



Global Communities Case Study

A Market-based, Pro-poor Approach to Rural Sanitation



Introduction

This case study describes the process carried out in Ghana by Global Communities to create an enabling environment for a market-based, pro-poor approach to rural sanitation to address the challenge of open defecation in rural areas and sustaining the behavior of not defecating in the open after a community has been verified as Open Defecation-Free (ODF). This initiative started in 2016 and is an ongoing effort between the USAID WASH for Health project implemented by Global Communities; Duraplast, a Ghanaian plastics manufacturing company; the Government of Ghana; and other rural sanitation stakeholders. The purpose of this learning brief is to describe the initial three-year process (to date) to create an enabling market environment for rural sanitation and to capture emerging lessons.

Key Take-Aways

- Global Communities' role was to enable, facilitate and engage the rural sanitation market
- Global Communities facilitated links between rural communities and Duraplast and worked with the government to ensure accountability of the private sector
- Global Communities worked directly with Duraplast and supported the development and ongoing viability of the Digni-Loo latrines
- This is an ongoing process and Global Communities is continuing to learn what works in the development of a market-based approach for rural sanitation
- This approach is a major paradigm shift for Community-Led Total Sanitation (CLTS) approaches and related government programs and policies

Emerging Lessons

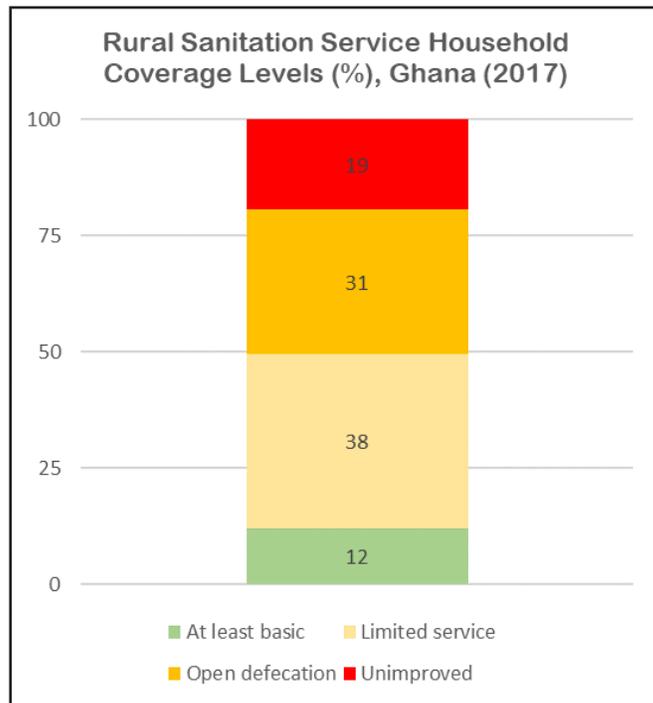
- The role of an NGO as an engager, facilitator and enabler for a market-based approach appears to have more promise for scale and sustainability than the traditional role of NGOs directly implementing a sanitation marketing approach.
- Disaggregating the market by wealth and ability to pay allows the market to have different strategies and conditions for (1) the sector of the populations that can afford to pay for the products, (2) the segments that need to have access to credit to purchase the sanitation products, and (3) segments of the population that need subsidies.
- A “game-changer” in this process was the Government of Ghana’s decision to reform its CLTS strategy to allow and promote targeted subsidies for the poorest households who could not afford to purchase a durable and hygienic latrine, and who are part of a community that has been verified as ODF.

The Development Challenge

1. Negative impact on health as a result of high rates of open defecation.

Open defecation in rural areas has a negative impact on diarrheal disease, child deaths, and malnutrition. The WHO estimated that in 2016 more than 4,700 Ghanaians died from diarrheal disease and more than 320,000 years of healthy life were lost.¹ Nineteen percent (19%) of children under five are stunted and in the Northern Region where the WASH for Health project is working, over 33% of children are stunted. Of the total rural population in Ghana of about 13 million people, only 12% have access to basic sanitation and 31% of the rural population are defecating in the open² (see figure right).

