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LEARNING BRIEF:

Human Centered Design Approaches for Safe and Sustainable Latrine Construction and Utilization in Takunda Target Communities

DECEMBER 2022

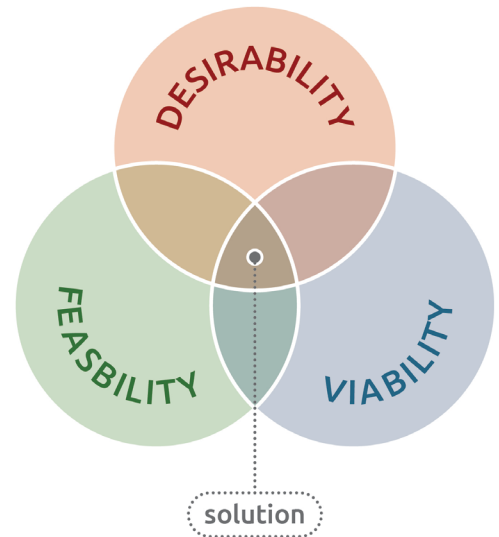
OBJECTIVE

Takunda, a USAID-funded, multisectoral, Resilience and Food Security Activity in Zimbabwe, is using a process of Human-Centered Design (HCD) to strengthen safe and sustainable latrine construction and use in four rural districts of Zimbabwe (Buhera, Chivi, Mutare, and Zaka).

Unique within the region, Zimbabwe has had a [standardized latrine design since the 1980s—the Blair Ventilated Improved Pit Latrine](#) (BVIP). The latrine's purposeful and safe design promotes airflow to remove odors and trap flies.

BACKGROUND

Human Centered Design (HCD) is a creative research approach which works alongside communities to understand barriers and enablers to particular actions and behaviors. This helps us better understand the true problems and to design potential solutions. The approach follows three phases: HEAR, CREATE, and DELIVER. It seeks solutions that are desirable to end users, technically feasible, and viable in the system. This brief has been written near the end of the CREATE phase. Learn more about HCD at hcdforwash.org.



HEAR PHASE

For the HEAR phase (May to June 2022), the Takunda HCD team conducted “Deep Dive” research in five villages with varying sanitation coverage. This included two villages in Buhera, one village in Mutare Rural, and two villages in Zaka district.

The research included participatory and unstructured research activities focused on hearing people’s stories. These included focus group discussions using journey mapping, dream latrine, and sanitation laddering activities (4 groups total with separate activities for women and men), village transect walks (5 walks total), supplier interviews (6 interviews), and household interviews (17 interviews).



A. Latrine Construction Motivators

The research identified four motivators for households to construct latrines.

- 1. Shame** - Households who have been embarrassed to let relatives visit and so construct a solid and reasonable latrine—typically double squat latrines. Money comes from the general household budget—often in a rush—before relatives arrive.

2. **Replacements** - Households who have had a latrine in the past that collapsed or became full. They recognize the value of latrines and understand how it enhances household safety. They often construct double squat latrines. The money comes from the general household budget but might take time to save.
3. **Prestige** - Households who wish to have the best of the best. They frequently construct unsafe latrines with windows, doors, and verandas. Money is not a factor.
4. **Community momentum** - Households in communities with strong social cohesion, leadership, and successful community mobilization. They construct a single squat latrine for the first time and save pennies to cover the cost.

B. Technical Findings

The standardized Blair Ventilated Improved Pit (BVIP) latrine is widely accepted by the majority of rural people. Yet the wealthy consider the BVIP “old-fashioned,” while the extremely poor regard it as “too expensive.”

Most households are not following the government approved upgradable approach, which promotes improving basic, safe latrines over time. Rather, many households build the latrine in stages from the bottom up (pit, slab, shelter, roof, pipe, fly screen). Therefore, many latrines remain unfinished, lacking components integral to the latrine’s safety. Fully subsidized latrines are more likely to be constructed completely but subsidized cement is frequently used for other purposes than latrine building¹.

