USAID
FROM THE AMERICAN PEOPLE

Technical Brief 10

SOCIAL AND BEHAVIOR CHANGE FOR WATER SECURITY, SANITATION, AND HYGIENE

USAID Water and Development
TECHNICAL SERIES

INTRODUCTION

This technical brief provides guidance on developing effective, evidence-based social and behavior change programming to achieve water security, sanitation, and hygiene development objectives. It lays out the process for developing Social and Behavior Change (SBC) programs in support of water, sanitation, and hygiene (WASH) and water resources management (WRM) objectives and provides examples of country implementation and key considerations applicable to both WASH and WRM.

KEY TAKEAWAYS

- Behavior change interventions can contribute to the success of all development results within USAID's Water and Development Plan and should not be limited to hygiene behaviors.
- Communication-only approaches do not result in sustained behavior change within the WASH sector. SBC programs for WASH and WRM need holistic approaches that include a suite of activities, including structural and communication interventions, to increase the likelihood of sustained change.
- Effective behavior change programming requires a systematic process that includes in-depth analysis, detailed planning, and sufficient and appropriate human and financial resources.

July 2021

BACKGROUND

Within the WASH sector, it is well known that up to 30 percent of water points are nonfunctional at any time within Africa;[1] communities that have been declared free of open defecation often revert back to open defecation; and without funding or attention to maintenance, repair, or replacement, new latrines and handwashing stations are often used only until they break down. In addition, in the face of climate change and increased water stress, unsustainable water abstraction has created 'day zero' scenarios in Cape Town and Chennai that risk becoming the new normal without significant changes to reduce the consumption of water as well as the allocation and management of water resources. While human behavior is fundamental to the success of all development programs, the WASH and WRM sectors have historically prioritized finding technical solutions over the exploration of the behavioral solutions that can contribute to the long-term sustainability of programs. In contrast, the success of Community Led Total Sanitation (CLTS) in certain contexts illustrates that a focus on behavior is as important as the technical and infrastructure choices in achieving program objectives.[2] However, CLTS has its limitations and needs to be combined with complementary approaches to ensure sustained change.

Before diving into the process for designing and implementing SBC programs, it is helpful to understand the evolution of behavior change approaches more broadly. Initial efforts to change behaviors related to health assumed that raising awareness of the potential benefits was sufficient for change, commonly referred to as the *Information, Education, and Communication (IEC)* approach. However, evidence from many sectors has shown that health promotion alone does not result in sustained behavior change.[3] This finding was reinforced in the series of ex-post evaluations of USAID WASH projects.[4]

Recognizing the limits of the IEC approach, behavior change research and programs began to move beyond a focus on increasing knowledge and awareness, to addressing beliefs, attitudes, and other individual factors. This approach is known as *Behavior Change Communication (BCC)*. However, the BCC approach focuses on the individual level and underestimates the social or gender norms that can prevent change. In response, the BCC approach was modified to include a more holistic view of all factors affecting individual and group behavior, and thus *Social and Behavior Change Communication (SBCC)* emerged. The focus of SBCC is the use of communication and persuasion as the main vehicle for triggering change.

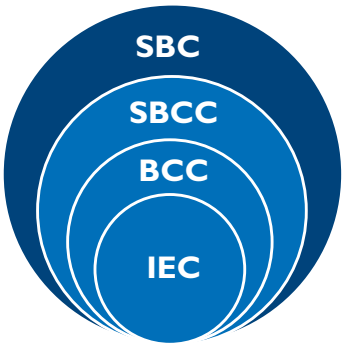

FIGURE 1: BROADENING THE BEHAVIOR CHANGE APPROACH

Although SBCC is still widely used, recent research on behavioral economics and habit formation has highlighted the need for interventions that address the environmental (i.e., physical or structural) barriers to support correct, consistent use of the desired behaviors. For example, households cannot empty their overflowing septic tanks without sufficient access to desludging services. Thus, communication-only approaches (IEC, BCC, and SBCC) **should not** be used in USAID's WASH and WRM programming.