Access to safe sanitation services and products like latrines can cut the prevalence of open defecation, thereby reducing diarrheal risks and possibly preventing 5.5% of infant deaths globally.³ Stopping open defecation also reduces the prevalence of malnutrition and stunting by reducing incidence of diarrhea and intestinal diseases that come from indirectly ingesting fecal bacteria.⁴ Community-Led Total Sanitation (CLTS) is a behavior change intervention that seeks to change individual behaviors to stop defecating in the open and create community norms regarding the unacceptability of open defecation anywhere in the community. Facilitation of latrine construction is one facet of this intervention: global evidence suggests that the construction and use of household latrines enables households to stop defecating in the open and sustains that behavior over time.⁵



2. The CLTS approach has sometimes resulted in the construction of poorly built latrines and a return to open defecation by the poorest households.

Alberto Wilde, the Global Communities Chief of Party for the USAID WASH for Health program in Ghana, observed that improved latrines in ODF communities were often in disrepair. The latrine platforms and superstructures were originally made using local materials such as bamboo and mud. This was in line with CLTS theory, which emphasizes that all sanitation services should be funded by the households and built with locally available materials without any subsidy. But in practice, communities were losing their ODF status because they could not constantly maintain their latrines built from cheap, short-lived materials⁶ (see image right). Sustainability issues were more prevalent among households that were considered poor or vulnerable. Even among CLTS-triggered communities, households generally prioritized their own food security and education over their sanitation services. This meant that poor and vulnerable households had little time



¹ WHO Global Health Observatory data repository, 2018.

² Progress on household drinking water, sanitation and hygiene 2000-2017. Special focus on inequalities. New York: United Nations Children's Fund (UNICEF) and World Health Organization (WHO), 2019.

³ Prüss-Ustün, A., Wolf, J., Corvalán, C.F., Bos, R., & Neira, M.P. (2016). Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks.

⁴ Frempong, Raymond Boadi, and Samuel Kobina Annim. "Dietary Diversity and Child Malnutrition in Ghana." *Heliyon*, vol. 3, no. 5, 2017, doi:10.1016/j.heliyon.2017.e00298.

⁵ Hartler, Miriam and Mosler, Hans Joachim. "Determining the Effectiveness and Mode of Operation of Community-led Total Sanitation: The DEMO-CLTS Study" 2018.

⁶ USAID, 2018. An Examination of CLTS's Contributions toward Universal Sanitation. Washington, DC, USAID Water, Sanitation, and Hygiene Partnerships and Sustainability (WASHPaLS) Project.

