



FINAL REPORT

Sanitation in Complex Operational Environments

JULY 2019



This document compiles the insights and learnings from the HEAR, CREATE and DELIVER phases of research on sanitation systems in the haor and char regions of Bangladesh. The research has been done as a component of TOPS-WASH through the SHOUHARDO III project.

July 2019

DISCLAIMER

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CONTRACT MILESTONE 4

This report covers the completion of Milestone 4 from the SCORE contract:

- *Install test-ready prototypes in collaboration with PRO-WASH and SHOUHARDO III team;*
- *Conduct wrap-up workshop*
- *Create PRO-WASH approved implementation strategy, monitoring framework, installation guidelines, behavior change and promotional strategy, and stakeholder engagement strategy documents.*

Executive Summary

This design challenge, **Sanitation in Complex Operational Environments (SCORE)**, was initiated as part of RFA TOPS-WASH and funded by USAID's Food for Peace (FFP) program. The objective of this RFA was to solicit design and implementation proposals from research partners to tackle key sanitation challenges in the SHOUHARDO III DFSA (Development Food Security Activity) implementation area. Despite Bangladesh's notable achievement of effectively ending open air defecation, parts of the country remain plagued by difficult sanitation challenges, including those noted by CARE in the target area:¹ 1) seasonal inundation of char and haor regions; 2) minimal land availability for household latrines; and 3) inability of the poor and extreme poor (FFP's target beneficiaries) to afford existing flood-resistant latrine models.

SHOUHARDO III is a five-year food security activity in Bangladesh. It is led by CARE and implemented in partnership with six national NGOs and the Government of Bangladesh. SHOUHARDO III seeks to improve gender equitable food and nutrition security and resilience of vulnerable people living in four districts of the char and haor regions in Bangladesh by 2020. To improve food security, this program aims to improve utilization of nutritious food by pregnant and lactating women, children under five, and adolescent girls. To achieve this, the program strives to improve access to health and nutrition services, reduce prevalence of water-borne diseases, and change nutrition, health, and WASH behaviors through a targeted Social and Behavioral Change Communication (SBCC) strategy. This design challenge, **Sanitation in Complex Operational Environments (SCORE)**, has identified low-cost, locally available sanitation solutions for the populations living in the haor and char areas of Bangladesh, using a strategy based on the principles of Human Centred Design (HCD).

The research was conducted by iDE, an international NGO with 35 years of history in Bangladesh and award winning sanitation marketing programming. The research followed three phases -- HEAR, CREATE and DELIVER -- in alignment with iDE's HCD research methodology. The HEAR phase included a 'deep dive' (immersive rapid ethnographic research), as summarized in the Milestone 1 Deep Dive Report (see Annex B). The CREATE phase included nine rapid prototype installations and follow up interviews. The DELIVER phase compiled these learnings into a final strategy, as summarized in this report.

After a brief review of the outcomes of the HEAR and CREATE phases, this report presents the strategy identified by the DELIVER phase. This strategy includes four elements: 1) recommended sanitation products, 2) sample behavior change communication concepts, 3) recommend service delivery model, and 4) sample implementation strategy.

As with any blueprint, implementing the recommendations within this document will require further testing, refinement, and adaptive management. Markets are dynamic and static implementation is seldom able to create sustainable and resilient change.

Future Implementation Strategy

The recommended implementation strategy aims for all SHOUHARDO III households to adopt one of the proposed product solutions, by leveraging 1) existing uninstalled components, 2) direct purchase, 3) established government subsidies, or 4) loans and savings.

Targeted implementation will address three broad areas: demand, supply, and support. **Demand** focuses on marketing and behavior change communication to consumers. **Supply** focuses on the market infrastructure. It seeks to strengthen the service delivery model for quality components, installation and maintenance through the development of local service providers, sweepers and regional

¹ WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<https://washdata.org/>)

component dealers. **Support** focuses on mechanisms for subsidy and ensuring quality installations. It seeks to ensure that households are not left behind through the short-term catalytic use of subsidies, and of an “honest broker” staff member who aids in the targeted support of installation services. Support also engages local government and the Department of Public Health and Engineering (DPHE).

When rolling out this approach, iDE recommends initially targeting households who are performing well against key SHOUHARDO III food security indicators for direct purchase marketing campaigns, with special attention to households who already own uninstalled components. Extended efforts will focus on households who require subsidies, microfinance loans, or other special assistance. This approach will help catalyze the functional, resilient and sustainable market infrastructure required to reach the marginalized residents of the haor and char areas.

The proposed solution also incorporates hardware designed to meet the needs of households in flood-prone areas, with software elements incorporated into strategic behavior change and a comprehensive business model. All three aspects aim to promote improved sanitation behaviors, sanitation market expansion, and uptake of the proposed product solutions.

Branding and Behaviour Change Communication

When asked about their experience, households where the team installed new toilets overwhelmingly expressed that they felt their new latrine was SAFE. On the other hand, non-users understand and perceive current unimproved toilets as UNSAFE. We therefore recommend using the brand name “Nirapod.” This combines the Bangla word for safe, “Nirapad,” and the English word “Pod” which means a streamlined enclosure, housing, or detachable container. During tests, this brand resonated well with customers and service delivery actors.

Marketing and behavior change messages should therefore focus on the *safety* of the latrines in comparison to other options. Messaging should also highlight the full service delivery modality, not just components. Photographs/videos of trusted individuals such as NGO workers and doctors are recommended for billboards, TV, and other “above the line” marketing. Line drawings showing easily understandable concepts of safety and individuals who live in similar circumstances to the target audience are recommended for flipcharts and other “below the line” marketing.



Protect your health and safety with the Nirapod.

Sample testing images for the “Nirapod” brand latrine



This new toilet is safe and healthy.

Sanitation Products

iDE recommends a suite of four unique latrine designs, based on findings from the HEAR and CREATE phases. These designs aim to balance affordability with quality. They differ in key ways from iDE's conventional designs. For example, the shelter design has been updated to be wider and taller, with an optional transparent roof panel, and the slab design includes corner cutouts to ensure space for cement pillars. Additionally, we do not recommend any of the ceramic pan or SanBox latrine designs which come with full septic tanks or twin pit systems. This is to keep prices down and be functional in a smaller footprint.

Nirapod latrines include four options. Two are direct pits and two are offset pits. Offset pits are desired by households as they are seen as more permanent and can be closer to the home. All designs include the SaTo pan, which features a tamper-proof waterseal. This significantly reduces smell, the main barrier to installing close-to-home latrines.

Basic: This latrine is a simple low-cost design. It is a simple pit latrine, where the squatting slab sits directly on top of the pit. The pit is lined with three concrete rings. The squatting slab has a trap door latrine pan that keeps away flies and blocks smell. This latrine includes a corrugated iron (tin) shelter with bamboo pillars which is wider than traditional designs.



Basic+: The Basic+ design includes three upgrades on the Basic design. Firstly, concrete pillars are used in the shelter instead of bamboo, with a transparent roof panel for more light. The squatting slab is square, which allows for more space in the latrine. And the pit includes a low-cost onsite Fecal Sludge Management system called FilTo, which increases leaching, decreases the volume of sludge in the tank, performs primary treatment of the sludge in the tank, and promotes safer emptying. This design has four concrete rings, including FilTo, which are sealed together as a tank.

Offset: The Offset design moves the pit from directly underneath the squatting slab, offsetting it by 2-3 feet. The pit remains the same as the Basic+ latrine, including FilTo system. The shelter is the same as the Basic design, with bamboo pillars and corrugated iron.

Offset+: The Offset+ design includes the same squatting slab and pit as the Offset design. However, the shelter can also be attached to the home, which is especially helpful for individuals with disabilities. The shelter is the same as the Basic+ design, with four concrete pillars, corrugated iron, walls and a transparent roof panel.

Sanitation Business Model

Quality latrines require four levels of improvement: technology (how the latrine works to store and treat waste), components (such as pan and shelter types), installation (including how and where), and maintenance (daily upkeep and annual pit emptying). Field findings from the rapid prototyping phase suggest that the biggest missing link in the latrine supply chain in haor and char environments is **installation**. In char areas, the key is to install latrines **raised to the same level as the home**; in haor areas the key is to install latrines **away from the mound edge**. While this seems basic, it is the largest finding of our prototyping and is not something that iDE directly addresses in other projects. To address this, the Nirapod brand will be sold through trained local service providers (LSPs) and supported by honest brokers (HBs). The LSPs and HBs will pay special attention to the proper **installation**. These individuals will also be linked through the program to latrine sweepers, allowing them to support proper **maintenance** of the latrines. Additionally, they will be linked with local government to facilitate subsidy provision.

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List of Acronyms

ATL	Above the Line
BCC	Behavior Change Communication
BTL	Below the Line
CSO	Civil Society Organizations
CLTS	Community Led Total Sanitation
DPHE	Department of Health and Engineering
FF	Field Facilitator
FOAM	Focus - Opportunity - Ability - Motivation -- Behavior Change Approach
HB	Honest Broker
HCD	Human Centred Design
HH	Household
JMP	Joint Monitoring Program - WHO/UNICEF sanitation monitoring unit
LP	Latrine Producer
LSP	Local Service Provider
LGI	Local Government Institution
FiTo	Filtering Toilet - Onsite Sludge Treatment
FSM	Fecal Sludge Management
MSC	Most Significant Change
NGO	Non-Governmental Organizations
RFA	Request for Application
TS	Technical Specialist
WASH	Water, Sanitation and Hygiene
VSLA	Village Savings and Loans Associations

Glossary

Above the Line Marketing	A marketing term meaning the use of media like print, television and radio. Four types of above the line marketing are recommended by this report: product demonstrations in mela (county fairs), billboards, flyers, and local television advertisements.
Below the Line Marketing	A marketing term which means personal or face-to-face marketing approaches. Four types of below the line marketing are recommended by this report: door-to-door sales, courtyard meetings, introduction of technologies to local elite, and demonstration installations.
<u>Co-creation</u>	A participatory approach to designing solutions that involves end-users, market actors, and key stakeholders. This is in contrast to top-down approaches.
<u>Deep Dive</u>	A rapid ethnographic and participatory research approach that uses observation, focus groups, semi-structured interviews, and co-creation (see above). iDE's deep dive approach follows an adapted version of IDEO's deep dive method.
<u>FiTo</u>	An innovative, low-cost, onsite fecal sludge management technology. This technology is suitable for high groundwater and flood prone areas.
<u>FOAM</u>	This behavior change acronym stands for focus, opportunity, ability, and motivation. It has been used in sanitation marketing programs to identify the opportunities and barriers to adoption of latrines.
Food Security Spectrum	Households who are performing well on key SHOUHARDO III indicators relating to food security will fall higher on the spectrum. Households who are performing poorly will fall lower.

Honest Broker	An honest broker serves to fill a key missing element in sanitation market system in challenging context. This report recommends providing a short-term staff member whose objective is to see that all SHOUHARDO households adopt improved latrines by segmenting and prioritizing households in each union, connecting households to subsidy and service provision, and supporting households through the process of purchasing and installing an improved latrine.
<u>Human Centered Design</u>	A participatory action research approach that puts end-users at the center of the design of solutions. Solutions can be products, service delivery models, behavior change strategies, or program strategies.
<u>Improved Latrine</u>	This report uses two definitions of improved. The Joint Monitoring Program (JMP) identifies six levels of possible toilets. The bottom two levels are defined by JMP as unimproved, as they do not properly separate people from fecal sludge. This definition focuses on the latrine technology utilized. This report expands this definition to include quality requirements for components, installation, and maintenance as well as technology.
Standard Food for Peace (FFP) indicators relating to food security	This set of standard indicators includes: <ul style="list-style-type: none"> • Number of individuals who have received USG supported short term agricultural sector productivity or food security training • Value of small-holder incremental sales generated with USG implementation • Number of households benefiting directly from USG assistance under Food for Peace
Latrine Producer / Local Service Provider	Latrine Producers are existing market actors who sell components of latrines to consumers and subsidy programs (civil society and local government). This report recommends re-branding these market actors as Local Service Providers, to extend their role into installation, repairs, and sweeping coordination.
Latrine Siting	The process of finding an appropriate location for a latrine on a household plot.
<u>Market Systems Approach</u>	A model of development which utilizes market systems (including the public and private sectors) to ensure access to products and services for consumers. In this context, the approach refers to creating a more inclusive and quality sanitation market for the ultra-poor SHOUHARDO households.
Mela	County fairs which are common in rural Bangladesh. The fairs have booths, and provide an opportunity to promote innovative ideas.
<u>Most Significant Change</u>	An established participatory assessment methodology used to collect stories of change. Recommended for market systems assessment.
SHOUHARDO III	A five year USAID food security activity in Bangladesh (2015-2020). The program is led by CARE and implemented in partnership with six national NGOs and the Government of Bangladesh.
Smart Subsidy	Subsidies that already exist (no new funding required) and adhere to the following criteria: 1) engage the value chain, 2) use objective criteria to target the poor, 3) require some cost-sharing by the household for stronger ownership; and 4) ensure subsidized latrines meet or exceed the JMP 'improved' standard and are designed to last at least five years.
Sweeping	Sweeping is the term for the emptying of latrines and septic systems in Bangladesh

Introduction

[SHOUHARDO III](#)

SHOUHARDO III is a five-year development food security activity (2015-2020). The program is led by CARE and implemented in partnership with six national NGOs and the Government of Bangladesh. The

goal of SHOUHARDO III is to achieve improved, gender equitable food and nutrition security and resilience of vulnerable people living in four districts of the char and haor regions in Bangladesh, by 2020. The program uses an integrated approach in which activities from multiple sectors are implemented together to address food insecurity, maternal and child malnutrition, and gender inequality; and achieve women and youth empowerment and overall improved food security. The program promotes better governance and disaster resilience, while contributing to overall livelihood enhancement of the targeted households.