USAID recommends using SBC, which is the most expansive approach to behavior change (see Figure 1). SBC interventions aim to affect key behaviors and social norms by addressing their individual, social, and structural determinants (factors). SBC is grounded in several disciplines including systems thinking, strategic communication,

[1] Banks, B. and S. Furey (2016) "What's Working, Where, and for How Long: A 2016 Water Point Update." Poster session presented at the 7th Rural Water Supply Network Forum, Abidjan, Côte d'Ivoire.
[2] USAID (2018) An Examination of CLTS's Contributions toward Universal Sanitation. Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability Project. Washington, DC
[3] Stott, N. C. H., Kinnersley, P. and Rollnick, S. (1994) The Limits to Health Promotion. BMJ; 309.
[4] USAID (2020) What Does It Take to Sustain Water, Sanitation, and Hygiene Outcomes? Lessons from Six Ex-Post Evaluations.

marketing, psychology, anthropology, and behavioral economics. Within the WASH sector, several studies have shown that environmental interventions such as use of visual nudges (e.g., a mirror above the handwashing sink or stenciled footprints going from the toilet to the handwashing sink) alone can trigger behavior change, particularly for handwashing.[5,6] It is important to note that while SBC is a critical and often overlooked component of WASH and WRM programming, it is still only one in a suite of interventions that support the sustainability of outcomes. Comprehensive WASH and WRM programs will also need to address governance and access to financing, supply chain strengthening, and improved area-wide service provision as detailed in other USAID technical briefs.

PUTTING SBC INTO PRACTICE

Strategic and effective behavior change programming, like engineering, requires a systematic process in the design, implementation, and monitoring of the intervention(s). While there are a variety of process models that can be used for program design, they all include roughly the same steps.[7,8,9] This brief will follow a slightly modified process model that includes four stages, as illustrated in Figure 2.[10] Stage one is when behaviors that contribute to the overall program outcome are clearly defined and the primary target audience is identified. This is followed by a second, exploratory stage where existing and new data are analyzed to generate a deep understanding of the behaviors themselves, the behavioral determinants that influence these behaviors, and secondary audiences such as key influencers and community structures that can block or facilitate change.

Based on findings from stage two, the third stage entails building and testing interventions, including pre-testing or piloting with communities and target audiences before rollout. The final stage includes learning and adapting based on analysis of monitoring and evaluation data to identify areas for improvement. Although Figure 2 shows a stepwise order, this may not always be the case. In some instances, identification of the target behaviors and audiences, a step within the Define stage, may not be possible until further research is conducted as part of the Understand stage. In addition, the feedback loop of Learning and Adapting is integrated throughout every stage, not only in stage four.

Successful completion of the entire SBC process often involves a variety of stakeholders, including government, donors, community members, implementers, and technical experts with skills ranging from research and behavioral economics to marketing and media management. The following sections of this document describe each of these stages in more detail and provide considerations for each stage.

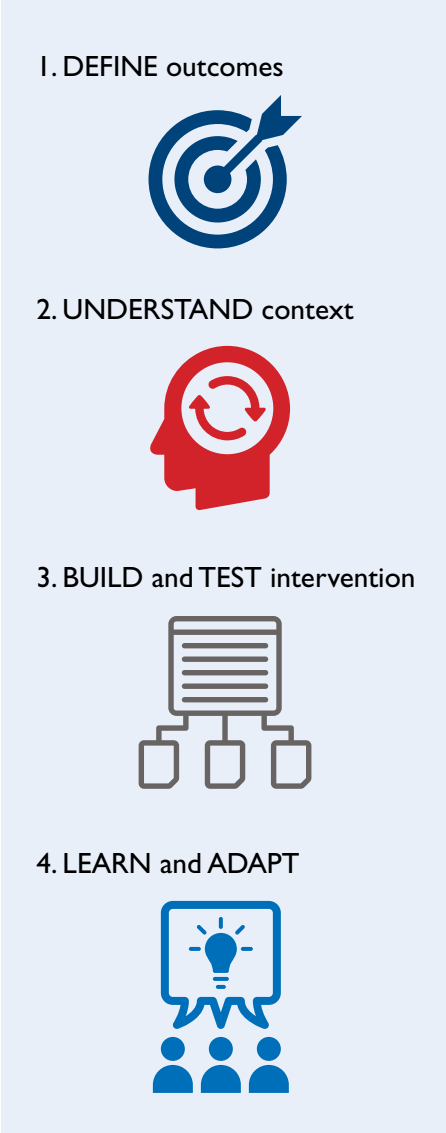

FIGURE 2: SBC PROGRAM PROCESS

[5] Dreibelbis, R. et al. (2016) Behavior Change without Behavior Change Communication: Nudging Handwashing among Primary School Students in Bangladesh. International Journal of Environmental Research and Public Health. 13(1): 129. .
[6] ID Insight (2020) Encouraging Handwashing In Schools Through Behavioral Nudges. Policy Brief.
[7] Health Communication Capacity Collaborative (2013) The P Process: Five Steps to Strategic Communication. Baltimore: Johns Hopkins Bloomberg School of Public Health Center for Communication Programs.
[8] Aunger, R. et al. (2017) Behavior Centered Design: A Practitioners Manual. London School of Hygiene and Tropical Medicine.
[9] USAID and Breakthrough ACTION (2020) SBC Flow Chart Introduction.
[10] Service, O. et al. (2012) EAST: Four simple ways to apply behavioural insights. The Behavioral Insights Team UK.