Introduced ten years ago, the low-cost version of the upgradable BVIP has been deemed “unsafe” by many users and builders who have seen them collapse, particularly in the wake of increased cyclones during the rainy season. This is due to a combination of poor-quality cement, poor construction, and a lack of clear design standards.

Most households desire to have a “bullet-proof” cement--plastered latrine with many bags of cement and a solid roof. All interviewed households could provide bricks for the shelter but described access to cement as the largest challenge and cost. There is little technical knowledge of cement quality and mixture ratios, only a perception that more is better. Low-cost materials, such as thatch and mud, are not considered resilient enough for cyclones, daily use, insects, and animals.

Most households dig their own pits without discussing their installations with an Environmental Health Technician (EHT) as mandated in the current national sanitation strategy. This risks building latrines on unsafe sites, and against prevailing winds.



¹ Two subsidy models have been trialed. One is complete subsidy, which are most likely to be completed latrines. The second is a cement subsidy, but many households end up using the cement for other purposes. Often NGOs prefer the second option as it is cheaper and hypothetically should lead to more ownership of the latrines but this is not often the case.

Cement roofs are always cast after the latrine has been built (in alignment with initial guidance), and **this has led to many latrines being constructed without roofs**. Additionally, roofing materials are often removed to be used in burials of family members or relatives.

Many households are unclear on what to do once the latrine is full and unsure about processes to decommission latrines and reuse slabs.

C. Desirable and Challenging Features

Many households are purchasing **fiberglass seats** (locally known as chambers) for their latrines, motivated by elderly relatives who struggle to squat and a desire for prestige. These seats are often poorly manufactured and could benefit from design support.

Some **women and girls desire a door** on the latrine that can lock from the inside to keep male relatives from barging in while they bathe.

Nearly everyone described challenges with squat hole shapes, as they are often cast incorrectly. Builders are unclear on the reasons and motivations for the recommended shape and therefore do not have molds. This leads to frequent soiling of the latrine.

Almost all households struggled to obtain (news)paper for wiping. Many households have been using newspapers for wiping, but as newspapers are no longer readily available, wiping materials have become a challenge. Instead many people are using leaves, corncobs, and schoolbooks as wiping paper

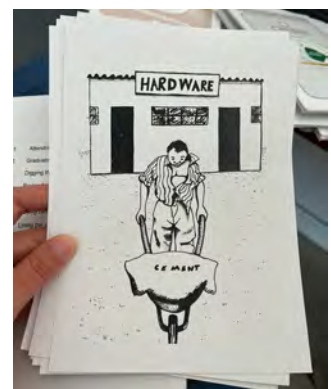
While handwashing was acknowledged as important, none of the observed latrines had functional handwashing systems. Tippy taps are seen as temporary, and households are not interested in “wasting a good bucket” by leaving it to sit in the sun next to a toilet.

The BVIP must remain very dark inside to ensure flies remain trapped in the vent-pipe. The **research identified no concerns with the lack of light**—despite multiple probes and conversations—however, broken roofs are often not replaced, perhaps because of the increased light their absence offers.

D. Findings on Existing Guidance

The existing Participatory Health and Hygiene Education (PHHE) materials have fostered unintended behaviors and practices. For example many households cover their squat holes, prioritize cement in building, and only consider a latrine completed if it is fully plastered—all related to images in the PHHE materials.

The early BVIP instruction manuals (1987-1995) are still cherished by builders and environmental health officers/technicians. These early manuals are noted as clear, concise, and simple. Subsequent manuals are described as confusing, wordy, and unspecific.



CREATE PHASE

For the CREATE phase (July to November 2022), the Takunda HCD team began prototyping and testing ideas to address barriers and challenges identified in the HEAR phase. All of the CREATE activities were done in collaboration with the relevant district-level Ministry of Health and Child Care teams.

1. Review and Design Complementary Behavior Change Tools

The team designed and tested complementary communication tools that educate on latrine safety and the most common problems with BVIPs. They were designed to supplement existing Participatory Health and Hygiene Education (PHHE) training materials and can be used with community members, sanitation action groups, youth clubs, savings groups, builders, and suppliers. The tools include: 1) an animated video and poster on latrine safety aspects; 2) a set of game cards identifying unsafe latrines; 3) a revised set of sanitation option cards; and 4) a latrine inspection checklist.