To improve overall food security, the SHOUHARDO III program endeavors to improve utilization of nutritious food by pregnant and lactating women, children under five, and adolescent girls. To achieve this, the program aims to improve access to health and nutrition services; reduce prevalence of water-borne diseases; and change nutrition, health, and WASH behaviors, using a targeted Social and Behavioral Change Communication (SBCC) strategy. Despite Bangladesh's notable achievement of effectively ending open air defecation, parts of the country remain plagued by difficult sanitation challenges. such as those noted by CARE in SHOUHARDO III's implementation areas.² The activities presented in this strategy compliment the following eight WASH activities already present in SHOUHARDO III:

1. Capacity building of community health volunteers (CHVs) on basic health, hygiene and nutrition issues;
2. Capacity building of community groups (CGs) and community support groups (CSGs) on their roles and responsibilities in improving community health systems (including WASH systems);
3. Training households on good WASH practices, including separating children from animal feces and hand washing by mothers at critical times;
4. Demonstrations of improved low-cost household latrines;
5. Implementation of arsenic and coliform testing in existing wells;
6. Training for Private Health Service Providers (PHSP) on reduction of harmful practices, infant and young child feeding (IYCF), maternal nutrition, and sales/business for common nutrition and hygiene items;
7. Mobilization of communities for Community-Led Total Sanitation (CLTS); and
8. Provision of support for communities to lobby for increased water and sanitation services.

² WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<https://washdata.org>)

[SCORE Overview](#)

This design challenge, Sanitation in Complex Operational Environments (SCORE), was initiated as part of RFA TOPS-WASH, which is funded by USAID's Food for Peace (FFP) program. The objective of this RFA was to solicit design and implementation proposals from research partners to tackle key sanitation challenges in the implementation area of the USAID-funded SHOUHARDO III Development Food Security Activity (DFSA) led by CARE. Challenges arise from: 1) seasonal inundation of char/haor regions; 2) minimal land availability for household latrines; and 3) inability to afford existing flood-resistant latrine models for the poor and extreme poor (FFP's target beneficiaries).

The scope of work for this design challenge was to develop an implementation plan for low-cost, locally available sanitation solutions for populations living in the haor and char areas of Bangladesh. Solutions were required to meet the following criteria:

- Meet the WHO UNICEF Joint Monitoring Program (JMP) and USAID criteria for 'limited' sanitation services
- Be able to withstand seasonal flooding and inundation in the char/haor areas and remaining effective during both the dry and monsoon seasons
- Be affordable, with a cost between 5,000 and 12,000 BT (USD \$60 - \$150)
- Include behavior change solutions that take into account appropriateness for context and social norms
- Account for safe fecal sludge management during all stages of collection, storage, and final disposal
- May include non technological solutions.

iDE was awarded the SCORE project, which subsequently followed three phases: Hear (March - April), Create (May – June), and Deliver (July). The HEAR phase included a 'deep dive' (immersive rapid ethnographic research). The CREATE phase included nine rapid prototype installations and follow up interviews focused on products, BCC and service delivery models. The DELIVER phase compiled these learnings into a final strategy, which is summarized in this report. The milestones of this program were:

- **Milestone 1** - Inception Meeting
- **Milestone 2** - Deep Dive Report (see Annex B)
- **Milestone 3** - Prototyping Report (see Annex B)
- **Milestone 4** - Implementation Strategy with Monitoring Framework, Installation Guidelines, Behavior Change and Promotional Strategy, and Stakeholder Engagement Strategy documents (this report)

This report briefly reviews background information on sanitation and nutrition, the complex environment context, the human centered design approach, and the limitations of the strategy. Next, the report summarizes the outcomes of the HEAR and CREATE phases. Lastly, it presents the strategy of the DELIVER phase. The strategy includes four elements: 1) recommended sanitation products, 2) sample behavior change communication concepts, 3) recommend service delivery model, and 4) sample implementation strategy.



Background

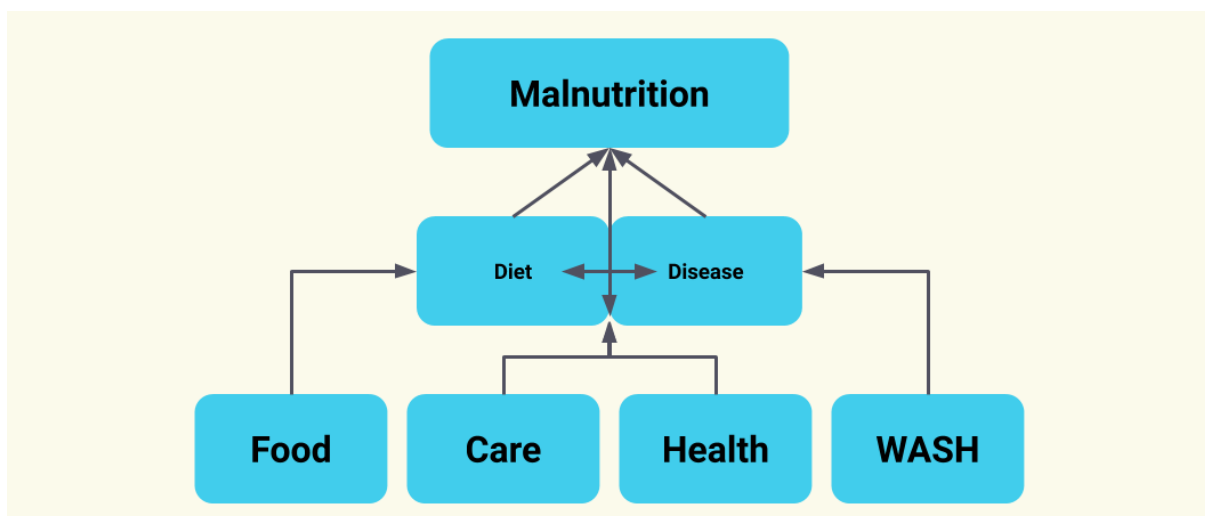
[Sanitation and Food Security](#)

Quality sanitation impacts not only health at the individual, household, and community level, but also has impacts on food security, dignity and well-being. These outcomes are even stronger for women and girls, who experience the brunt of such challenges. In order to ensure positive impacts, improved sanitation must be **accessible** and must remain **usable, resilient, and sustainable**.

Incorporating a focus on WASH as part of food security and nutrition programs like SHOUHARDO III can help programs achieve their larger goals of improving households' health and well-being. Evidence increasingly points to the central role of adequate access to sanitation services for bolstering nutrition outcomes.³ The diagram below outlines the balance of care, health, WASH, and food that in turn impacts diet and disease, and malnutrition.⁴

Existing research underscores the importance of adequate WASH for improving nutrition outcomes, supporting the incorporation of WASH activities within nutrition programs.⁵ Poor WASH impacts nutrition through four primary channels: 1) environmental enteropathy, or suboptimal nutrient absorption due to repeated infections of the gut; 2) soil-transmitted helminths and nematodes, or parasitic worms; 3) diarrheal diseases, acute respiratory infections, and malaria; and 4) high cost of water, including transportation and time costs, and the costs of medical treatments.⁴

Figure 1. Flowchart of the links between malnutrition and WASH. Adopted from Unicef and WSP.⁴



Based on iDE's experience implementing WASH programs both globally and in Bangladesh, successful latrine uptake and sustained usage relies on a full understanding of drivers and barriers to behavior change. This includes social, economic, health, and convenience factors, as well as challenges and opportunities in the broader market. Therefore, the project uses the market system development framework and an approach rooted in the assumption that developing market systems is the best way to bring about sustainable and scalable change to benefit low-income communities. This framework also seeks to make markets more inclusive of the poor and vulnerable, and to work sustainably to

³ See, for example this annotated bibliography on the evidence linking WASH and stunting.

<https://sanitationupdates.blog/2016/06/07/wash-stunting-an-annotated-bibliography/>

⁴ Chase, C. and Ngunjiri, F. (2016) "Multisectoral Approaches to Improving Nutrition: Water, Sanitation and Hygiene." WSP Learning Note, Feb 2016.

⁵ Cumming, O and Carincross, S. (May 2016). [Can Water, Sanitation and Hygiene Help Eliminate Stunting? Current Evidence and Policy Implications](#). *Maternal & Child Nutrition*.

address weaknesses in the market system. By identifying the underlying causes of weak market performance and designing interventions to address them, the power of markets can be leveraged to bring about large scale, enduring change.

iDE has experience in catalyzing markets for sanitation in Bangladesh, Cambodia, Nepal, Vietnam, and Ghana, with over 1 million WASH product sales to date.⁶ In Bangladesh, iDE has facilitated over 380,000 low-cost WASH sales (safe water, sanitation, and FSM) reaching 1.7 million people in the last five years through a newly established association-based network of 1,150 WASH entrepreneurs and 500+ commission based sales agents (45% women).⁷ Our entrepreneurs have seen 4.2x growth in their businesses, and 42% of latrine sales have been to extreme poor households. 95% of households are satisfied with their latrines after six months of use.⁸

iDE's systemic approach to WASH and strong collaboration with the public and private sectors won the 2017 P3 Impact Award. This scalable outreach model has been applied in six divisions across Bangladesh, including in hard-to-reach and disaster-prone areas, and with marginalized groups. The team has successfully piloted 20 WASH products and commercialized six products with the private sector since 2013.

iDE uses a flexible model of participatory action research that adapts and responds to changing dynamics, along with hands-on coaching of private sector actors. This approach is based on Human Centred Design (HCD), a systematic method for acquiring a deep understanding of customers, their environments, and their routines in order to create innovative solutions to the problems that they face. This approach allows iDE to develop effective solutions even in complex environments.

iDE's experience in sanitation in Bangladesh provided the building blocks for effective WASH solutions for the haor and char areas, but this research provided new learnings and insights which helped to assemble them together. Insights on product, service delivery, behavior change and implementation have all been tailored to the haor and char environments and for SHOUHARDO III beneficiaries. iDE anticipates that these findings will enrich not only the SHOUHARDO III program, but sanitation marketing programming across Bangladesh and beyond.

Project Approach

This project combines two theoretical approaches: **Human Centred Design** and **Market Systems Strengthening**. They are described below.

[Human Centred Design](#)

Human-Centered Design (HCD) is a research methodology that maximizes the likelihood of adoption, long-term sustainability, and scalability of a market-based solution.⁹ It is used to design and deliver holistic offerings, usually a combination of product(s), service(s), marketing, financing, and distribution. The approach is a branch of participatory action research.¹⁰

HCD utilizes an ethnography-like approach to deeply understand latent user and stakeholder needs. It combines this with methods and expertise from product design, industrial design, business design, service design, and marketing strategy. HCD creates market-based solutions that are desirable,

⁶ www.ideglobal.org - Impact tracking

⁷ See this post for a discussion of the first 200,000 latrines. <https://www.ideglobal.org/key-project/were-making-big-waves>

⁸ **SanMarkS (Sanitation Marketing Systems in Bangladesh). Annual Report 2017**. Funded by SDC and UNICEF, SanMarkS is a 48-month sanitation access project and implemented by iDE and the DPHE, which is seeking to strengthen the sanitation market system and increase access to improved sanitation for the poor and disadvantaged. (2015-2019).

⁹ IDEO (2011). Human Centered Design Toolkit: An Open Source Toolkit To Inspire New Solutions in the Developing World.

¹⁰ Silverman, Howard. (2015) Designerly Ways for Action Research in The Sage Handbook of Action Research. Bradbury-Huang, H. (Ed.)

accessible, usable, maintainable, and affordable for consumers, in addition to being technically feasible and economically viable for stakeholders in the market-system. HCD is considered a best practice among the world's largest (market-based) consumer goods and services firms, and has recently gained credence in the development sector as a way to improve return on investment and the probability of scale and sustainability of market-based initiatives.