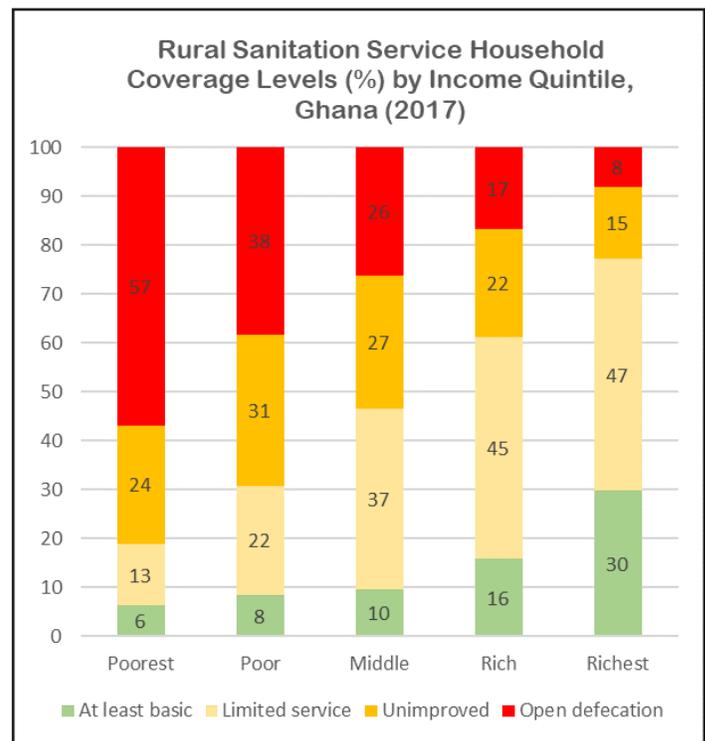
or resources to maintain latrines, and without any subsidies these communities would slip back into open-defecation practices. The sustainability issues that affect the poorest households affect the entire community as well: the CLTS solution requires that all households end open defecation, otherwise fecal bacteria can spread throughout the community and the resources used to achieve ODF status are wasted. It costs roughly 100 USD to build a traditional latrine in Ghana, a cost that poor and vulnerable households cannot afford. A survey conducted in Greater Accra showed that even in relatively wealthier urban areas, only 50% of families were prepared to take a loan to build a latrine.⁷ The government also recognized that invested time, land space, and unit costs were all comparatively higher for the poor. The WHO/UNICEF JMP Global Report shows that 57% of the poorest wealth quintile (bottom 20%) of the rural population in Ghana was defecating in the open, compared to 8% of the richest rural population quintile (see chart right).

3. Lack of Availability of Durable, Hygienic and Affordable Latrines in the Market

A key reason for the lack of availability of latrines and other sanitation products for the rural population is a weak, almost non-existent rural sanitation market. It is expensive to build a toilet in Ghana because there is no existing supply chain to provide building materials or sanitation products to rural communities (see image below). Key market barriers found globally but also reflective of the context in Ghana included:

- Lack of a private sector market for rural sanitation products and services;
- Existence of government policies that created barriers for rural sanitation products and services provided by the private sector;
- Lower priority accorded to sanitation by local leaders, communities and households resulting in low demand;
- High rates of poverty that create constraints for buying latrine products;
- Lack of credit for customers or entrepreneurs; and,
- A challenging geographical context – sparse population, challenging terrains and bad roads.

⁷ Quansah, K.; Deputy Director at the Ghana Ministry of Sanitation and Water Resources. (July 23rd, 2019) Personal interview.

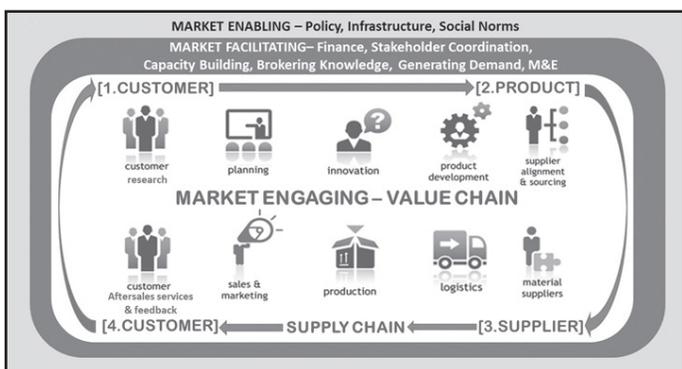


Pits dug in loose soil must be encased with walls to prevent cave-ins and flood damage. Traditionally, these walls are made from concrete cinder-blocks, and the installation process is expensive and requires specialized labor, tools, and time.

What was the Global Communities Proposed Solution? Taking a Market-based approach.

What Do We Mean by a Market-based Approach?

For the purposes of organizing this case study, we used a working framework that was developed by the Water and Sanitation Program (WSP) of the World Bank (see figure right)⁸ and provides an outline and definition of market-based activities (see box right). These activities are placed into three categories: 1) market enabling; 2) market facilitating and 3) market engaging.