DEFINE
the outcome

STAGE ONE – DEFINING THE OUTCOME (BEHAVIOR AND TARGET AUDIENCE)

The primary outcome of the first stage is a clear definition of the behaviors that contribute to the overall objectives of the program, as well as the target audiences for each behavior. The first step in this stage is to identify and prioritize the key behavior(s).

Desired behaviors: The objective of stage one is to identify which behavior(s) need to be improved and by whom. This process begins with examining the program goals and objectives and identifying a complete list of behaviors that can contribute to achieving the goals. In many cases, there may be a range of desired behaviors that could contribute to project goals; however, having a small list of priority behaviors allows for a more focused and effective SBC intervention. The selection of priority behaviors is especially important within multi-sectoral, integrated projects where there may be many behaviors that could contribute to the desired project outcomes. Table 1 includes an illustrative list of key behaviors that could be addressed with WASH and WRM programs.

TABLE 1: ILLUSTRATIVE BEHAVIORS TO TARGET FOR WASH AND WRM PROGRAMS

HYGIENE	SANITATION	WATER	WRM
• Handwashing with soap at critical times • Menstrual hygiene management (MHM–hygienic and timely changing of absorbent materials, safe cleaning, and proper disposal of menstrual supplies)[11] • Separation of animal feces from humans (especially children) in domestic environments • Safe food hygiene (safe preparation, cooking, storage, and reheating of food) • Safe household water management (protecting water from contamination during transport, storage, and handling)	• Latrine purchase, installation, repair, or upgrade • Consistent latrine cleaning, maintenance, and pit emptying • Payment for sanitation services for latrine construction, repair and regular desludging and for sewerage, tipping fees, etc. • Safe disposal of children's feces	• Connecting to piped water supply • Reporting of leaks and/or illegal connections • On-time payment for water services	• Reducing water use, reusing water and adopting rainwater catchment or more efficient water use technologies to increase water conservation • Planting native species, managing grazing, controlling invasive species, or reducing use of fertilizer for improved water source protection

[11] The terms MHM and Menstrual Health and Hygiene (MHH) are often used interchangeably. The term MHM is used here to focus on the behaviors to be addressed within the SBC component within a WASH program or part of a larger, standalone MHH program. The term MHH encompasses both MHM and the broader systemic factors, including accurate and timely knowledge, available, safe, and affordable materials, informed and accessible professionals, referral and access to health services, sanitation and washing facilities, positive social norms, safe and hygienic disposal, and advocacy and policy, as detailed in UNICEF (2019) Guidance on Menstrual Health and Hygiene.

SBC MAY NOT ALWAYS BE THE BEST SOLUTION

Household water management has been an especially difficult behavior to change because, among other reasons, it requires that multiple actions be carried out correctly and consistently by household members during the collection, transport, storage, treatment, and handling of water (in order to prevent contamination). The complexity of these behaviors and the intense interpersonal communication efforts that may be required should be seriously considered in deciding whether or not to address this behavior.[12] USAID recommends directing efforts towards increasing access to safe drinking water, piped to households, over SBC efforts to improve household water treatment practices, as detailed in the WASH and its Links to Nutrition Technical Brief.

Target audiences: Once the desired behaviors have been clearly defined, then the target audiences, both primary and secondary groups, can be identified. Hygiene programs have historically targeted family members, including caregivers of children under five or primary school learners while heads of households or key influencers such as spouses have been the main audiences for sanitation programs. SBC for WRM behaviors often target households or entire communities within a water basin. While these audiences will still be a key focus for future WASH and WRM SBC interventions, there is a need to look beyond changing household behaviors to changing systems and behaviors within government institutions and among service providers. For example, in Indonesia, service providers in the water sector were chosen as an appropriate audience for behavior change interventions aimed at improving customer service.

USING SBC TO IMPROVE CUSTOMER SERVICE AMONG WATER SERVICE PROVIDERS IN INDONESIA

The Indonesia Urban WASH (IUWASH Plus) activity aims to improve the performance of Indonesian water service providers by enhancing aspects of their business operations including financial viability, improving human resources and enhancing customer service, etc. Within the customer service component, IUWASH Plus is working to improve customer service behaviors among Public Service and Information Center personnel from both water utilities and wastewater management providers. Training aims to shift attitudes towards a more client-centered approach, resulting in service providers committing to "service excellence" in each of their operational aspects.