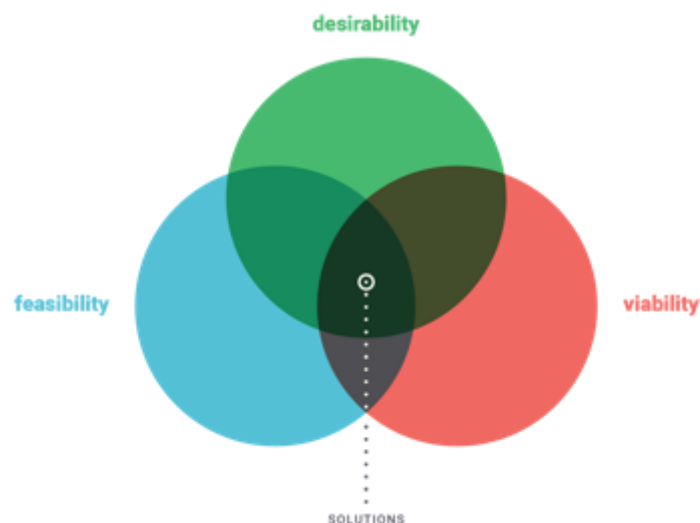
HCD seeks to find solutions that are desirable, feasible and viable. These three lenses shape the full research process from HEAR to CREATE, through DELIVER.

Desirability (Social): What do users need and want? What are the drivers and barriers to adoption? What incentives drive their decisions? What is the entire user experience, from the moment they are exposed to the solution to their ongoing use and maintenance?

Feasibility (Technical): What can be done technically? Will this technology work locally, given environmental constraints?

Viability (Economic): What is financially and economically viable? Is there a financing model and incentive structure that allows this solution to be sustained for as long as it is needed?

Figure 2. The three lenses of human centered design¹¹



Central to the HCD research process are “deep dives” and “co-creation.”¹⁰ Deep dives employ real life observations made through rapid ethnographic consumer research methodologies to systematically analyze the marketplace, consumers, and other relevant actors. Rapid prototyping, or “co-creation” support the participatory engagement of a variety of stakeholders, such as market actors and government, to design solutions. From this research, observations are distilled and synthesized into insights on desirability, feasibility, and viability that illustrate potential opportunities, as well as market development and marketing strategies for solutions. The HCD approach was selected to capture various perspectives from multiple user and actor groups, including gender inclusive perspectives.

[Market Systems Strengthening](#)

In iDE's experience, successful latrine uptake and sustained usage comes from a full understanding of drivers and barriers to behavior change, including social, economic, health, and convenience factors, as well as challenges and opportunities in the broader market. Therefore, the project has used a market

¹¹ For more see iDE's webpage on HCD. <https://www.ideglobal.org/story/human-centered-design>

system development framework. The project's approach is rooted in the assumption that developing market systems is the best way to bring about sustainable and scalable change to benefit low income communities, even in weak markets such as the haor and char areas. The market systems development framework also seeks to make markets more accessible to poor households, while addressing weaknesses in the market system. By identifying the underlying causes of weak market performance and designing interventions to address them, the power of markets can be leveraged to bring about large scale, enduring change.

Geographic and Market Context

In rural Bangladesh, access to sanitation has significantly improved over the last 20 years, and the practice of open defecation has drastically decreased. However, country-wide coverage with low-quality latrines has led to a situation where the achievement of Sustainable Development Goal (SDG) 6¹² is unlikely from a hygienic quality perspective. Thirty-one (31) percent of the population still does not have access to improved sanitation,¹³ costing the economy of Bangladesh BDT 295 billion (US\$4.2 billion) per year in losses.¹⁴

In haor (wetland) and char (riverine island) areas, the sanitation market system is fragmented, with weak linkages between retailers and sanitation entrepreneurs. Innovative technologies and improved practices do not reach the last mile and are not shared between entrepreneurs. Entrepreneurs have limited incentives to produce quality products or deliver them to the last mile.

The WASH situation is further exacerbated in hard to reach (HtR) areas such as haors and chars, due to geophysical, socio-cultural, and economic barriers. Out of 1,144 unions identified as HtR based on physiographic conditions and spatial distribution, more than 45% (517 unions¹⁵) include haors or chars.¹⁶ With limited infrastructure development, especially road networks, water and sanitation in these areas remains well below the Joint Monitoring Program (JMP) 'basic' standard (see Table 1).

The table below shows the Joint Monitoring Program sanitation ladder.¹² **All latrines that are "limited" and higher are considered improved.** iDE deepens this definition in the HEAR phase of this research to include aspects of component quality, installation and maintenance. All newly installed latrines in Bangladesh should include quality water seals and shelters. Safely managed latrines require offset fecal sludge management (FSM) technology.



Table 1. Joint Monitoring Programme Sanitation Ladder

Class	Level	Definition
Improved	5 Safely managed	Use of improved facilities which are not shared with other households and where excreta are safely disposed in situ or transported and treated off-site
	4 Basic	Use of improved facilities which are not shared with other households

¹² Sustainable Development Goal 6 - Ensure availability and sustainable management of water and sanitation for all

¹³ JMP (2017). Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines. Geneva: World Health Organization (WHO) and the United Nations Children's Fund

¹⁴ WSP (2011). Inadequate sanitation costs Bangladesh BDT 295.5 Billion (US\$4.2 Billion)

¹⁵ Unions are the smallest rural administrative and local government units in Bangladesh.

¹⁶ GoB (2011). National Strategy on Water and Sanitation for Hard to Reach areas of Bangladesh. Ministry of LGRD&C, Government of Bangladesh, Dhaka

	3	Limited	Use of improved facilities shared between two or more households
Unimproved	2	Unimproved	Use of pit latrines without a slab or platform, hanging latrines or bucket latrines
	1	Open defecation	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste

In the last decade, the Government of Bangladesh has formulated a number of policies to improve WASH conditions in HtR areas (National Strategy on Water and Sanitation for Hard to Reach areas, 2011; National Strategy for Water Supply and Sanitation, 2014; and Seventh Five Year plan, 2015). Despite concerted efforts from government and the development sector, existing data suggests that quality is still an issue both for drinking water supply and improved sanitation in Bangladesh, especially for low-income poor communities in HtR areas. In addition, the geophysical context of *chars* and *haors* is diverse, and each of these areas has distinct characteristics and livelihood patterns requiring contextualized solutions.

Various water-borne diseases and other health problems are quite frequent among *char* households, due to use of ditch and tidal water for drinking water and limited access to safe latrines.¹⁷ Similarly, in *haor* regions there is poor access to improved sanitation facilities compared with other parts of Bangladesh. Due to geography, erosion, and increasing population density, it is difficult to maintain sanitation infrastructure.¹⁸ Flooding during the monsoon season can cause also cause pit latrines to overflow.

A number of organizations have undertaken studies and pilot projects to develop latrines and sanitation systems appropriate for the flood prone areas of Bangladesh. Some of these solutions include raised latrines,¹⁹ hanging latrines,²⁰ and floating latrines.²¹ However, despite being technically feasible, these solutions have not yet reached scale due to a number of factors including lack of viable business models, engagement with supply chains and sanitation entrepreneurs, and a mismatch between product features and consumer demand.

Findings and Recommendations

Findings from the HEAR and CREATE phases are summarized below, along with final consolidated recommendations from the DELIVER phase.

HEAR PHASE

The HEAR phase of this research was conducted in April 2019 through a deep dive. This phase of the project, had four research objectives: 1)



uncover insights related to the perceptions, motivations, and barriers for users to purchase, adopt, and maintain latrines; 2) uncover insights related to the perceptions, motivations, and barriers for producers/suppliers to create, sell, and maintain latrines; 3) understand the financial and social costs and challenges faced by households with latrine adoption or lack of adoption; 4) understand consumer

¹⁷ BRAC (2011). Impact of Char Development and Settlement Project on Improving the Livelihood of Char Dwellers

¹⁸ CARE (2016). CARE Bangladesh Program Strategy 2015-2020

¹⁹ Hanchett, S. (2016). Sanitation in Bangladesh: Revolution, Evolution, and New Challenges. CLTS Knowledge Hub Paper.

²⁰ SSWM (no date). Overhung latrines.


²¹ CARE Bangladesh Program Strategy 2015-2020. Feb 2016. Care International

and actor insights related to a desirable, viable and feasible business model, using the 5 P's (Product, Price, Promotion, People, and Place).

The deep dive centred on one week of rapid, formative, ethnographic, participatory research in the Sunamganj (haor) and Kurigram (char) districts. The research team, together with the SHOUHARDO III field team, conducted field research with public sector key informants and beneficiaries. Methodology during this phase included semi-structured interviews, focus group discussions, active observation, and co-creation.²² The research team spoke to 45 consumers, three service providers, two Government officials, and 10 CARE project staff). The team conducted observations in six unions, and co-creation workshops in Sunamganj and Kurigram. In Dhaka, a national level consultation was conducted with WASH experts from public agencies, educational institutes, and development agencies implementing sanitation projects. Activities such as assumption testing, defining the 'ideal toilet', and journey mapping supported data collection (see **Annex G** for interview guidelines).

[HEAR Phase Key Findings](#)

The team uncovered significant insights around assumptions, consumers, service model, and products during the research phase. This section summarizes these findings, which are also described separately in the "HEAR Phase Deep Dive Deck," as six key HEAR insights and design principles.

HEAR Phase Deep Dive Deck	
	<p>In this visual report, we detail assumptions and research methodology, describe testing of assumptions, report key theory findings, and begin to outline recommendations.</p> <p>For consolidated outcomes of the HEAR phase see Annex A. For the full report see Annex B.</p>

[HEAR Insights](#)

Food Security Levels. This insight highlights that households at different levels of food security require different WASH strategies. These households can be identified by their performance against key SHOUHARDO III food security indicators. The direct sale of latrines will be more suitable for households who are performing better against key SHOUHARDO III indicators, while subsidies, savings and loans will be required for households performing poorly. iDE's previous food security program corroborates this; when food security programs are succeeding, households are freed up to think about other needs such as sanitation.²³

Seasonality is everything. Purchasing and installation of latrines is seasonal in both the haor and char areas. In the chars the majority of household latrine purchases occur just after harvest, and before

²² Participatory workshop activity to collaboratively design solutions with end-users and market actors.

²³ Based on learnings from PROOFS Final Report. PROOFS - Profitable Opportunities for Food Security. Funded by the Kingdom of the Netherlands, PROOFS aimed to promote food, nutrition, and WASH (water, sanitation, and hygiene) status in southwest and northwest Bangladesh in partnership with the Dutch Interchurch Organization for Development Cooperation (ICCO) and the BoP Innovation Centre.

the monsoon. In the haor areas, latrine purchases happen during the early monsoon, when higher water levels ensure easier movement of components, but before water levels get too high for installation (digging a pit and installing components).

Awareness and messaging is critical. Open defecation occurs year-round in the haor and char areas. A key aspect of any solution must include awareness building for non-users of the potential dangers posed by open defecation, regardless of the season.

Intensive, consistent contact with users is key to adoption of improved sanitation behaviors. Bad sanitation behaviors and practices have persisted in the haor and char areas, and success in getting people to adopt improved toilets will be dependent on the frequency of direct contact with beneficiary households. WASH programs must operate differently than on the mainland, because these geographies and users/actors face different and extreme challenges. Implementing partners must be directly involved at the field-level and provide consistent and accurate qualitative and quantitative data to all stakeholders so that project leadership has a clear understanding of what is happening.

Focus on what is possible to improve, build on what is working well. Households stated that they just want toilets they can use year-round. Households articulated that latrines should instead be flood resilient. Such latrines are more affordable, more easily available and simpler to adopt for service providers to produce, install and repair.

Definitions of “improved” latrines are hazy. There is a lack of consistency around the definition of what is an improved or quality latrine. This confusion includes program staff, service providers, local government, DPHE (Department of Public Health and Engineering), and households. Notably absent is a concept of sustained improvement, proper installation, and maintenance.

HEAR Design Principles

The following table summarizes design principles based on the findings from the HEAR phase. These principles are disaggregated by implications for people (individuals for whom the solutions will be designed), product (the final sanitation solution), and services (including business model, enabling environment, and behavior change communication) that would enable effective uptake of a sanitation solution.