The Global Communities WASH for Health Project Market-Based Approach for Rural Sanitation in Ghana

Market Engaging

Global Communities took a market-based approach by working with the entire eco-system of the market with various actors and factors that were both interdependent and interactive. This included working with the government, the private sector, communities and other development partners on a wide range of market engagement activities.

⁸ Going beyond mason training: enabling, facilitating, and engaging rural sanitation markets for the base of the pyramid. Dumpert and Perez, Practical Action Publishing, Waterlines, 2015

Market Activity Definitions

Market enabling

- **Creating and enforcing policy.** Creation and enforcement of laws and legal guidance that have an impact on the market (e.g. health laws, technology specifications/standards, certifications, subsidies, vouchers, tariffs, taxes).
- **Developing infrastructure.** Development and maintenance of transportation, utility, and information conduits (e.g. roads, railways, power lines, and information and communication networks).
- **Social normalizing.** Influencing the knowledge, practices, and experience of a population with respect to sanitation behaviors.

Market facilitating

- **Financing.** Creating the availability of funds to market actors (e.g. via microfinance loans, extended payment periods, revolving funds).
- **Coordinating stakeholders.** Organizing collaboration between market actors.
- **Capacity building.** Increasing market actors' abilities to perform core functions, solve problems, and define and achieve objectives.
- **Brokering knowledge.** Developing relationships and networks among producers and users of information.
- **Generating demand.** Targeted marketing programs/campaigns to drive general awareness and interest in sanitation products and/or services.
- **Monitoring and evaluating.** Tracking and measuring performance, including quality control.

Market engaging

- **Conducting customer research.** Investigating the needs, preferences, opinions and behaviors of consumers.
- **Planning.** Determining and balancing aggregate demand and supply to develop a course of action which best addresses market gaps.
- **Innovating.** Researching and developing new or modified sanitation products/services.
- **Developing products.** Piloting, evaluating, and commercializing (including developing market strategies) sanitation products/services.
- **Sourcing and aligning suppliers.** Identifying and coordinating material suppliers.
- **Supplying materials.** Supply of component goods (e.g. concrete, reinforcement bars, toilet pans/bowls).
- **Coordinating logistics.** Transportation of materials from suppliers to producers, and finally to customers.
- **Producing.** Assembly of materials into sanitation products.
- **Sales and marketing.** Implementation of the marketing strategy, including collection of orders and payments.
- **Aftersales services and feedback.** Range of aftersales services provided to assist customers including: siting, installing, training, maintaining, upgrading, and removing and disposing waste. It also includes the collection of customer information, such as satisfaction and product use.

In order to make household latrines more accessible, Global Communities, under the WASH for Health program, designed the Digni-Loo, an affordable, durable and reusable plastic latrine slab that is both visually appealing and easy to install and maintain. Global Communities identified the Ghanaian company Duraplast Ltd. as an ideal partner for the Digni-Loo based on their specialization in the production of un-plasticized Polyvinyl Chloride (uPVC), Polyvinyl Chloride (PVC) and High-Density Polyethylene (HDPE) Pipes and Fittings—products used in creating the Digni-Loo (see box on Digni-Loo on next page).

Priced at approximately 81 USD, the Digni-Loo costs approximately 80% less than traditional latrines and provides a more durable and hygienic product than traditional latrines. Once purchased, a household only needs to dig a pit near their home, install the latrine (which has an adjustable plastic lining to reinforce weak pits), attach the plastic vent pipe, and construct privacy walls. When a pit is full, the latrine slab is easily removable; the hole is covered and the slab is re-installed in a new location. It requires very little water and is easy to keep clean (see photo right).

