance.

Source: Water and Sanitation Program and Africa and Ministry of Local Government and Housing. *Development of Sanitation Marketing Strategy and Hygiene Promotion Program for Peri-Urban Settlements of Lusaka, Zambia.*

In Zambia, based on a quantitative survey conducted in 2008, it was learned that around three-quarters of those surveyed in peri-urban settlements of Lusaka had some plans to upgrade. This proportion varied by type of respondent (owners, landlords, tenants, mothers, fathers). Upgrading the roof was mentioned by most, followed by plans to upgrade the door, vent pipe, walls and slab. A further 44 percent of those who had no plans said they would consider upgrading their latrines if they received some assistance (materials, loan or donation).<sup>33</sup>

By understanding where individuals or households are in their decision-making process, program managers can be more effective in the following ways:

- **Market segmentation and program differentiation:** Stage of decision-making represents a useful way to segment the market and develop differentiated strategies, resources permitting. For example, individuals or households who have not even begun the process to build a latrine may not be aware of a problem and/or may be satisfied with their current practices. Interventions targeting these may focus on awareness-raising through “triggering” or other techniques. For those intending to build a latrine, interventions may concentrate on strengthening knowledge of possible options (the determinants will need to be identified through research);
- **Segment prioritization:** An individual who intends to change his or her sanitation practices is more likely than someone who does not. If limited funds are available, program managers may do well to prioritize households who already have plans to upgrade facilities;
- **Resource allocation:** Related to the points above, quantifying the proportion of households at each stage may help allocate appropriate budgets. It may also help identify which implementing partners are the most appropriate.

### **Willingness To Pay**

Willingness to pay (a motivation) was mentioned earlier under ability to pay (an ability determinant) and is pertinent to several sanitation behaviors, including acquiring a latrine, upgrading an existing one, and maintaining the facility.

Willingness to pay should not be regarded as either a *yes* or a *no*. For example, some households may be willing to pay for materials for a latrine but not the labor. Such households may prefer to self-build, and interventions targeting them may need to focus on strengthening their construction skills and providing information on options at outlets where materials would be sold or referring them to certified masons using a brand-promotion approach.

Willingness to pay can be influenced by numerous factors, including the following:

- **Expectations of subsidies:** If a community has heard of subsidies being offered or planned, households may not be as willing to pay to acquire a latrine;

- **Perceived marginal value:** If a household has an unimproved latrine, it may not upgrade if its members do not perceive much of a gain in benefits compared to costs. Another example is provided by a household that does not perceive any value in hiring a mason if members believe they can do it themselves.

Willingness to pay should also be seen as “how much” households are interested in paying and for what feature or benefit. If program managers have this information, they can compare it with the actual prices among suppliers. A wide gap between the two would necessitate one or more of several possible strategies, including:

- Improving the enabling environment<sup>h</sup> to reduce costs (e.g., advocate to reduce tariffs on imported products)
- Strengthening capacity within the supply chain, again to reduce costs (e.g., improving the production process for slabs)
- Elevating the perceived value of the upgrade or feature through standard marketing approaches, such as advertising and branding.

## X. CONCLUSION

SaniFOAM is a framework to help program managers analyze and explain sanitation behaviors of various target populations. More specifically, SaniFOAM can be applied to do the following:

- **Analyze results of available formative studies:** Findings are mapped into each of the determinants. This may lead to the identification of gaps to be investigated through additional spot research;
- **Inform the design of new research:** A series of questions can be developed to explore all or a subset of the determinants;
- **Focus:** Prioritize the target populations and behaviors to change;
- **Inform the development of the program:** Once relevant determinants have been identified, the appropriate interventions can be developed;
- **Monitor appropriate indicators:** Indicators aimed at measuring changes in the determinants can be formulated and tracked (as outcomes or intermediary results) over time.

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<sup>h</sup> WSP has a framework for measuring and improving the enabling environment for sanitation which includes institutional capacity and policy (e.g. around subsidies) among other dimensions. See [www.wsp.org](http://www.wsp.org) for more information.

It is expected that SaniFOAM will evolve as additional research findings are incorporated and new studies are conducted. Of particular interest are the adaptation of the framework to different target populations and behaviors and the emergence of potential determinants.

**Threat: A motivation determinant among mothers?**

Anthropological studies...have indicated that mothers fear the use of latrines by younger children for two reasons: first, because they consider them contaminated with adult feces, and second, because they consider them unsafe, fearing that the child may fall in.