Table 2. Summary design principles from the HEAR phase

HAOR	CHAR
People	
<ul style="list-style-type: none"> Ensure that households in the haor are aware that the current latrine practices are harmful and must be addressed. 	<ul style="list-style-type: none"> Reinforce good latrine practice as being a year-round activity.
Product	
<ul style="list-style-type: none"> Design a product solution that can be used in the wet and dry season. Design a product that does not add additional cost. Design a product that will stand the test of time throughout the seasons/years. 	<ul style="list-style-type: none"> Design a product solution that can be used in the wet/flood and dry season Design a product that is a natural upgrade. Design a product that will stand the test of time throughout the seasons/years.
Service	
<ul style="list-style-type: none"> Educate and guide households on the proper placement of a latrine. Encourage and incentivize Latrine Producers to produce high quality parts and to grow their business. Relieve the pain of cleaning. Work with what is already there. Leave nothing to chance. 	<ul style="list-style-type: none"> Target the right customers, at the right time. Provide latrines and customers with easier access/transport. Bridge the gap between the customers and the implementing partner to ensure full transparency.

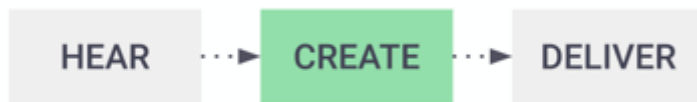
These principles can be summarized into two design statements.

1. Reinvent the model with [installation services](#) of [improved latrines](#) at the center of the strategy.
2. Strengthen the market ecosystem with a [catalyst](#).²⁴

²⁴ To support with latrine locations, installation practices, subsidy allocation and ensuring that no one falls through the cracks.

CREATE PHASE

The CREATE phase of this research was conducted in May and June 2019, with both field and office-based prototyping of products, service delivery models, behavior change communication, and implementation strategy. There were two sub-phases: rapid prototyping and in-depth interviews. The prototyping focused on products, while the interviews focused on behavior change communication, service delivery and implementation strategy. In this section, we summarize key findings from the CREATE Phase and highlight how iDE translated these insights into final recommendations. Insights are indicated in **bold text**. Insights are for both haor and char areas unless stated otherwise.



[CREATE Findings](#)

CREATE Phase Documentation	
	<p>For the slide deck of the CREATE phase see Annex C, and for the full report on product investigation please see Annex D. Installation guidelines for the proposed technologies can be found in Annex E. Interview guidelines from the field research can be found in Annex G.</p>

Location of the Latrine

Smell is the key barrier to moving latrines closer to households (and is why they are often installed at the edge of the household's mound). After determining as part of the HEAR phase that mound-edge latrines are not a safe option for the haor area, we tested the main barriers to safe mound installation. One barrier cited by households is the availability of space. However, we did not come across any households that would not have enough space on their mounds for a basic direct pit latrine. The second barrier is the smell. Prototype installations drastically reduced the smell through the use of an improved latrine pan (the SaTo pan). After these installations, all households were happy with the decision to have the latrine closer to the home, stating that it was much easier to access and safer for women and girls.

Raised latrines are more work than expected. While raising latrines to the same height as the home is required in chars to prevent flooding, it takes a lot of effort on behalf of the household to collect the required mud and to create a mound. As part of the CREATE phase, this preparation work was completed in-kind by households. It is worth noting however that if mound-building were outsourced, the total cost of the latrine's installation would increase by a third. It is iDE's recommendation that support be provided to households to build their own mound in order to keep costs for households limited.

Superstructure (Shelters)

Height matters. Although the research team originally designed a shorter (five foot tall) shelter that would use less corrugated iron, after user feedback and a costing exercise we determined that the costs are not that different for a taller (six foot tall) shelter. Additionally, all the consumers preferred to have a taller shelter and were less satisfied with the shorter versions, as cutting the tin was seen as wasteful.

Concrete pillars offer higher resilience. Although they cost three times as much (400 BDT-1200 BDT/5-14 USD), concrete pillars are able to withstand higher winds and flooding than bamboo. Households will need to balance these costs and determine their preferences and priorities. Households can also choose to initially build latrines using bamboo poles and upgrade later when more resources become available.

A transparent roof panel supports women and girls. We also recommend a transparent roof panel that that can let light into the latrine during the day. This panel costs approximately 150 BDT/2 USD, and allows for better cleaning and use practices. Most individuals use a cellphone light during the night, and a basic mesh bag could be used to hang phones on the door to cast light throughout the latrine. This is specifically important for menstrual hygiene management.

Midstructure (Slabs)

Cut-out corner designs improved space efficiency and the comfort of women and girls. After rapid prototyping in both the haor and char, we determined that shelter could be made to take up less space if the slab design included cut-aways in the corners for pillars. This reduces the footprint of the design. It also helps to reduce gaps around the bottom of the latrine shelter which make women uncomfortable. Three out of our four recommended latrines have square slabs with cut-out corner designs.

Complexity of latrine designs should be balanced with cost considerations for households. Early in the design process, iDE had a number of ideas about more sophisticated latrine designs which would address concerns about utility during flooding. The team considered piloting a square latrine slab with handles for easy movement during flooding or for sweeping. However, during rapid prototyping, this idea was deemed not necessary by both households and latrine producers as only 'valuable' items such as livestock and jewelry are moved during floods. Just like no one in a developed country would think of bringing their toilet with them in a flood, households in Bangladesh also saw this concept is unnecessary. As for sweeping, households and latrine producers did not express any issues when asked about moving the slab. Lastly, households preferred a cleaner layout without handles, as they were seen as an obstacle to squatting.

We also tested three different pan varieties: SaTo, SaTo with Collection Box, and SanBox. We eliminated the SanBox, as it is three times the price of the SaTo with Collection box, and has similar functionality. Lastly, we also looked into mound-edge septic tanks and biofil onsite fecal sludge management systems.

However, while these complex designs can offer higher functionality, they get expensive very quickly. Even the very simple designs we recommend can be too expensive depending on transportation and installation costs.

Simple, inexpensive steps can protect mounds from erosion. Very simple steps can help reduce erosion of the mound in char installations. After conversations with latrine producers and households, we recommend covering the mound in rice bags and grass (or grass seeds). This helps to keep soil from washing away in flooding and monsoon rains.

Substructure (Pits)

Using fewer rings and installing shallower pits is a tough sell in target communities. The value of having a shallower, but wider latrine pit was a difficult concept for households, service providers, local government, and even NGO staff to adopt, in part because there is a strong perception that deeper pits are better (the ‘get it and forget it’ model). However, best practices indicate that pits should remain 1.5 meters above the ground water level²⁵ (almost impossible to do in SCORE areas, but still important to do as much as possible) to facilitate safer and easier sweeping. Keeping prices low can be the main motivation for households to reduce the number of rings.

We recommend shallower, wider pits that are designed for safer leaching, promote sludge decomposition and treatment, and reduce safety hazards for sweepers. For this reason, we recommend the use of the FilTo system. **Households, service providers, local government and NGO staff are all interested in the FilTo technology.** All these individuals described the benefits of the FilTo to the team after installations. The main attractive features were the reduction in sweeping frequency and the increased, safer leaching of the pit. While the FilTo system is not able to fully remove bacteria, worms and viruses, it does offer a stepwise improvement over traditional systems.

Creative layouts reduce footprints. As installation at the mound edge is the norm in haors, households are not used to designing layouts for offset pits and slabs within the mound. A SHOUHARDO staff member can help mitigate these challenges by brainstorming creative ways to lay out latrines with households. While polyethylene pipes which are readily available in the local market must stay on an angle, there are many ways to bend and adjust pipes through 60 and 90 degree elbow bends. The only rule of thumb is to ensure at least 6” of offset to ensure stable slab placement. Muslim customers are also limited in their layouts as they must not face Mecca while defecating. Pipe bends from the pit to the slab can support more creative layouts to ensure proper pan directions.

Behavior Change Communication

[*In-depth Interviews - BCC and Implementation Strategy*](#)

We conducted interviews with 20 households (with toilet and without toilets), 10 latrine producers and 10 iDE/CARE team actors in Sunamganj (haor) and Kurigram (char) (half in each geography). These interviews helped to understand the messages and mediums that will resonate most with customers. We investigated three main aspects of behavior change communication: **messages** (what we communicate), **mediums** (where we communicate), and **visual language** (how we communicate). Our interviews had three main objectives:

Target Audience Identification: The first, and arguably the most important, step in any behavior change marketing campaign is identifying and understanding the target audience. Different types of people behave in different ways, are influenced in different ways, and can be reached in different ways. Understanding your target audience, both from a demographic (e.g. age, gender, location) and psychographic (e.g. attitudes and interests) perspective is critically important in developing a successful promotion campaign.

Message Development: Crafting the right message for the target audience. Most people cannot be “convinced” to change their behavior; rather, they need to be motivated to change on their own. The key to motivating a target audience is understanding what’s in it for them. What matters to them enough

²⁵ Harvey, P. (2007). Excreta disposal in emergencies: A field manual. See Chapter 5 - page 69
https://wedc-knowledge.lboro.ac.uk/resources/books/Excreta_Disposal_in_Emergencies_-_Ch_5.pdf

While focused on emergencies, this handbook is clear about best practices during and around flooding events.

to make a change? The next step is figuring out how to make the desired behavior appear fun, easy, and popular.







Testing Outreach and Placement: Coming up with the right message is a big part of behavior change marketing, but it's not the only part. Creating meaningful behavior change requires developing messaging and interventions that offer the target audience awareness needed to assist with adopting the desired behavior.

Char Behavior Change Testing

Based on evidence from the HEAR Phase, the team determined that two messages should be tested in the char: health and wealth (practical or aspirational, respectively). Sample messages are below.

Practical - Health	Aspirational - Wealth
<p>Sweep your latrine before the rainy season! Feces in water can be unhealthy.</p> <p>Happy and Healthy Families have latrines.</p>	<p>Wealthy people know about good, clean toilets.</p> <p>Good life. Good latrine.</p>

We also tested different visual approaches, including photographs of people, photographs of water, and line drawings or simple graphic elements.







Aspirational		Similar/Like	
<p>Featuring a person from a large city and from a different social and economic class. Users and non-users have expressed a common sentiment that they trust people from urban environments because they have money.</p>		<p>Featuring users similar/like to the target groups who are happy and satisfied subject. By testing this image, we sought to understand whether users/non-users prefer to hear information from their peers.</p>	
<p>Water representing livelihood/environment. Do users and non-users relate to depictions of a pristine environment?</p>		<p>Users shown near clean water, featuring common, understandable moments of daily life in the rural areas.</p>	
<p>A different visual language. Aspirational line drawings/simple illustrations featuring family and clean latrines.</p>		<p>A different visual language. A focus on water as necessary for food security/income using simple graphic elements. This also tested audience understanding of such images.</p>	

Haor Behavior Change Testing

Based on the HEAR Phase, the team determined that two messages should be tested in the haor: encouraging and cautionary (practical or aspirational respectively). Such sample messages are summarized below.

Encouraging	Cautionary
<p>Poop in water is bad for your health and family. Hire a sweeper only.</p> <p>Have uninstalled rings? You can use them now.</p>	<p>This is bad practice. This is good practice.</p> <p>You cannot empty your pits in water. This makes you and your neighbors sick.</p>

We also tested different visual approaches, including photographs of people, photographs of water and line drawings and simple graphic elements

Aspirational		Similar/Like	
<p>Featuring a person from a large city and from a different social and economic class. Users and non-users have expressed a common sentiment that they trust people from urban environments because they have money.</p>		<p>Featuring a comparison between good and bad practices. This also tested whether the target audience understood the visual language of photos.</p>	
<p>Real-life images featuring existing products at household level/community level.</p>		<p>Aspirational photos featuring the relationship between water, environment, and health.</p>	
<p>Line drawings/simple illustrations featuring good/bad practices and existing parts.</p>		<p>A focus on disease and danger. This also tested audience understanding of simple graphic elements.</p>	

Safety is the most salient message for changing behavior around purchasing and correctly installing improved latrines. Although we tested numerous messages focusing on improved health, hygiene, sickness, seeing feces, and water quality, participants overwhelmingly responded to messages of safety (or the lack thereof) when reflecting on their experience using unimproved toilets (including mound edge erosion underneath a latrine, open defecation, hanging latrines, and boat defecation). Safety in this case can be defined as using a latrine without fear of falling either into the water or, in the dry season, into feces. Furthermore, this concept of safety is not only about not being injured and using latrines without fear. It is also about the consistent safe access to a resilient latrine particularly in flood-prone areas.

Different visual methods align with different mediums. We tested how both photographs and line drawings are understood by potential customers. Our investigation shows that photographs/videos of aspirational figures are best suited for above the line marketing (such as billboards and tv advertisement). Simple line drawings depicting common scenes are best suited for below the line marketing (such as courtyard session flip charts and flyers). Below the line refers to interpersonal marketing and above the line marketing refers to mass communication.