In addition, a Citizens Engagement Mechanism was established whereby customers could directly contact personnel at the service providers to address their concerns and questions. This provided a direct feedback mechanism to motivate them to improve and maintain their performance. Following the training, ongoing mentoring is provided for the staff to monitor uptake of the information conveyed in the training and assistance in troubleshooting.

[12] Pickering, A.J. et al. (2019) The WASH Benefits and SHINE trials: interpretation of WASH intervention effects on linear growth and diarrhoea. Lancet Global Health. 7: e1139-e1146.

CONSIDERATIONS FOR STAGE ONE

The selection of the priority behavior(s) is an important but often difficult task. Ideally, these should be behaviors that will contribute to the impact desired. However, in addition to the above, the following questions may also be useful to consider:

- **Behavior Prevalence:** What percentage of the population is practicing the behavior? Is it a familiar practice such as handwashing with soap or a new behavior such as separation of animal feces from the domestic environment to reduce exposure?
- **Behavior Gap:** Based on the above, how much change is needed for, as an example, 60 percent of the population to practice the behavior?
- **Potential Ability to Practice:** What is the likelihood that the population will be able to practice the behavior, given their physical ability, available resources, time, interest, and social support? Consult existing research and confirm with formative research.
- **Degree of an Enabling Environment:** Is there a supporting enabling environment for the behavior (e.g., supportive and gender-sensitive policies, accessibility to water or latrines, or availability of affordable products in the market)?
- **Complementarity with Other Behaviors:** Does the WASH or WRM behavior complement other behaviors promoted in the program (e.g., safe food preparation within a nutrition program)?

For learning and adaptation, it is critical that all programs, but particularly integrated programs, document the process and rationale for selecting the priority behaviors.

STAGE TWO – UNDERSTANDING THE CONTEXT

The primary outcome of the second stage is an understanding of the context in which the current behavior(s) occur, and an analysis of the behavioral determinants or factors that influence the performance or non-performance of the targeted behavior(s). The first step in this stage is determining what is already known about each behavior. This typically includes a desk review of secondary data, identification of what additional information is required and, if needed, formative research.

Data collection and analysis: Generally, two categories of data are needed. The first type, often referred to as descriptive data, answers the question "What are people doing?" This typically includes access rates for water, toilet/latrine coverage, and presence of handwashing stations.[13] National and some subnational-level data on access can be found on the Joint Monitoring Programme website or in information provided by national bureaus of statistics in partner countries. Descriptive data also can also include self-reported data such as the percentage of caretakers who report disposing of their child's feces in a latrine, which can be found in national surveys such as the Demographic and Health Surveys. At the subnational level, project-level baseline data and end-line surveys also include descriptive data. This data may be more relevant since the larger surveys and national-level data can obscure variability in access that may be important for the context of the proposed intervention.

The second type of data relates to the behavioral determinants (attitudes, beliefs, competing priorities, or social or gender norms, etc.) that affect an individual's opportunity, ability, or motivation to engage in the identified behaviors. This type of data answers the question "Why are people practicing these behaviors (or

[13] The presence of a handwashing station is a proxy indicator of whether handwashing with soap can occur but does not serve as an indicator of actual handwashing behavior.

not)?" This type of data is often insufficient, superficial, or absent, particularly for less commonly researched behaviors such as food hygiene or disposal of child's feces, and for behaviors that contribute to WRM outcomes.

Formative research: When data is absent or insufficient, formative research is needed. Formative research is the collection of data used to inform the development of program interventions. Both quantitative and qualitative methods such as surveys, group discussions, in-depth interviews, observations, and behavioral trials can be used. Other research methods used in marketing and human-centered design can also be incorporated. Journey mapping, for example, is an interview method that results in a detailed visualization of the process and challenges (sometimes called pain points) a customer faces, such as finding the parts and materials required to construct a latrine, or in applying for credit. Another engaging method is to develop a persona where a fictitious character is created by participants and is then used to discuss barriers and motivators for private behaviors such as menstruation that otherwise would be difficult to elicit from individuals or a group. Selection of the research methodologies should be accessible to persons with disabilities and assessed for potential risks to persons with disability as well as women and girls or vulnerable groups.

Behavior change frameworks: Beginning in stage two and throughout the remainder of the SBC program process, the use of a (conceptual) behavior change framework is best practice. Behavior change frameworks provide a structure for in-depth analysis of the individual behavioral determinants as well as the interactions between these determinants. Within this stage, results from existing behavioral studies can be analyzed through the lens of the framework. This includes, firstly, organizing findings according to the pillars of the framework, examining the relationship between the behavioral determinants, and selecting key determinants to be explored in the formative research studies.