Source: Gil and Lanata, et al.. *Children's Feces Disposal Practices in Developing Countries and Interventions to Prevent Diarrheal Diseases: A Literature Review.*

Anthropological studies have indicated that “mothers fear the use of latrines by younger children for two reasons: first, because they consider them contaminated with adult feces, and second, because they consider them unsafe, fearing that the child may fall in.”<sup>34</sup> This would suggest adding “threat,” a determinant that is used in HIV/AIDS behavior-change frameworks, to SaniFOAM for children’s sanitation behavior.

This paper introduces SaniFOAM and describes how it was developed. Publications planned for later release will provide a more detailed guide on how to apply SaniFOAM, sharing lessons learned from the field. These publications are intended for use by program managers implementing sanitation promotion interventions as well as members of multilateral and bilateral agencies, academic institutions and government and nongovernmental organizations (NGOs) working in water and sanitation.

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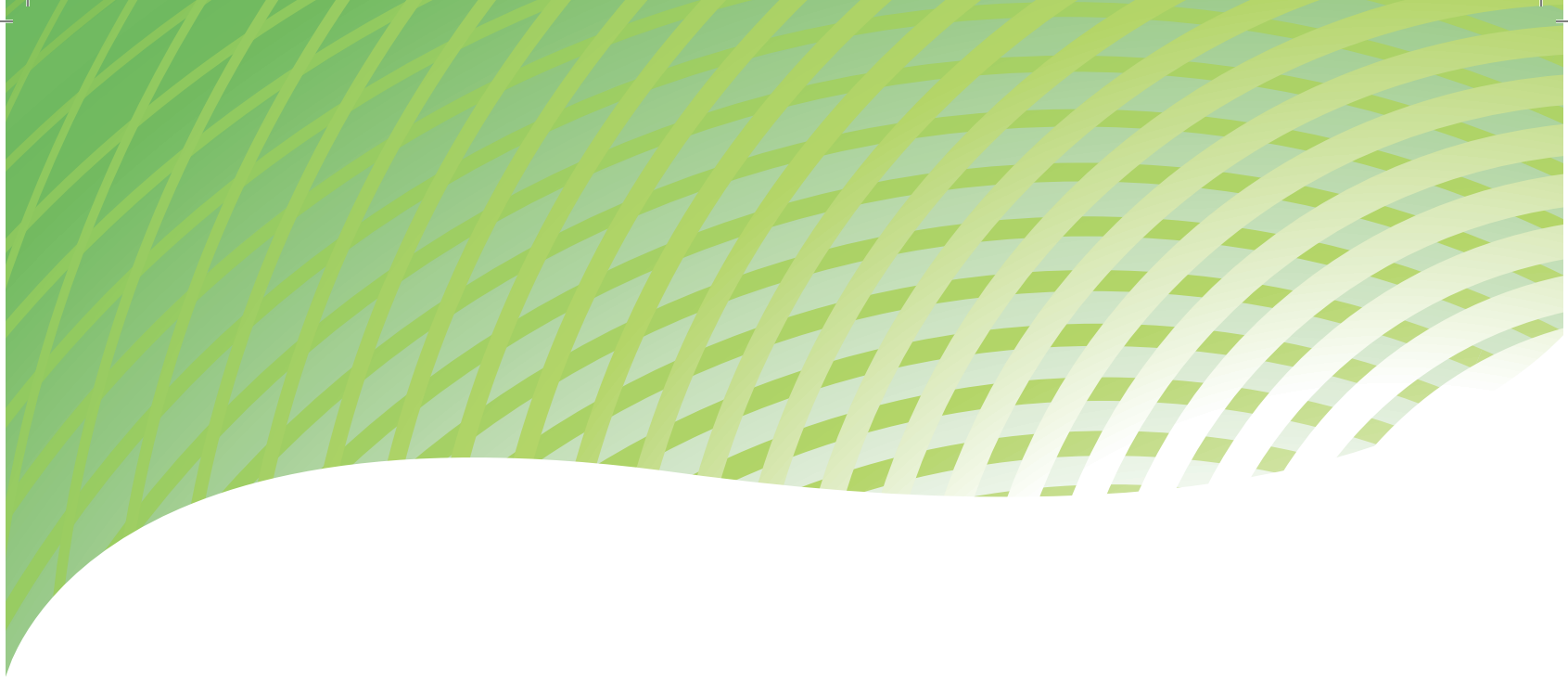
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