Service Delivery Model

Environmental complexity necessitates an agent to connect households, LPs and local governments. Based on our analysis, we believe that having an agent directly working with households, local service providers, and local government is the best way to catalyze a focus on installation over technologies. iDE has utilized sales agent actors in Cambodia and Ghana in a similar capacity. These individuals are NGO-contracted staff and earn a commission for correctly installed latrines. Alternatively, in Bangladesh and Nepal, iDE has relied on a one-degree of separation model, in which local service providers to directly hire their own sales agents. These two models have different strengths and weaknesses, however in complex environments (such as those with high rates of open defecation), employing an NGO-contracted staff person has proved more effective.

Latrine producers can become service providers. Our interviews with latrine producers have found that some (though not all) are very interested in expanding their business into installation, sweeper referrals, and repairs. This indicates the need for careful selection of at least one expansion-minded service provider in each union who would be interested in and capable of providing a one-stop approach to sanitation services.

Connections are critical. While service providers can be carefully selected and trained, they do not inherently possess the required connections to sweepers, carpenters, local government, and microfinance required for expanding their business. While simple, these connections are important for the strength of the strategy.

Leverage existing components. We initially identified the prevalence of existing, unused components in the HEAR phase. In this phase, we further explored the extent of households with uninstalled components. Many households have these components from previous subsidy programs. With rings as expensive as they are (especially in haor areas), these uninstalled components are very valuable and have the potential to reduce the price of a latrine by a third.

DELIVER PHASE

The DELIVER phase reporting includes five sections:



- 1) **Implementation Strategy** - The overarching approach and pathways for integrating sanitation marketing into SHOUHARDO III.
- 2) **Sanitation Product Solutions** - Recommendations for sanitation technologies, components, installation and maintenance.
- 3) **Behavior Change Communication Strategy** - Recommendations for marketing and behavioral messaging to households.
- 4) **Business Model** - The commercial model that ties the strategy together, and the project (as a catalyst, not a long-term actor), the private sector, and local government.
- 5) **Implementation Plan** - The proposed plan for targeting, staffing and rolling out the recommendations.

Implementation Strategy

This implementation strategy seeks to increase the use of improved sanitation in the haor and char areas of the SHOUHARDO III project. Built on a foundation of improved sanitation solutions, the strategy includes three parallel pathways for the market: **demand generation**, improved access to **supply**, and market **support**. Demand focuses on SHOUHARDO beneficiaries as consumers, supply on market actors such as local service providers, and support on smart subsidies and ensuring that installation and maintenance are priorities for households. Figure 3 shows this approach in a simple schematic. The blue boxes represent the market pathways and the red boxes represent the key interventions. Each pathway and intervention is explained in detail in the following sections.

Figure 3. High level implementation strategy overview



Why change current installation practices? Why not change the technology?

In order to ensure the safety and resilience of recommended latrines, the team identified two possible pathways: 1) change technologies, or 2) change installation practices. Mound edge installation practices are unsafe and not resilient due to unstable slabs, soil erosion, and unsafe leaching into water bodies and the environment. We sought to select the pathway with the fewest barriers to systemic adoption. Systemic adoption means not just adoption by households, but adoption by service delivery mechanisms. By keeping the technical components as close as possible to existing components, we reduce possible complexity and future risks. While floating latrines and other more complex technologies have the possibility to be resilient, the risks of incorrect manufacturing and installation are high, capital and operational costs are a challenge, and production of new components takes years to establish. Our recommended solutions also move the quality control of the 'most important components' (i.e. waterseal) higher up the manufacturing supply chain. This reduces quality risks of the technical components.

Installation remains a challenge in the haor and char. The honest broker mechanism is therefore recommended to overcome this barrier. We spent significant time in this study investigating the possible threats and opportunities that would help people move away from mound edge installation. We discovered that the main reasons people put their latrines on the mound edge are 1) **smell**, 2) **ease of sweeping**, and 3) **lack of land**. However, when we asked 'where you would put a nice, smell free toilet?' the aspiration is in, or attached to, the house. This solidifies the idea that if we can design a low-smell, easy to sweep, small footprint latrine this barrier will be overcome.

The **smell** was drastically reduced by the use of an improved latrine pan during product prototyping, and after seeing demonstration latrines, interviewed households agreed that having a latrine closer to home is not only more resilient, but also better for women and girls. On the **sweeping** side, we believe that changing the method of sweeping to be productive, for example by enabling households to use buried waste to plant on, will be a strong pull towards better practices. Lastly, reducing the footprint of household latrines, through innovative design features such as cut-outs for pillars and direct pit options, supports moving latrines away from the edge of the mound while addressing household concerns about smell and contamination.

Household Adoption Strategy

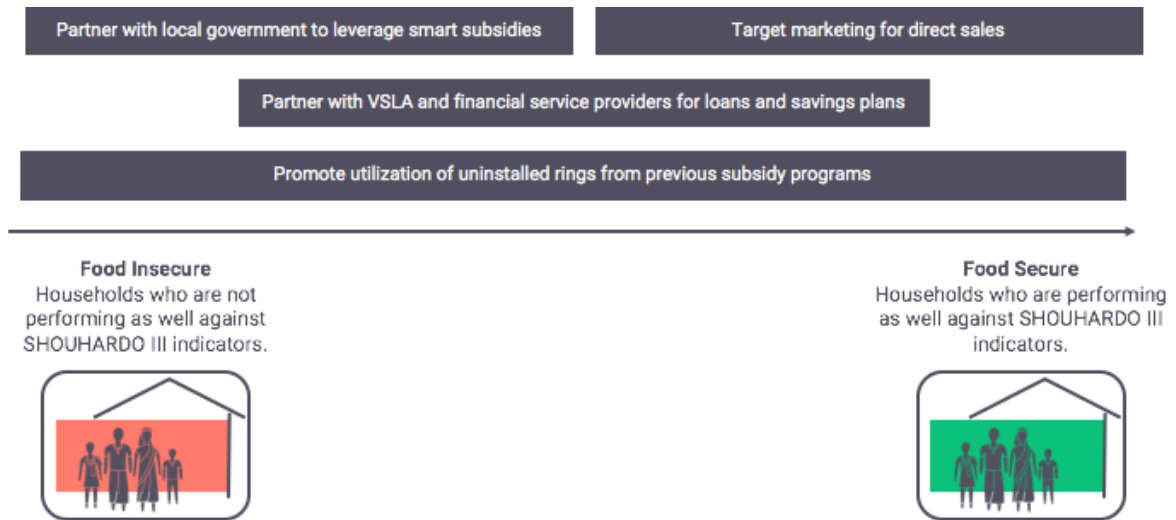
SHOUHARDO III households who have performed well on key performance indicators relating to food security should be able to adopt one of the proposed solutions. This should be possible through using existing components, savings or loans, subsidies, or direct purchase. For households who are not performing well on the indicators, existing government subsidy provisions programs are well situated to support access, and these households should be prioritized for support by SHOUHARDO III as described in the smart subsidy section.

The following four approaches are recommended to ensure that every SHOUHARDO household can adopt an improved latrine. These four approaches target households across the spectrum of food security, as seen in the chart below.

1. Target marketing for direct sales²⁶
2. Partner with local government to leverage smart subsidies (see Box 2)
3. Partner with savings groups and financial service providers to provide loans and savings plans
4. Promote utilization of uninstalled rings from previous subsidy programs

²⁶ iDE's deep dive in the HEAR phase identified targeting households who are performing better against key SHOUHARDO III indicators relating to food security and who have more secure sources of income to spend on latrines. For food insecure households the first SHOUHARDO goal is food security and then WASH.

Figure 4. Food security spectrum and sanitation targeting approaches

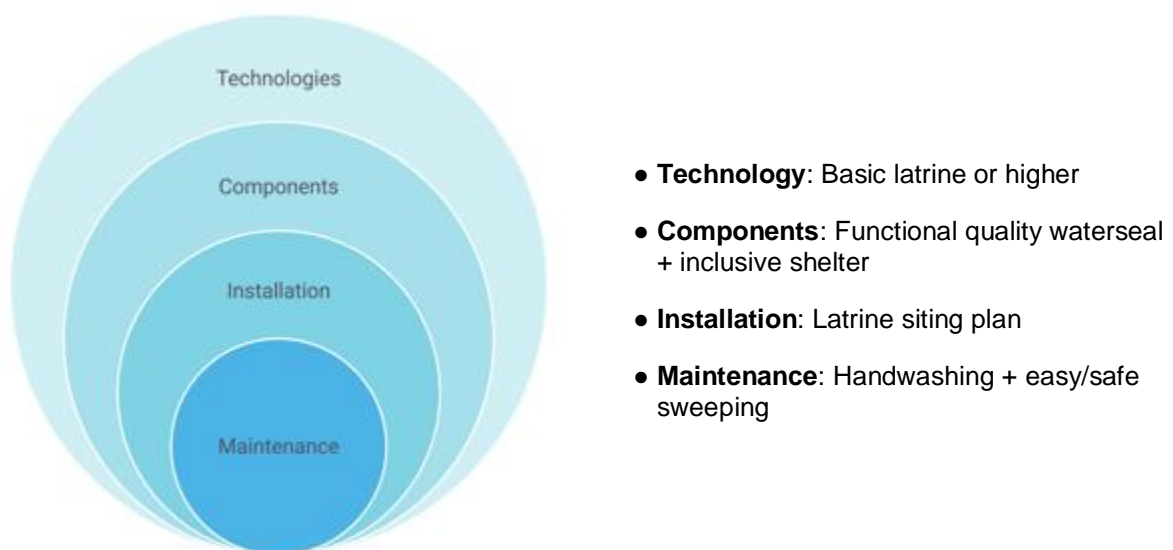


Foundation: Sanitation Product Solutions

Improved latrines require four levels of improvement: 1) technology; 2) components; 3) installation, and 4) maintenance. iDE’s deep dive research found that the greatest challenges to latrine use and operations in flood-prone areas of the haor and char are **installation and latrine siting**.

Latrine siting refers to selecting the location of a latrine. The initial assumption prior to the project’s inception was that the greatest barriers to uptake and use of the latrine during the rainy season were associated with available technology. However, while complex solutions appear shiny, they often fall into disrepair quickly. Floating latrines, wetlands, septic systems, and fecal matter drying systems are technically feasible in the haor areas, but the risks to sustainable desirability and commercial viability are very high. Therefore, our recommended solutions are simple, because simple works.

Figure 5. Recommended four levels for improved latrines



Solution Branding

Although the recommended solutions rely on common technologies readily available in the haor and char areas, iDE feels there is value in providing this solution with a unique brand for both the product and the services. This brand is designed be aspirational for the haor and char areas to encourage households to perceive and aspire to new and improved latrines.



Among households where the team installed new toilets, when asked about their experience, they overwhelmingly expressed that they felt the new latrine was **SAFE**. Meanwhile, non-users perceived their current, unimproved, toilets as **UNSAFE**. Therefore, using the Bangla word for SAFE, “Nirapad,” and the English word “Pod” which means a streamlined enclosure, housing, or detachable container of some kind, we have created the brand “NiraPod, the Safe Toilet.” We recommend that all above the line and below the line marketing and service elements include this branding. This branding has been tested and validated by users and NGO actors.

iDE recommends a suite of four unique latrine designs. These designs aim to balance affordability with quality. They differ in key ways from iDE’s conventional designs. For example, the shelter design has been updated to be wider and taller, with an optional transparent roof panel, and the slab design includes corner cutouts to ensure space for cement pillars. Additionally, we do not recommend any of the ceramic pan or SanBox latrine designs which come with full septic tanks or twin pit systems. This is to keep prices down and be functional in a smaller footprint.

Although the offset latrine designs are more expensive and take up more space, households were very interested in this upgrade. Our research found three reasons for this interest: 1) offset latrines are seen as more prestigious and related to ‘city people,’ a desirable group to emulate; 2) offset latrines can be closer to the home since they reduce smell, and being closer to the home is identified as safer for women, children and seniors; 3) offset latrines are easier to sweep, as the squatting slab does not need to be removed.

Nirapod latrines include four options. Two are direct pits and two are offset pits. All designs include the SaTo pan, which features a tamper-proof waterseal. This significantly reduces smell, the main barrier to installing close-to-home latrines.

Basic: This latrine is a simple low-cost design. It is a simple pit latrine, where the squatting slab sits directly on top of the pit. The pit is lined with three concrete rings. The squatting slab has a trap door latrine pan that keeps away flies and blocks smell. This latrine includes a corrugated iron (tin) shelter with bamboo pillars which is wider than traditional designs.

Basic+: The Basic+ design includes three upgrades on the Basic design. Firstly, concrete pillars are used in the shelter instead of bamboo, with a transparent roof²⁷ panel for more light. The squatting slab is square, which allows for more space in the latrine. And the pit includes a low-cost onsite Fecal Sludge Management system called FilTo, which increases leaching, decreases the volume of sludge in the tank, performs primary treatment of the sludge in the tank, and promotes safer emptying. This design has four concrete rings, including FilTo, which are sealed together as a tank.