There are a variety of conceptual frameworks or models that can be used depending on program needs and the behavior(s) of interest. One useful model is the Switch Framework, which provides a quick and approachable way of examining behavior. It organizes behavioral determinants into three broad categories:

- ***Elephant*** – Factors that affect an individual's motivation to carry out a behavior, such as beliefs, attitudes, willingness to pay, etc.;
- ***Rider*** – Factors that affect an individual's ability to carry out the behavior, such as knowledge and skills; and
- ***Path*** – External factors, such as access, social norms, and product features

In order for behavior change to occur, the Elephant must be motivated to change, the Rider must know how to arrive at the change, and the Path must be clear to facilitate the change–all three are required. As an example, table 2 shows the Switch Framework with key behavioral determinants applicable to WASH and WRM behaviors and mapped under each heading.

TABLE 2: SWITCH FRAMEWORK

ELEPHANT	RIDER	PATH
• Beliefs/attitudes • Values • Emotional/physical/social drivers • Willingness to pay • Competing priorities • Intentions	• Knowledge • Self-efficacy • Affordability • Social support • Roles and decisions	• Access/availability • Product attributes • Social norms • Sanctions • Habits

[14] Downs, J. (2020) Guide to creating user personas.
[15] Heath, C. and D. Heath. (2010) Switch: How to Change Things When Change Is Hard. Broadway Books.

In addition to the Switch Framework, there are a variety of other behavior change frameworks that can be used. WASH specific frameworks include SaniFOAM, RANAS, IBM-WASH, Behavior Centred Design, FOAM, and WASH'Em. Other commonly used frameworks include the Social-Ecological Model and COM-B. The Handwashing Handbook has a useful summary of the above frameworks.[16, 17]

FORMATIVE RESEARCH FINDINGS ON LATRINE ADOPTION FROM MOZAMBIQUE

In 2020, USAID/Mozambique commissioned a formative research study on sanitation and hygiene behaviors, using a gender lens, with the purpose of gathering evidence to develop future SBC programs in Mozambique. The key barriers per the Switch Framework are highlighted below:

Elephant

- **Physical and social drivers:** Safety, convenience, and privacy are key drivers for latrine adoption, particularly for women.

Rider

- **Knowledge:** While there is high awareness of the benefits of owning a latrine, knowledge of the costs and process of constructing a latrine with a concrete slab is low.
- **Roles and decisions:** Men are the ultimate decision-makers and builders of latrines. Women's roles included cutting grasses for the superstructure, removing sand from the pit, and preparing food for those involved in constructing latrines.

Path

- **Social norms:** In communities exposed to prior WASH interventions, the norm is for families to have and use (simple) latrines. Open defecation is perceived to be shameful, especially for women.
- **Sanctions:** In some communities, pressure to build latrines is so high that families who resist building latrines may be expelled from the community.
- **Affordability:** Given the simple structure of latrines, locally available materials were used, thus, affordability was not a barrier for simple latrines.

CONSIDERATIONS FOR STAGE TWO

When localized, secondary data are not available for a behavior, search for studies in similar geographic locations or neighboring countries. Global syntheses of factors that affect latrine adoption,[18] handwashing,[19] and MHM[20, 21] and water conservation exist[22] and may be useful in gaining a foundational understanding of each behavior.

---

[16] Global Handwashing Partnership (2020) The Handwashing Handbook.

[17] Most of the above conceptual models focus on conscious, rational decision-making. However, the ever-growing field of behavioral economics focuses on factors that influence behavior at the non-rational, subconscious level. These include the use of heuristics or mental shortcuts that allow people to make quick judgments and solve problems quickly. More information can be found at The Behavioral Economics Guide (2015).

[18] O'Connell, K. (2014) What Influences Open Defecation and Latrine Ownership in Rural Households?: Findings from a Global Review. Water and Sanitation Program. World Bank.

[19] Global Handwashing Partnership (2020) The Handwashing Handbook.

[20] Chandra-Mouli, V. and Patel, S.V. (2020) Mapping the Knowledge and Understanding of Menarche, Menstrual Hygiene and Menstrual Health Among Adolescent Girls in Low- and Middle-Income Countries. In: Bobel C., Winkler I.T., Fahs B., Hasson K.A., Kissling E.A., Roberts TA. (eds) The Palgrave Handbook of Critical Menstruation Studies. Palgrave Macmillan, Singapore.

[21] Wilbur, J. et al. (2019) Systematic review of menstrual hygiene management requirements, its barriers and strategies for disabled people. PLoS ONE 14 (2): e0210974.