The process of developing the Digni-Loo took roughly two years, and market engagement strategies were implemented at every phase of the development process. Global Communities did the early product design of the Digni-Loo, building on practical experience while implementing the USAID WASH for Health rural sanitation component using a CLTS approach, as well as the experience of other CLTS organizations. Formal consumer research was not carried out but a more focused, human-centered design process was undertaken. Global Communities developed the product as they were testing it with communities and households. They conducted a pilot project that provided them with the necessary feedback from the households to make modifications and improvements as needed. Factors monitored were the presence of smell, insects, how easy or difficult it was to clean, any deflection on slab beyond the pre-established parameters, blockage of any sort, and amount of water required to clean, and a focus group was used to determine the most attractive color.

The Global Communities team used the planning process to innovate and develop additional attachments to the Digni-Loo like the toilet seat, which was meant to target elderly demographics. Once the Digni-Loo was ready for market, Global Communities was able to rely on Duraplast for many of their logistical needs, including sourcing and aligning suppliers, supplying materials, and coordinating logistics, as well as producing the Digni-Loo units themselves. For the moment, Global Communities is leading the sales and marketing strategy with the goal of having Duraplast take over this role. Global Communities continues to implement aftersales services and collect feedback from Digni-Loo households through their Behavior Change Communication and M&E programs.

Market Enabling

Global Communities worked with the Government of Ghana’s Ministry of Sanitation and Water Resources (MSWR) to create policy guidance, regulations and technology standards and specifications that would have an impact on the rural sanitation market. As the evidence showed that ODF slippage (returning to open defecation practices) was most frequently practiced by the poorest households who could not afford to build latrines that were durable and hygienic, Global Communities advocated for a market-enabling approach that included subsidies for the poorest 20% of households. There was no official policy that prevented the MSWR from subsidizing sanitation, but they were influenced by global CLTS theory and practice that rejected the use of subsidies—an approach that at the time (2016), was supported by key CLTS funders and implementers. *The Government of Ghana Guidelines for Targeting the Poor and Vulnerable for Basic Sanitation Services in Ghana* benefited from technical assistance from Global Communities and was developed through a consensus process with key rural sanitation sector stakeholders including UNICEF, WaterAid Ghana, USAID, the World Bank, World Vision, and other donor and implementing organizations. The guidelines were designed to achieve 100% ODF status and equitable and adequate access to sanitation and hygiene for all by 2030, with special emphasis on the poor and vulnerable. These guidelines include guidance on how to target subsidies for poor and vulnerable households to construct latrine facilities. Qualifying households will have already reached ODF status as a result of CLTS triggering. Support could also be given wholesale to communities that have specific technical challenges such as difficult terrain. The subsidies themselves could



Cover of *The Government of Ghana Guidelines for Targeting the Poor and Vulnerable for Basic Sanitation Services in Ghana*

THE DIGNI-LOO AS A PRO-POOR SOLUTION

Compared to traditional concrete platforms, the Digni-Loo is cheaper, lighter, more sanitary, and easier to install and maintain; it does not require any specialized labor nor any special tools. The Digni-Loo is built from HDPE plastic as opposed to concrete, and the durable latrine platform has been tested to support 1,000 kilograms of weight.

The Digni-Loo's plastic material is easier to clean than porous concrete platforms; a spritz of water to 'prime' the latrine hole will keep waste from sticking to the surface. If used properly, a simple flush of a small quantity of water will remove all waste. Another sanitary innovation is the lid attached to the pit hole: a counterweight keeps the Digni-Loo pit sealed when it is not in use, and prevents flies from entering the pit. Also, those who own concrete latrines are expected to seal their pit with a wooden board or similar material, which can become contaminated with fecal bacteria which is then transferred to users' hands. The Digni-Loo's lid seal removes the potential for human error and requires no manual effort, thereby reducing the amount of fecal contamination from flies and from handling the seal.

Every Digni-Loo comes with a nine-foot tall PVC vent pipe attachment which carries odors and gas out of the pit and reduces odors that escape into the latrine.