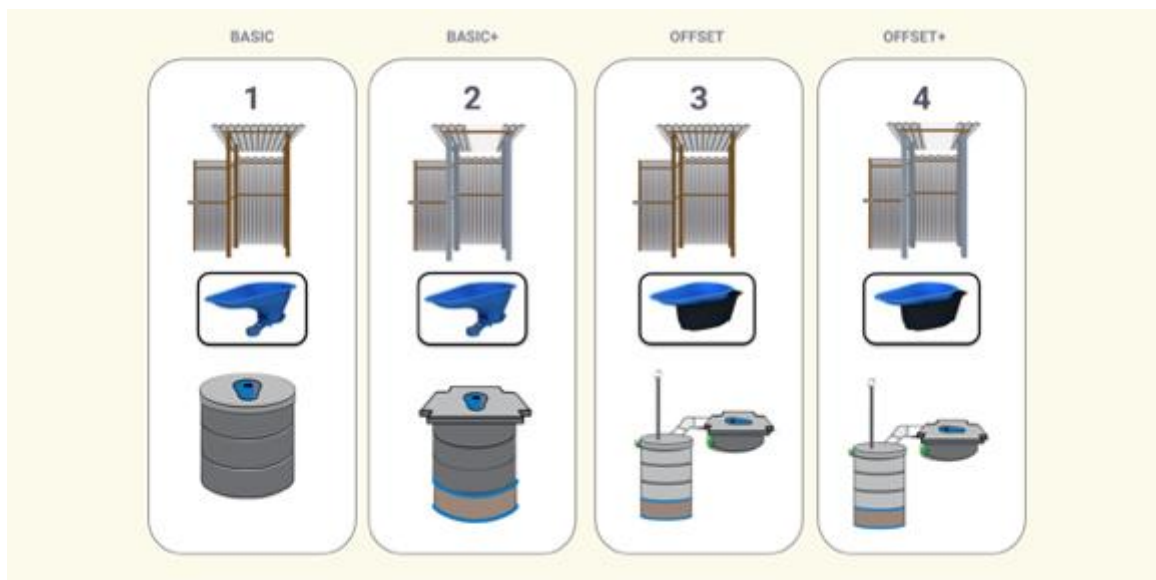
Offset: The Offset design moves the pit from directly underneath the squatting slab, offsetting it by 2-3 feet. The pit remains the same as the Basic+ latrine, including FilTo system. The shelter is the same as the Basic design, with bamboo pillars and corrugated iron.

²⁷ Transparent roof costs additional USD 5 compared to regular tin

Offset+: The Offset+ design includes the same squatting slab and pit as the Offset design. However, the shelter can also be attached to the home, which is especially helpful for individuals with disabilities. The shelter is the same as the Basic+ design, with four concrete pillars, corrugated iron, walls and a transparent roof panel.

See **Annex E** for product installation guidelines.

Figure 6. Recommended latrine options



Sweeping Services: Sweeping is the term for emptying latrines and septic systems in Bangladesh. iDE recommends the FilTo FSM solution, which aids in keeping sludge in shallower pits and helps to drain liquid. This makes the sludge significantly safer to move, as it is not liquid. Pits should be swept **before the monsoon each year**. Some sweepers don't know how to treat more solid sludge, and therefore end up reliquifying the sludge with kerosene (which also helps to cover the smell). Ash or sawdust is a much safer option to reduce smell and soak up remaining liquid in the pit prior to sweeping. The sludge can then be shoveled safely disposed into a nearby pit. This is a difficult behavior change to introduce in the haor, where the preference is to sweep during the monsoon by letting the pit drain into the water. However, by opening opportunities to increase the fertility of poor quality soil, we believe this can become a more viable option. Any changes to sweeping technologies will require parallel behavior change communication strategies to promote adoption.

Ensuring an Affordable Product Suite - Pricing Breakdown

Consistent with the HCD approach, the proposed solutions meet the required affordability criteria (between 5,000 and 12,000 BDT/USD \$60 – \$150), as well as being commercially viable for the private sector to sustainably and autonomously deliver.

As discovered through the deep dive research, many households already have latrine components such as rings, shelter tin, shelter bamboo, and maintenance add-ons. Often households are also willing to provide in-kind labor towards the construction of a latrine, including land preparation, pit digging, installation, and transport which also helps to reduce their own costs. In the instance that households are willing to contribute either existing rings/equipment or labor towards installation, costs would be drastically reduced compared to the costs incurred during pilot installations (which did not factor in in-kind support).

Table 3. Pricing breakdown of selected sanitation solutions²⁸

CHAR		Land Preparation	Slab	Pit	Shelter	Installation and Transport	Total	Total USD
1	Basic	HH Labor (not included in costing)	650 - 1000	500 - 600	2700 - 3200	1400 - 2500	5250 - 7300	66 - 91
2	Basic+		1200 - 1400	1200 - 1300	3700 - 4700	Often HH labor to decrease costs	7500 - 9900	94 - 124
3	Offset		2300 - 2600	1500 - 1600	2700 - 3200		7900 - 9900	98 - 124
4	Offset+		2300 - 2600	1500 - 1600	3700 - 4700		8900 - 11400	111 - 140

HAOR		Slab	Pit ²⁹	Shelter	Installation and Transport	Total	Total USD
1	Basic	900 - 1000	800 - 900	2700 - 3200	1800 - 3000	6200 - 8100	76 - 101
2	Basic+	1000 - 1200	2000 - 2200	3700 - 4700		8500 - 11100	106 - 139
3	Offset	2200 - 2500	2200 - 2500	2700 - 3200		8900 - 11200	111 - 140
4	Offset+	2200 - 2500	2200 - 2500	3700 - 4700		9900 - 12700	124 - 159

Offset+ versions are on the upper edge of the affordability criteria. However, offering this version provides a psychological nudge to move households up the sanitation ladder, by illustrating potential aspirations. Based on evidence from iDE's previous programming, households will most often select the lowest level available, but aspire to a higher level.³⁰ iDE has seen in Cambodia and Bangladesh that households who only have one option (as did households in a program in Cambodia) are less likely to be interested in upgrading when further resources become available.

²⁸ Average in Bangladeshi Taka (approximately 80 BDT/USD)

²⁹ Rings are significantly more expensive in haor (180 BDT/ring in char, 300 BDT/ring in haor).

³⁰ For further details see the SanMarkS 2017 Annual Report - see also footnote 8

Pathway 1: Demand - Behavior Change and Promotional Materials

Messages

The strategy seeks to communicate four clear messages through both project staff and the private sector. These messages were refined through consumer testing and represent both the manifest (what people say) and latent (what they need) goals of the behavior change strategy. The messages play off the key theme of safety. These messages follow the FOAM approach to behavior change - focus, opportunity, ability, and motivation.³¹ Focus means identifying the behaviors and population in need of change; opportunity means ensuring they have the chance to perform the behavior; ability means ensuring that an individual is capable of the behavior, and motivation means encouraging them to want to do the behavior. The following messages are examples which use the FOAM framework.

1. Keep your family safe by adopting an improved latrine through direct purchase, loan or subsidy with a trained service provider.
2. Keep your family safe by sweeping latrines annually before the monsoon with a trained service provider.
3. Keep your family safe by installing your latrine in a safe location with the help of a honest broker and/or trained service provider.
4. (where applicable) Save money by using the installed rings that you already own.

Figure 7. SaniFOAM model for latrine adoption and behavior change²⁹



³¹ See Devine, J. (2009) Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs Jacqueline Devine https://www.wsp.org/sites/wsp/files/publications/GSP_sanifoam.pdf and iDE Bangladesh (2019). Latrine non-adopters in Bangladesh: A SaniFOAM analysis. Tactic Report

Interventions

iDE recommends two interventions: 1) behavioral messaging, also called below the line marketing; and 2) demand creation, also called above the line marketing. The activities are summarized in Table 4.

Table 4. Recommended Interventions and activities in the demand pathway

Pathway 1: Demand	
1.1 Behavior Messaging (BTL)	1.1.1 Draft Messages and Materials 1.1.2 Test and Revise Messages and Materials 1.1.3 Print Materials 1.1.4 Training of Trainers (Field team) 1.1.5 Courtyard Sessions 1.1.6 Introduction Sessions with Local Elite 1.1.7 Demonstration Installations (Market + Household)
1.2 Demand Creation (ATL)	1.2.1 Draft Messages and Materials 1.2.2 Test and Revise Messages and Materials 1.2.3 Print/Produce Materials (Billboards, flyers, tv) 1.2.4 Publish/Distribute 1.2.5 Mela Demonstrations

Behavioral Messaging - Below the Line Marketing (BTL)

Below the line marketing includes aspects such as flipcharts, demonstrations and connections with local elite, government and civil society. Our study has shown that as consumers trust and have confidence in information given to them by NGO actors. The below the line marketing scheme should be done at the household and community levels with mixed male/female groups of all ages. The visual language of this scheme should be cartoons/simple graphic illustrations, as this is what resonates with users. Images such as those below tested well prior to the piloting stage.



Sample Below the Line Marketing Components

Technology Introduction Session. These launching sessions target influential stakeholders (local government representatives, NGO staff members, teachers, village doctors, social elites, and journalists) with the objective of sharing information with them about the importance of improved sanitation and the features, costs, and value of the Nirapod. Latrine producers are best positioned to lead these sessions, with support from the project team. These sessions aim to encourage these actors to contribute to awareness-raising and ensure that any latrines provided through subsidies are of high quality.

Courtyard Sessions The most common demand creation event, courtyard sessions, allow the Honest Broker to meet directly with potential customers to assess their needs and introduce the Nirapod and the household sanitation plan. These events can also include basic sanitation education, sharing about

improved technologies, and opportunities for households to ask questions and familiarize themselves with the various latrine components of the Nirapod. Each session concludes with the Honest Broker working through a household sanitation plan with interested households. Both male and female community members will be invited to participate in the event. After session, each Honest Broker will link HHs with approved LPs in the area.

[Demand Creation - Above the Line Marketing \(ATL\)](#)

Above the line marketing refers to media distributed through billboards, TV, radio, and melas (county fairs). Our investigation has shown that for aspirational, above the line marketing consumers preferred **hearing** new information about good toilet practices from individuals they trust such as NGO workers, promoters and health workers, because they trust them to provide accurate information and they can always be found in and around their areas. Television was the most trusted of all media forms, however the costs are high. Billboards and melas were also trusted and have been used successfully in other sanitation programs. Preferred **visual** language included aspirational images from urban dwellers, doctors, and NGO workers. Urban dwellers are perceived to know about good toilets, and users equate doctors with health. Images such as those below tested well.



Sample Above the Line Marketing

The following two visuals represent possible billboard and festoon designs that can be used in promotions. These are rough drafts and iDE recommends hiring a firm to complete final versions that can be disseminated through large scale media.



Protect your health and safety with the Nirapod.



This new toilet is safe and healthy.

Pathway 2: Supply - Business Model (Sustainability Plan)

Also described in the original request for proposals as a sustainability plan, this business model supports private sector connections to meet the needs of the target system.

A fully functioning sanitation market is defined by five criteria: sustainability, autonomy, scale, resilience, and inclusion. It is where supply and demand are balanced, with the support of the public sector and civil society. Such a model supports the last mile delivery of improved products and services that are desirable, feasible and viable.

Sustainability - The extent to which the business model promoted by the program is sustainable and/or profitable.

Autonomy - Independent action by businesses or other market players to adopt and/or improve a model promoted by the program.

Scale - The proportion of the potential target group that gets the goods, services and/or jobs promoted by the program.