[22] Addo, I.B., Thomas, M.C., and Parsons, M. (2018) Household Water Use and Conservation Behavior: A Meta-Analysis. Water Resources Research, 54, 8381–8400.

Formative research does not have to be extensive and time-consuming. The key to useful, rapid research is to keep the scope narrow and questions focused. It is better to gain deep insights on fewer behaviors, sometimes only one behavior, than to have a lot of shallow data that is not sufficient to guide programming. When selecting the mix of research methods for formative research, the first consideration should be which behaviors are being studied, and what are the characteristics of the behavior(s) that might affect how research participants might respond? Is the behavior a private behavior that would be hard to discuss openly like MHM, or is it a desirable behavior like handwashing that would make people want to overreport their practice? For either of these behaviors, conducting a group discussion is not likely to be useful, and other research methods should be considered. Other considerations include whether it is a new behavior such as safe disposal of child's feces, or a new product such as water-saving technology that participants would have to try and interact with before providing feedback. For these behaviors, household observations and behavioral trials might be good methods to explore user insights. Tools such as WASH'Em can be readily adapted to explore determinants for handwashing behavior, even in non-emergency settings.

The role of social and gender norms are critical for all behaviors. Researching and shifting norms requires going beyond discovering what individuals believe others are doing (descriptive norms) to understanding what individuals believe others expect them to do, including the sanctions or punishments if they do not comply with those norms (injunctive norms). In cases where social or gender norms have been highlighted as a critical barrier to change, additional tools to further unpack social norms may be helpful, including the Integrating Social Norms into Social and Behavior Change Programs resource.[23]

BUILD
the intervention

STAGE THREE – BUILDING AND TESTING THE INTERVENTION

The key outcome of the third stage is a tested suite of interventions that address the key factors identified in stage two. Stage three is the most familiar stage of the SBC development process for practitioners when activities, channels, and messages are created. However, before jumping to the interventions, there is an important intermediate step whereby the behavioral determinants identified in stage two must be considered and prioritized. Although a variety of factors may be critical for behavior change to take place, not all factors can or should be addressed through SBC activities. For instance, a SBC intervention alone would not be effective in resolving insufficient access to supplies such as water or to a lack of fecal sludge management services. Developing a theory of change for the behavior change intervention will help fine-tune the focus of the design so that the SBC intervention addresses the priority determinants in a holistic manner. This should not be confused with the project-wide theory of change, which will be developed much earlier in the project.

Theory of change: Findings from the formative research can be overwhelming given that many barriers may seem relevant but the solutions to address them can be very different. This is when a facilitated process where key stakeholders and researchers collectively select the most salient determinants to address in a program is helpful. As an illustrative example, **access**, **skills**, **roles,** and **beliefs** were chosen as the most salient determinants for safe disposal of a child's feces. These determinants are then incorporated into a theory of change as follows:

- If access to affordable potties is improved, if households have the skills to potty train their child, if *all* household members feel responsible for disposing of the child's feces, and if household members *believe* that children's feces is contaminated, then more households will consistently and safely dispose of their children's feces.

[23] The Learning Collaborative and Breakthrough Action (2021) Getting Practical: Integrating Social Norms into Social and Behavior Change Programs.

Intervention mix: With a clear theory of change, program designers can now focus on developing interventions that address those behavioral determinants. In developing the intervention mix, the design principles laid out in the **EAST** framework[24, 25] may be helpful. The first principle is to make behaviors **Easy** by using defaults (putting the most desired option as the first choice on a menu, linking up banking information for automatic payments, etc.), making it more convenient for people to practice a behavior. The second principle is to make behaviors **Attractive** by drawing more attention to it through images, color, or personalization and the inclusion of both rewards and sanctions, such as through lotteries, competitions, or by focusing on the scarcity of the product. The third principle is to make the behavior **Social** by showing that others also perform the desired behavior, perhaps through the use of social networks, and encouraging people to make public commitments to change. The final principle is to make the behavior **Timely** by encouraging change during life events when people are more open to new habits (after a new marriage, delivery of a baby, relocating to a new home, or during emergency situations) and helping people to develop action plans that address the barriers to change.

For example, the theory of change above for child feces disposal indicates a need to design a household-level intervention to address individual and household skills, attitudes, and beliefs about child feces, perhaps through interpersonal communication, social media, mass media, or all three. The lack of access indicates a need to expand the availability, and perhaps affordability, of child potties to facilitate the enabling environment and to serve as a cue for the behavior. Some examples of supply-side interventions could include sales events to familiarize families with the range of products available, promotional campaigns, and targeted financial incentives (discounts, vouchers, or direct subsidies) to address affordability.