2. Design Capacity Strengthening Tools for the Private Sector

The team developed and tested two tools to strengthen knowledge of private sector actors such as builders, suppliers, and hardware. The tools included: 1) a poster series on latrine components; and 2) a business model canvas to strengthen the services of latrine builders.



3. Update and Clarify Latrine Designs and Related Technical Documentation

A key finding of the HEAR phase was the **lack of clarity around the standard latrine designs and opportunities to promote more resilient and desirable options**. To address this, the team piloted three versions of the BVIP with minor adaptations: Basic, Standard, and Prestige. The team also drafted technical materials to align with the well-loved manuals from the 1980s and 1990s.

- The Basic version is low-cost and includes 3-bags of stronger 42.5N cement to support those on a strict budget.
- The Standard version is medium-cost and highly resilient, using 5-bags of cement. It is designed for longevity and climate risks.
- The Prestige version is a double latrine for households where cost is no issue. It includes a screen door, toilet seats, tiles, paint, and rainwater collection. The team is also piloting innovative ideas such as tinted windows and solar-powered motion-sensor lighting.



DELIVER PHASE

During the DELIVER phase (December 2022 onwards), the Takunda team plans to begin using the materials in existing and new interventions.

1. Integrating Complementary Behavior Change Tools in Community Engagements

The first strategy involves integration of the newly designed behavior change communication tools into ongoing community triggering and sanitation action group training alongside bundled activities with youth clubs, savings groups, health clubs, and care groups.

2. Reimagining the Role of Latrine Builders to Promote and Construct Improved Latrines

Latrine builders are seen primarily as contractors and not sanitation advocates. The team plans to integrate a business module into latrine builder training focused on four areas: business practices, linkages, and marketing, alongside technical skills.

3. Reinvigorating the Local Private Sector to Supply and Encourage Improved Latrines

Local latrine suppliers at growth points and town-centers are not actively part of the sanitation market in rural Zimbabwe. The team will pilot quarterly supplier check-ins helping to promote stable supply chains of improved latrine components. These check-ins rely on the newly designed behavior change communication tools, posters sharing the required materials for purchase for each latrine type, and the newly designed BVIP manuals.

4. Educating and Fostering Relationships with the Private Sector to Improve Components

The final strategy involves education on latrine safety and relationship strengthening with private sector actors to help build capacity and improve supply chains of improved and appropriate latrine components. One potential activity is to host a private sector sanitation forum. Additionally, the team will explore opportunities to partner with cement manufacturers, hardware distributors, plastics manufacturers, and paper manufacturers. Their current designs are influenced by customers' demands and disregard the need to maintain the safety features of the BVIP.

All four of the DELIVER phase strategies will be underpinned by an advocacy and engagement strategy with relevant local, regional, and national level actors—most notably the Zimbabwe Ministry of Health and Child Care. It is hoped that if these strategies are sustainable and effective, they will be adopted into national sanitation strategies, standards, and policy.

ABOUT PRO-WASH

Practices, Research, and Operations in Water, Sanitation, and Hygiene is an initiative funded by USAID's Bureau for Humanitarian Assistance (BHA) and led by Save the Children. PRO-WASH aims to provide support to implementing partners in order to strengthen the quality of WASH interventions through capacity strengthening, knowledge sharing and applied WASH research opportunities.

prowash@savechildren.org

fsnnetwork.org/PRO-WASH

ABOUT TAKUNDA

Takunda, meaning “we have overcome” in Shona, is a \$55M five-year (October 2020 to September 2025) [USAID/BHA-funded](#) Resilience Food Security Activity in Zimbabwe. The program is being implemented by [CARE](#) together with partners: Bulawayo Projects Centre (BPC), Environment Africa (EA), Family Health International (FHI 360), International Youth Foundation (IYF), and Nutrition Action Zimbabwe (NAZ).

Walter Mwasaa, Chief of Party

Walter.Mwasaa@care.org

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This learning brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the PRO-WASH Award and do not necessarily reflect the views of USAID or the United States Government.