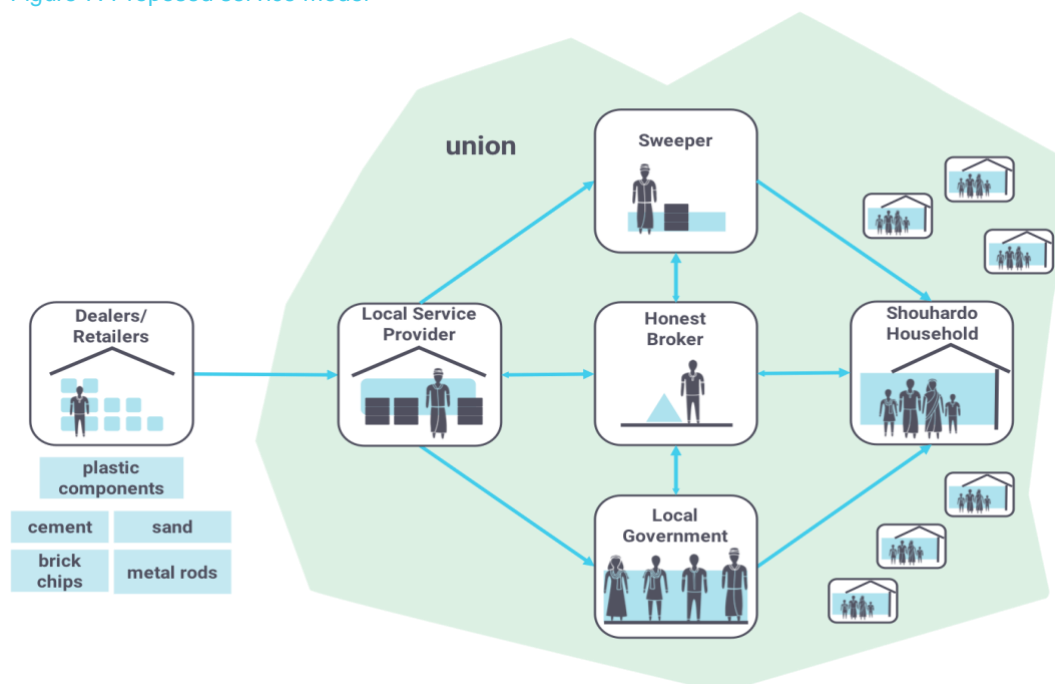
Resilience - The extent to which the market system supporting the business model can adapt to stay competitive, take advantage of new opportunities, and recover from adverse shocks.

Inclusion - The extent to which the market system is able to support equality and inclusion.

Engaging the Business Model

The proposed model below shows the interconnections between the key actors within the model. To ensure sustainability in this model, we recommend engaging with two major actors as part of piloting this approach. The first group is project staff, hired by the NGO, whose core responsibilities include addressing market failures around subsidy provision, installation failures and latrine siting at the grassroots level. These individuals are the Honest Brokers. The second group is existing market actors: latrine producers, who we recommend rebranding as local service providers; and latrine sweepers.

Figure 7. Proposed service model



Interventions

iDE recommends three interventions in the supply pathway: 1) engagement with local service providers; 2) engagement with regional service providers; and 3) engagement with sweepers. The recommended activities are summarized in Table 5.

Table 5. Recommended Interventions and activities in the supply pathway

Pathway 2: Supply	
2.1 Local Service Providers	2.1.1 Update Training Materials 2.1.2 Print Materials 2.1.3 Training of Trainers 2.1.4 Basic Training (Business, Sales, Technical, Linkages) 2.1.5 Hands-on Installation Training 2.1.6 Networking Events + Installation Awards
2.2 Regional Service Providers	2.2.1 Update Training Materials 2.2.2 Training of Trainers 2.2.3 Importance of Installation Training 2.2.4 Networking Events + Awards
2.3 Sweepers	2.3.1 Update Training Materials 2.3.2 Print Materials 2.3.3 Training of Trainers 2.3.4 Basic Training 2.3.5 Hands-on Installation Training 2.3.6 Networking Events + Awards

Local Service Providers

The key actor in the sanitation market system is the Local Service Provider (LSP). The LSP has a host of negative incentives for quality, service, and guarantees. However, iDE has significant experience in helping LSPs to see the positives incentives for quality, service, and guarantees, and changing LSPs' business practices. While it is true that LSPs have to maintain improved profits, by expanding their service delivery and their customer base, profits can be made while keeping prices for consumers balanced. See **Annex F** for a sample Business Model Canvas (BMC) for the average LSP.

iDE recommends an effective training program which starts with intensive workshop sessions and a cross learning visit, and continues with a mentorship networking program. These network meetings continue for the life of the project and are a useful way to introduce new concepts, technologies or marketing strategies, as well as to support and encourage quality service provision. The training program includes modules on four elements: technical, business, marketing and linkage skills.

Box 1. Training for Local Service Providers

iDE has trained over 1,000 latrine producers in Bangladesh using an innovative coaching approach. The approach begins within intensive workshop sessions, but then continues with quarterly networking events. These help to support service providers in overcoming business obstacles, introducing new technologies and recognizing outstanding providers. The four main goals are:

- + **Business** - Business planning, visioning, and record keeping
- + **Technical** - Product information, sanitation basics, installation best practice, and pricing
- + **Marketing** - Customer segmentation, sales planning, promotion, and group sales
- + **Linkages** - Establishing relationships with intermediary supply chain actors, MFIs, local government, DPHE, and other LPs

Regional Private Sector

In order to ensure timely and equitable delivery of input components, it is important to provide basic training for regional retailers on the fundamentals of latrine best practices. Many of these retailers do not understand components like waterseals and pits, and therefore offer incorrect advice to their consumers. This strategy also allows the program to have a wider reach within the community. We recommend holding an initial one-day, basic training for retailers followed by quarterly networking workshops with awards for positive practice for retailers selling plastic pans and piping, tin, wood and cement. These networking opportunities help to smooth out supply chain challenges, reduce incorrect advice and support local LSPs to better expand their businesses into services.

Sweeper Services

Sweeping is the term for the emptying of latrines and septic systems in Bangladesh. The word can have negative connotations, and the work is often relegated to minorities and disadvantaged populations. However, organizations such as WSUP and Wateraid have pioneered sweeper training programs which aim to bring dignity to these jobs through the use of technology (low-suction pumps) and protective gear. This strategy recommends that sweepers should be trained by SHOUHARDO III in a three day training on technologies, safety, and linkages for better business practices. Existing toolkits by WSUP and Wateraid can be utilized for this training.

There are two approaches to the management of waste: onsite and offsite. Offsite treatment requires transport and land for treatment and relies on economies of scale to treat the waste. Offsite systems are effective in densely populated areas and where public land is available for treatment. They are expensive and require a high level of ongoing training to operate and maintain. These systems struggle to function even in major cities with all the right conditions, and therefore we cannot recommend such systems for the haor and char areas. Typical onsite systems such as the BioFil are outside the price range for SHOUHARDO households. Therefore, this strategy recommends the FilTo latrine, which is a low-cost and simple onsite treatment technology. Alongside the FilTo, we recommend training sweepers in dignity-supporting approaches to sweeping and sludge burying. We also recommend linking sweepers and LSPs through regional network meetings so that LSPs can coordinate mass sweepings before the monsoon for the haor and char areas. Sweepers are sometimes migratory, and therefore this coordination role is very important for supporting the health of the entire community.

Pathway 3: Support - Catalyzing the Model

A sustainable and functional sanitation market system that can reach the needs of SHOUHARDO households is the key objective of this strategy. The team has therefore identified the need for several catalytic groups in the model. Supporting market actors -- government, finance and programs -- can all help to ensure faster uptake of servicers and sustained utilization.

Interventions

iDE recommends three interventions in the support pathway: 1) engagement with a catalytic honest broker staff member; 2) engagement with local government, financial service providers and savings groups; and 3) engagement with regional government and other key stakeholders. The recommended activities are summarized in Table 6.

Table 6. Recommended Interventions and activities in the support pathway

Pathway 3: Support	Proposed Activities
3.1 Honest Brokers (HBs)	3.1.1 Basic Training of HBs 3.1.2 Ward-wise prioritization 3.1.3 Household consultations
3.2 Subsidy, Savings and Loan Alignment	3.2.1 Subsidy, Savings and Loan Alignment Training 3.2.2 Engagement with LGs + CSOs 3.3.3 Allocation alignment 3.2.4 Household consultations
3.3 Stakeholder Alignment	3.3.1 Training and alignment of definitions 3.3.2 Quarterly network meetings

Honest Brokers

The Honest Broker is an actor **only for the project duration**. The hope is that his/her engagement will help to create a more fair environment and support latrine consumers. The name will need to be adapted if utilized. These project staff have five main roles:

1. Segmenting and prioritizing households in each union on the food security spectrum
2. Connecting eligible households with local government 'smart subsidy' support (see Box 2)
3. Connecting sweepers with households and support on safe sweeping techniques and timing
4. Connecting and supporting local service providers to provide quality services to consumers and nominating of providers for awards
5. Educating and supporting households through the process of purchasing and installing an improved latrine through household counselling sessions

Household counselling sessions aim to bring clarity to the competing narratives that can confuse households and lead to poor choices. The sessions should include a **household sanitation plan**: 1) an assessment of existing resources (including land, existing latrine materials, their future home plan); 2) collaborative development of a strategy on where to site the latrine; 3) supportive links to a local service provider for technologies and components, and to local government for smart subsidies (see Box 2) if required; and 4) a follow up visit to check on installation quality.

Honest brokers are required in this context because the areas are hard to reach. While iDE has never recommended such a system in Bangladesh before, based on our research, evidence based on

experiences in Cambodia, Nepal and Ghana³² shows that such a role has the potential to reduce risk of improper installation and backsliding

Subsidy, Savings, and Loan Alignment

Two of the four prongs of the strategy are related to subsidies, loans, and savings: partner with local government to leverage smart subsidies, and partner with savings groups and financial service providers for loans and savings plans.

Local Government Institutions

Local Government Institutions (LGIs) at the Union Parishad (UP) level have a mandate to support water and sanitation throughout the union. UPs include a WATSAN committee (many are dormant) whose role is to help support the allocation of subsidy funds for the poor. After a basic training on the importance of installation for complex environments, we would then recommend connecting WATSAN committees with HBs to coordinate and support mapping of households for subsidy provision. iDE has significant experience in confirming these allocations and ensuring that the ultra-poor and most in need receive these subsidies.

Box 2. Smart Subsidies³³

iDE estimates that over 1 million latrines are given away in Bangladesh each year through CSOs and Government programs.³⁰ Both Civil Society Organizations CSOs and LGIs are potential conduits for smart subsidies, in that they already have significant funding streams and implementation modalities for subsidies. However, iDE has evidence that the money is often spent on poor quality latrines and that subsidies don't always reach the ultra-poor.³⁰ Smart subsidies for SHOUHARDO can come from LGIs (the first choice, as these funds are already government allocated) and from the SHOUHARDO program itself. Through advocating to LGIs for the allocation of these existing subsidies, ultra-poor SHOUHARDO households can access improved latrines. It is estimated that LGI subsidies are relevant for the bottom 10% of SHOUHARDO households. A detailed analysis to segment households along the food security spectrum (see Figure 5) will help determine exactly how many households require subsidies.

As part of this solution, iDE recommends connecting CSOs with LGIs to map and identify households for subsidies. This can be done through community maps at the ward level. We also recommend consistent follow-up to ensure that the subsidy has been used to support safely **installed** latrines.

iDE defines smart subsidies as those meeting four major criteria: 1) engages the value chain, 2) uses objective criteria to target the poor, 3) requires some cost-sharing of the household for stronger ownership; and 4) ensures subsidized latrines meet or exceed the JMP 'improved' standard and are designed to last at least five years. By promoting smart subsidies, the proposed solutions will be able to reach poor households sustainably and at scale. To date, 20% of total latrine sales supported by iDE in Bangladesh have been through smart subsidies.

Financial Service Providers

Financial Service Providers such as microfinance organizations and community banks have recently begun offering financial services for latrines. However, in iDE's experience, households who avail themselves of credit often have the experience of paying off broken and poorly-installed latrines which do not meet their needs. Therefore, SHOUHARDO will need to work with FSPs to ensure that financed latrines meet all four levels of improved latrines (technology, components, installation and

³² See further details in <https://www.ideglobal.org/areas-of-focus/wash>

³³ See further details in

iDE Bangladesh (2019). Connecting existing public funds and ultra-poor consumers through Smart Subsidies. Tactic Report and iDE (n.d.) Leveraging Targeted Subsidies to Increase Sanitation Coverage Evidence from a randomized control trial in Cambodia. Policy Brief

maintenance). Most FSP models (similar to subsidy models) rely on the household for installation and construction of a latrine shelter, which could be adapted through strong engagement with the finance organizations. Several recommended FSPs include: Association for Social Advancement (ASA), BRAC, and Thengamara Mohila Sabuj Sangha (TMSS) in haor areas; and Association for Social Advancement (ASA), BRAC, Rangpur Dinajpur Rural Service (RDRS), Buro Bangladesh, Gana Unnayan Kendra (GUK) and Thengamara Mohila Sabuj Sangha (TMSS) in char areas.

Savings Groups

SHOUHARDO III already supports a Village Savings and Loans Association (VSLA) model as a savings and small loan group. iDE recommends connecting these groups to the honest brokers to help establish a strategy for households who can't afford a latrine directly, but are not eligible for subsidies as they are not in the bottom 10% of households in a ward.

Stakeholder Alignment

iDE recommends an initial training followed by quarterly meetings to ensure strong alignment between key stakeholders in the project. These may include other civil society organizations working in the area, key private sector actors, community led total sanitation (CLTS) activists, and government actors. iDE recommends offering to co-chair these network meetings with the Department of Public Health and Engineering (DPHE). The goal of these meetings is to align definitions of improved latrines, align strategies for subsidy provision, and celebrate achievements in CLTS.