AVERTING DAY ZERO

In Cape Town, South Africa, consecutive years of dry winters resulted in one of the most severe water shortages in the city's history at the end of 2017. Without drastic measures, the city would have reached "Day Zero," when the water supply to most of the city would have been turned off. Although the city had increased water tariffs and installed water management devices to restrict the flow of water to households, these interventions alone were not sufficient. Beginning in 2018, the city launched a multi-faceted behavior change initiative aimed at reducing water usage by addressing individual and collective behavior. It focused on a clear behavioral outcome—individual consumption of less than 50 liters of water per day (later reduced to 13 liters per day). To illustrate concretely how little water was required for daily activities, a communication campaign that included posters, social media content, and other resources, was implemented. For example, a variety of catchy two-minute songs promoted shorter showers. The city also addressed social norms by creating a public water map showing which households were saving water. This provided positive public recognition of these households while highlighting that change was happening among neighbors and peers. These efforts, among many others, helped the city to avert Day Zero and provide a good example of how collective behavior change can improve WRM outcomes.[26]

[24] SaniFOAM and other conceptual frameworks referenced in previous sections are used for the analysis of behavioral determinants (stage one and two) whereas the EAST framework provides guidance on effective tactics for changing behavior.
[25] Service, O. et al. (2012) EAST Four simple ways to apply behavioural insights. The Behavioral Insight Team UK.
[26] Martinus, A., and F. Naru (2020) How Cape Town Used Behavioral Science to Beat Its Water Crisis. Behavioral Scientist.

Habit formation: Thus far, this brief has focused primarily on analyzing the conscious, deliberate factors that affect behavior change such as attitudes, social support, emotional drivers, etc.. Addressing these determinants may be sufficient for many WASH and WRM behaviors, particularly one-time behaviors such as connecting to piped water. However, repetitious behaviors such as handwashing with soap, consistent latrine use, water conservation, and other actions that contribute to safe food hygiene require additional approaches that transition rational, goal-oriented behaviors into habitual behaviors that are performed automatically without much thought.

There are principles of habit formation that can be applied in developing interventions. A select few are highlighted here, with more detailed information in the resources section below. Key principles include ensuring a stable, supporting environment where materials are immediately and consistently available; leveraging contexts to identify times when people are most open to behavior change; increasing friction (make it harder) for undesired behaviors or reducing friction (make it easier) for existing behaviors; fostering trial and practice such as encouraging handwashing or use of latrines in public settings; and highlight descriptive and "localized" norms that frame the behavior at the group level rather than individuals.

Testing: After the intervention ideas are designed, they need to be tested and refined before rollout. For example, testing nudges or cues to validate that they work, testing several implementation ideas against each other to see which one is more effective, or identifying operational challenges (paint quickly fades off footpaths, cues are overlooked or misunderstood by audiences, etc.) to the selected intervention. This is also an opportunity to ensure that interventions are also accessible to persons with disabilities.

If the intervention includes communication materials, these need to be pretested for comprehension, attractiveness, and social acceptability, including testing to ensure that messages and images are gender and age appropriate.

CONSIDERATIONS FOR STAGE THREE

As illustrated above, many of the behaviors addressed in WASH and WRM programs cannot be changed solely through communication aimed at addressing behavioral determinants under the Rider and the Elephant. Structural barriers are often overlooked factors that also need to be addressed. For habitual behaviors, addressing the environment is of utmost importance.

If communication activities are chosen as one part of the intervention mix, consider the audience reach, accessibility, credibility, and persuasiveness of each of the channels. While mass media may have the greatest overall reach, it may not be accessible to those in rural or remote areas or those with disabilities; social media may not be viewed as credible but is often influential; and choosing the right person to credibly deliver messages is also important. In addition, the setting in which communication activities take place should not be overlooked. When discussing sensitive topics, having men in the room, or using a space without sufficient privacy can be counterproductive or even detrimental to participants.

Throughout the SBC development process, communities should also be considered a key partner in co-creating solutions that are localized, truly inclusive, and more likely to be sustained after the project ceases. Community consultations should include different members of communities, including women and girls, and persons with disabilities to ensure that activities and messages are appropriate and inclusive. Participants at different ages and stages in their life will have differing needs and preferences that must be considered.

Many WASH and health programs target female caregivers as their primary audience. Without careful consideration of the gender and social inclusion elements, SBC programs may inadvertently reinforce gender stereotypes that associate caregiving with women and girls. For example, SBC programs that link the desired behaviors to the idea of 'good motherhood' or 'ideal mothers' may be interpreted as mothers cannot be 'good' or 'good enough' until they are cleaner or practice improved behaviors. Behavior change programs should identify ways to promote the role of boys and men in adopting and modeling desired hygiene behaviors.