One Digni-Loo unit sells at retail for roughly 81 USD, including the latrine platform and the vent pipe, which is

cheaper than conventional concrete latrine platforms owing to the cost of materials and labor. The Digni-Loo is also more sustainable than concrete platforms; the platform's 33-pound frame allows households to easily reuse the Digni-Loo's several pits. When a pit becomes full, the household can lift the platform out of the ground with little effort and place it within a new pit. Assuming consistent use and proper care, the platform is currently expected to last 20 years.

The Digni-Loo is also easy to install and requires no specialized labor or tools, and the Digni-Loo is much easier to install in communities with loose soil. Pits dug in loose soil must be encased with walls to prevent cave-ins and flood damage. Traditionally, these walls are made from concrete cinderblocks, and the installation process requires specialized labor, tools, and time. But with the Digni-Loo it is much easier to assemble these walls, because households can equip their Digni-Loo with attachable drum-walls that attach in seconds and require no specialized skills.

For households with elderly or physically challenged members, the Digni-Loo comes with an attachable toilet seat. The seat rests firmly on the platform's footrest, so the toilet itself does not shift while you sit on it. Like the platform, the toilet attachment is easy to clean and maintain with a retail price of 26 USD.



The Digni-Loo toilet seat attachment fits on the platform and does not shift as you sit on it. To install, simply slide the toilet into place on the platform.



The Digni-Loo platform, from above. The plastic material and smooth edges allow for quick, easy cleaning.

be used to support the cost of the latrine platform, the latrine superstructure, the cost of labor, and the cost of equipment and tools. There were six potential latrine technologies that the Ghanaian government would subsidize for poor households, and one of them was the Digni-Loo.

Global Communities and Duraplast Ltd. developed and tested a series of prototypes, and the newly developed Digni-Loo, and worked to get the Digni-Loo approved through the Technology Applicability Framework (TAF) which is the purview of the Ministry of Sanitation and Water Resources. This was a thoughtful process organized by the MSWR which included the majority of stakeholders and implementing partners in the sanitation sector, along with donors and those from academia. A series of tests were also conducted by the Ghana Standards Authority, giving the Digni-Loo all the required certifications to be sold across Ghana.

The CLTS approach used by Global Communities is fundamentally an effort to change community behaviors and create community norms which demonstrate that practicing open defecation is not acceptable. In addition, working with its partner The Manoff Group, the WASH for Health project designed and implemented a structured behavior change campaign that focused on changing behaviors at the household level. The WASH for Health project also worked closely with the local government WASH team to build behavior change capacity in order to sustain and scale up efforts to create demand for basic latrines. One of the criteria for a community to become ODF-verified is that each household needs to have a basic latrine that meets WHO/UNICEF global standards for basic latrines. Combined, these behavior change approaches create a general (not product-specific) demand at the household level for latrines, and the market can then try to meet the demand.

Market Facilitating

In coordination with market-enabling policy changes, Global Communities implemented market-facilitating mechanisms to distribute the Digni-Loo units, and constantly receive feedback from all levels, including from the government, Duraplast, retailers, and beneficiaries. Global Communities also built the capacity of their supply chain by training market actors at all levels by introducing and promoting a new product and opening a new market for distribution.

The Global Communities team initially found that none of the private sector actors were willing to invest in marketing a latrine because they did not know how to market sanitation to low-income communities. To jumpstart private sector engagement, Global Communities began a distribution network with donor support to open the market and make the product known, especially to those communities that need

the most assistance. Part of this strategy was setting a fund aside and procuring several Digni-Loos that were distributed to pre-identified and trained micro-entrepreneurs. Global Communities distributed a few Digni-Loos (three to five units) with each distributor, provided them with some basic training on how to promote, sell and install the units, along with some financial literacy training, and gave them a 10% profit on their sales. Global Communities also created a revolving fund to help set up the micro-entrepreneurs at the district level. Very quickly the entrepreneurs realized that the product was selling and that they were earning remarkable profits. These sales jumpstarted their capacity to order more Digni-Loo units.