Implementation Plan

Should the SHOUHARDO III program pursue a subcontract with a supporting agency during the pilot phase to support roll-out of the sanitation marketing component, several key issues around coordination should be considered. Any subcontracting agency should have as part of their core objectives provision of support to the main project staff. This will include the following key tasks: 1) identification of a strategy for passive promotion of improved products and services; 2) identification and classification of households along the food security spectrum for effective targeting; and 3) implementation of sanitation marketing activities as embedded within the wider strategy of the SHOUHARDO program and its field operations. Table 6 summarizes the connections between SHOUHARDO's existing WASH activities and those recommended in this strategy.

Table 7. Existing SHOUHARDO III WASH activities connected to SCORE strategy

Existing Intervention	Connection to SCORE Strategy
Capacity building of community health volunteers (CHVs) on basic health, hygiene and nutrition issues	Integration of key messages around latrine installation, siting and sweeping into existing capacity development materials.
Capacity building of community groups (CGs) and community support groups (CSGs) on their roles and responsibilities in improving community health systems (including WASH systems)	
Training households on good WASH practices, including separating children from animal feces and hand washing by mothers at critical times	
Implementation of demonstrations on improved low-cost household latrines	Inclusion of recommended sanitation products in these demonstrations.
Implementation of arsenic and coliform testing in existing wells	n/a

Training for Private Health Service Providers (PHSP) on reduction of harmful practices, IYCF, maternal nutrition, and sales/business for common nutrition and hygiene items	Integration of key messages around latrine installation, siting and sweeping into existing capacity development materials.
Mobilization of communities for Community-Led Total Sanitation (CLTS)	Leverage CLTS framing to ensure the four-prong strategy of leaving no one behind: 1) direct purchase, 2) savings, 3) loans, 4) subsidies. Include Honest Brokers as key advocates for CLTS and train them on CLTS approaches that can complement the BCC strategy.
Provision of support for communities to lobby for increased water and sanitation services	If SHOUHARDO deems that more households require subsidies than can be covered through LGI subsidies, program subsidies can also be leveraged. These subsidies should use a voucher system and subsidize the slab, shelter and installation, with households paying for transport and rings.

Quick Wins

iDE has selected three quick win solutions that SHOUHARDO can incorporate right away. These include 1) introduce, promote and strengthen the supply chain of the SaTo pan; 2) conduct basic training for latrine producers; and 3) incorporate four key BCC messages into existing messaging strategies.

SaTo Pan Introduction. The introduction, basic promotion, and strengthening of the supply chain for the innovative SaTo pan³⁴ represents a quick win for the SHOUHARDO team, by converting future latrine adoption in the area to an improved and functional waterseal. This has impacts on health, hygiene, smell, and practice of proper latrine flushing. The pan has been disruptive in the sanitation market in Bangladesh³⁵ and ensures that latrines cross the Joint Monitoring Program’s improvement threshold (see Table 1).

Basic Training for Latrine Producers. While a simple training on the importance of improved latrine technologies, components, installation practices, and maintenance will not by itself transform a latrine producer into a service provider, it will support the availability of better quality latrines in the SHOUHARDO working areas. This condensed training could help support latrine producers on the technical aspects of their activities. However, iDE recommends not entirely skipping the business, marketing, and linkage aspects of the holistic training, as these are critical to the sustainability of the latrine producers over time.³⁶

Integration of Behavior Change Messaging. Lastly, the simple integration and harmonization of messages can help reduce the confusion faced by households in the competing narratives of what is best behavior. All four messages can be integrated: “keep your family safe by adopting an improved latrine through direct purchase, loan or subsidy through a trained service provider;” “sweep latrines annually before the monsoon through a trained service provider;” “install your latrine in a safe location with the help of a honest broker and/or trained service provider;” and “save money by using the installed rings that you already own.”

³⁴ <https://www.sato.lixil.com/>

³⁵ iDE Bangladesh (2019). Systemic change in the sanitation market in Bangladesh: Using most significant change analysis. Tactic Report

³⁶ iDE Bangladesh (2019). Lessons in sustainable sanitation business from drop out latrine producers in rural Bangladesh. Tactic Report

Implementation Staffing

Beyond project management, design consulting, and relevant organizational supporting functions required to ensure the strong implementation of the SCORE strategy, iDE recommends hiring three types of field staff.

Technical Specialists. (2/project) This position would be situated at the district or national level and would be tasked with supporting 1) developing and refining materials (see BCC and training materials as mentioned in activity plan),³⁷ 2) troubleshooting and refining activities, 3) monitoring and evaluation.

Field Facilitators. (2/district) This position could be largely filled by existing project staff who are employed at the district level. They will support 1) training of public and private sector stakeholders, 2) managing networking and award events, and 3) overseeing demand creation.

Honest Brokers. (1/upazilla) This position would be located at the field office and would be expected to rotate from union to union, focusing on a new union each quarter, with a few activities at the upazila level. The responsibilities of this role would include 1) identify and prioritize households who are performing better on key SHOUHARDO III food security indicators in each union; 2) connecting households to subsidy and service provision; and 3) supporting households through the process of purchasing and installing an improved latrine.

Logical Framework

The following logical framework is a draft of the indicators that can be used to monitor progress within the WASH component of SHOUHARDO III. It should be noted that this is not a traditional WASH logical framework, and does not include any installations or direct implementation. These indicators and targets will need to be reviewed with the help of project management. This logframe creates targets that set up each ward, union and upazila for long-term sustainable access.

Markets are dynamic systems. The interventions included in this strategy have been designed based on uncovered insights and aim to address current market failures. However, they will need to be frequently checked and adapted. Quarterly market monitoring is recommended, using a methodology such as Most Significant Change (MSC).³⁸ MSC collects stories of change from a variety of stakeholders and then uses a participatory approach to determine those that are the most significant. Such stories can be used in conjunction with the other monitoring tools as recommended in the proposed Logical Framework.

³⁷ Some of the BCC materials will need to be outsourced to relevant firms for TV, billboards and printing of flip books. The Technical Specialist can support and oversee these external engagements. The refinement of training materials can be done inhouse.

³⁸ Davis, R and Dart, J. (2005). The 'Most Significant Change' (MSC) Technique: A Guide to Its Use <https://www.mande.co.uk/wp-content/uploads/2005/MSCGuide.pdf>

Table 8. Recommended logical framework

Intervention	Indicator	Means of Verification	Target
Goal	All members of SHOUHARDO HHs use and maintain a properly installed improved latrine	Annual survey <ul style="list-style-type: none"> Household use index Installation index Improved index 	TBD
Outcome 1: Demand	SHOUHARDO HHs are aware of the importance of proper installation and maintenance of latrines	Annual survey <ul style="list-style-type: none"> Installation knowledge measure Maintenance knowledge measure 	TBD
1.1: Behavior Messaging - Below the Line	% of SHOUHARDO HHs hearing messages at the community and courtyard level	Annual survey <ul style="list-style-type: none"> Message check 	TBD
1.2: Demand Creation - Above the Line	# of SHOUHARDO wards which have at least three touch points with behavioral messaging	Project Documents <ul style="list-style-type: none"> Message access check 	TBD
Outcome 2: Supply	ShouharDO unions have a capable local service provider and sweeper offering improved services	Annual service provider review <ul style="list-style-type: none"> Capability check 	TBD
2.1 Local Service Providers (LSP)	At least one LSP completes training in each SHOUHARDO Union	Project Documents <ul style="list-style-type: none"> Training completion check 	TBD
2.2 Regional Service Providers (RSP)	At least three RSPs complete trainings in each SHOUHARDO upazila	Project Documents <ul style="list-style-type: none"> Training completion check 	TBD
2.3 Sweepers	At least one Sweeper completes training and is active in each SHOUHARDO Union	Project Documents <ul style="list-style-type: none"> Training completion check 	TBD
Outcome 3: Support	Stakeholders align to support SHOUHARDO HHs through harmonized definitions and advocacy	Annual supporter review <ul style="list-style-type: none"> Capability check 	TBD
3.1 Honest Brokers (HBs)	SHOUHARDO HHs receive one-on-one counselling for latrine placement and completion	Project Documents <ul style="list-style-type: none"> Counselling completion check 	TBD
3.2 Subsidy, Savings and Loan Alignment	SHOUHARDO HHs receive subsidies from LGIs or NGOs	Project Documents <ul style="list-style-type: none"> Counselling completion check 	TBD
3.3 Stakeholder Alignment	Relevant stakeholders are trained and agree to follow a standard definition of improved latrines in each SHOUHARDO Upazila	Project Documents <ul style="list-style-type: none"> Training completion check 	TBD

Activity Overview

The following table outlines the recommended illustrative activities, timing, and staffing.

Table 9. Activity summary and timeline

Interventions	Units	Staff ³⁹	Year 1				Year 2			
			Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Pathway 1: Demand										
1.1 Behavior Messaging - Below the Line										
1.1.1 Draft Messages and Materials	1	TS	x							
1.1.2 Test and Revise Messages and Materials	2	TS	x				x			
1.1.3 Print Materials	2	TS	x				x			
1.1.4 Training of Trainers (xxxx and HBs)	2	TS, FFs, HBs	x				x			
1.1.5 Courtyard Sessions	3/ward	FFs, HBs, LSPs		x	x	x		x	x	x
1.1.6 Introduction Sessions with Local Elite	1/union	FFs		x	x	x	x	x	x	x
1.1.7 Demonstration Installations (Market + HH)	6/union	FFs		x	x	x	x	x	x	
1.2 Demand Creation - Above the Line										
1.2.1 Draft Messages and Materials	1	TS	x							
1.2.2 Test and Revise Messages and Materials	2	TS	x				x			
1.2.3 Print/Produce Materials	2	TS	x				x			
1.2.4 Publish/Distribute	2	TS	x	x	x	x	x	x	x	x
1.2.5 Mela Demonstrations	4/union	FFs		x		x		x		x
Pathway 2: Supply										
2.1 Local Service Providers										
2.1.1 Update Training Materials	1	TS	x							
2.1.2 Print Materials	1	TS	x							
2.1.3 Training of Trainers	1	TS, FFs, HBs	x							
2.1.4 Basic Training (Business, Sales, Technical)	1/upazila	FFs, HBs		x	x	x				
2.1.5 Hands-on Installation Training	2/upazila	TS, FFs, HBs		x			x			
2.1.6 Networking Events + Installation Awards	6/upazila	FFs			x	x	x	x	x	x
2.2 Regional Service Providers										
2.2.1 Update Training Materials	1	TS	x							
2.2.2 Training of Trainers	1	TS	x							
2.2.3 Importance of Installation Training	1/district	TS, FFs, HBs		x						
2.2.4 Networking Events + Awards	6/district	FFs			x	x	x	x	x	x
2.3 Sweepers										
2.3.1 Update Training Materials	1	TS	x							
2.3.2 Print Materials	1	TS	x							
2.3.3 Training of Trainers	1	TS, FFs, HBs	x							
2.3.4 Basic Training	1/upazila	TS, FFs, HBs		x						
2.3.5 Hands-on Installation Training	2/upazila	TS, FFs, HBs		x				x		
2.3.6 Networking Events + Awards	6/upazila	FFs			x	x	x	x	x	x
Pathway 3: Support										
3.1 Honest Brokers (HBs)										
3.1.1 Basic Training of HBs	4	TS, HBs	x		x		x		x	
3.1.2 Ward-wise prioritization	7	HBs		x	x	x	x	x	x	x

³⁹ TS - Technical Specialist; HB - Honest Broker (rotating at Union Level); FF - Field Facilitators (Upazila level staff)

3.1.3 Household consultations	100/union	HBs		x	x	x	x	x	x	x
3.2 Subsidy, Savings and Loan Alignment										
3.2.1 Subsidy, Savings and Loan Alignment Training	2/upazila	TS, HBs	x				x			
3.2.2 Engagement with LGIs and CSOs	1/union	HBs, FFs		x	x	x	x	x	x	x
3.3.3 Allocation alignment	50/union	HBs		x	x	x	x	x	x	x
3.2.4 Household consultations	50/union	HBs		x	x	x	x	x	x	x
3.3 Stakeholder Alignment										
3.3.1 Training and alignment of definitions	1/upazila	TS, FFs		x						
3.3.2 Quarterly network meetings	6/upazila	FFs			x	x	x	x	x	x

Annexes

A	HEAR Phase Slideck
B	HEAR Summary Report
C	CREATE Phase Slidedeck
D	CREATE Phase Report
E	Product Installation Guidelines
F	Latrine Service Provider Business Model Canvases
G	Interview Guidelines (HEAR and CREATE)