The SBC development process can also be designed to serve as a platform to forge partnerships, garner support for evidence-based SBC programming, and build capacity among behavior change practitioners within government and the larger WASH and WRM subsectors, particularly during the research, testing, and refinement stages.

LEARN and ADAPT

STAGE FOUR – LEARNING AND ADAPTING

MEASURING PROGRESS

The final stage is focused on learning and adapting with the goal of establishing and using a monitoring and evaluation system that captures program progress, results, and impact; collects data that is useful for program adaptation; and contributes to global knowledge on behavior change for the WASH and WRM sub-sectors. Within USAID's Water and Development standard indicators, there are two direct measurements of SBC efforts: HL.8.2-5, Percentage of households with soap and water at a handwashing station on premises and HL.8.2-6, Percentage of households in target areas practicing correct use of recommended household water treatment. In addition to the above indicators, SBC also contributes to the successful achievement of HL.8.2-1 Number of communities certified as open defecation free (ODF) as a result of USG assistance; HL. 8.2-2 Number of people gaining access to a basic sanitation service as a result of USG assistance; and HL. 8.5-1, Number of people benefiting from the adoption and implementation of measures to improve water resources management as a result of USG assistance. Refer to USAID's Water and Development Indicator Handbook[27] for more details.

Depending on the program and selected behaviors, custom indicators could also include:

- Percent of women/girls who were able to wash and/or change their menstrual materials when they wanted to while at (home/school/elsewhere)
- Number of people (sex disaggregated) who report disposing their child's feces into a latrine
- Number of people (sex disaggregated) who report adopting at least one water saving practice through exposure to USG-supported events, communications materials, and products.

There are also a variety of indicators to measure progress and communicate program impact. A project monitoring system should routinely collect data at three levels: output, intermediate outcome, and behavioral outcomes. An illustrative example of this is shown below in Table 3, using correct and consistent adoption of the behavior, "safe disposal of child's feces."

[27] USAID (2020) Water and Development Indicator Handbook.

TABLE 3: ILLUSTRATIVE INDICATORS FOR AN SBC PROGRAM PROMOTING SAFE DISPOSAL OF CHILD'S FECES

OUTPUT	INTERMEDIATE OUTCOME	BEHAVIORAL OUTCOME
• # or % of household members who attended community events • # or % of household members who attended sales events • # or % of vendors/shops that carry child potties	• % of household members who believe that child's feces is contaminated • % of caregivers who felt potties were affordable • % of caregivers who reported receiving help from family to dispose of child's feces	• % increase of caregivers who report safely disposing of child's feces. • % increase of household members who report safely disposing of child's feces

CONSIDERATIONS FOR STAGE FOUR

Determining what to measure, how often, and what indicators are best suited can be difficult. It is important to consider data collection methods and associated resource implications when developing indicators. For example, directly measuring behaviors can be difficult, and usually requires household surveys. While SBC monitoring and evaluation plans often measure output and behavioral outcome, it is also of critical importance to also measure the intermediate outcomes to understand the program's effect on addressing behavioral determinants. Without these measurements, it will be impossible to know if the program did not work because the wrong determinant was selected or if the activity itself did not work.

Monitoring should also be tied to learning and adaptation, so the selected indicators should be those that can provide timely, actionable information to implementers. It is important to build in opportunities to reflect on output and intermediate outcomes in order to adapt approaches if they are not working.

CONCLUSION

Addressing SBC is critical to achieving sustainable WASH services and WRM and should not be limited to programs working to change hygiene behaviors. Within the four-stage process described above, a variety of tasks must be completed, all of which take time and effort. Governments, funders, and implementing partners should begin thinking about the behavior change component as soon as the project begins, to allow time for recruitment of the right skills among long-term staff and short-term technical experts. Throughout the SBC process, there are ample opportunities to build in co-creation sessions with stakeholders including during the identification of target audiences, formulation of research questions, development of the theory of change for SBC activities, as well as Pause and Reflect workshops for learning and adapting. Allowing for sufficient time is particularly important when tackling new behaviors and when addressing non-traditional audiences such as water and sanitation service providers or government institutions.

SELECTED RESOURCES

Michie, S. et al. (2014) The Behaviour Change Wheel: A Guide to Designing Interventions. Silverback Publishing.

Neal, D. et al. (2015) The Science of Habit: Creating Disruptive and Sticky Behavior Change in Handwashing Behavior. USAID WASHPlus.

Service, O. et al. (2012) EAST Four simple ways to apply behavioural insights. The Behavioral Insight Team UK.