Global Communities is generating a demand for the Digni-Loo by working with the government and working with communities. The Government of Ghana's pro-poor guidelines commit to a strategy that the poorest of the poor will be able to procure a latrine at no cost. When households obtains a Digni-Loo, other households that can afford to buy a latrine are also encouraged to buy a Digni-Loo as well. Global Communities is increasing demand via behavior change strategies and will soon launch a television campaign on national television.

Results to Date

As of June 2019, more than 18,000 Digni-Loo units were sold over a span of roughly 18 months. The majority of units sold have been bought by the Government of Ghana's Community Water and Sanitation Agency in partnership with USAID. These latrines will be installed as subsidies for poor households as planned in the MSWR's pro-poor guidelines. Other organizations that purchase Digni-Loos include Peace Corps, USAID-RING, local governments in Ghana, and NGOs like World Vision International.

Still, the Digni-Loo is not only a pro-poor solution. At the current retail price, many non-poor Ghanaian households are able to purchase the Digni-Loo for themselves. As of June 2019, hundreds of Digni-Loos have been sold to individual consumers, and hundreds more have been installed for poor households as part of the Wash for Health program at Global Communities.

An emerging and promising market has been created for a sustainable market-based solution to rural sanitation needs for sustainable, durable, affordable and hygienic latrines.

Some Challenges Ahead

Government-subsidized sanitation facilities such as the Digni-Loo provide an invaluable benefit to the community and are an effective and equitable approach to providing services for the poorest, but this service is only valuable if the facilities are used correctly. If the government provides facilities to untriggered

communities, there is a risk that these facilities are used improperly and that resources are wasted. Even worse, providing sanitation facilities to untriggered communities could compromise the CLTS process by losing the communities' trust in the benefits of sanitation. It will be important to continue advocating that the Government of Ghana disperses these subsidies responsibly and maintains the prerequisites for CLTS education set in the guidelines.

The Digni-Loo latrine is only a platform. It currently offers no solution for households that cannot afford materials for a durable superstructure around the latrine, which includes walls, a door, and a roof. Global Communities is currently developing a solution that complements the Digni-Loo, but as of now these superstructures are made from local materials which vary in their durability. However, Global Communities has observed that households which have a Digni-Loo generally invest more in their latrine's superstructure.

It has been reported in some communities that the Digni-Loo pits are filling up twice as fast as expected. While communities are encouraged to dig pits that are between two and three meters deep at a minimum, in communities with sandy or unstable soil the household is not able to dig more than 1.5 meters deep. Drum attachments produced by Duraplast allow households to dig stable, deep pits in sandy soil, but they incur a separate additional cost that households and implementing organizations may not be able to pay.

Disaggregating the market by wealth and ability to pay allows the market to offer different strategies and conditions for the varying sectors of the populations that either (1) can afford to pay for the products, (2) need to have access to credit to purchase the sanitation products or, (3) need public financial support (subsidies). Households who can afford to pay have started purchasing the Digni-Loo latrine in the market, but access to loans for households who cannot pay cash up front is still limited. Global Communities is exploring possible partnerships with micro and SME financial institutions to introduce a financing mechanism (loan scheme) that could be affordable to some beneficiaries.



Acknowledgements

This knowledge product was written by John Borkowski, Georgetown University School of Foreign Service, and Eddy Perez, Technical Director for WASH for Global Communities. The case study is based on interviews with Alberto Wilde, Chief of Party for the USAID WASH for Health program, Abdul-Nashiru Mohammed of WaterAid, Hemant Nesarikar of Duraplast, and Attah Arhin of CONIWAS. Reviewers include Marjan H. Ehsassi, Alberto Wilde, Liz Calvey Zeller, Ashleigh Mullinax and, Sarah Goddard. For more information on this work, contact Alberto Wilde (awilde@globalcommunities.org) or Eddy Perez (eperez@globalcommunities.org).

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