



## Research Brief

November 2019

# What Makes Ghanaians More Likely to Stop Open Defecation and Build Latrines?

## Background

This brief is based on the research conducted in collaboration with Global Communities by Miriam Harter and Hans-Joachim Mosler and published by the Swiss Federal Institute of Aquatic Science and Technology (known by their Swiss acronym as EAWAG). The research was funded by the Bill & Melinda Gates Foundation. The full report (*Determining the Effectiveness and Mode of Operation of Community-Led Total Sanitation: The DEMO-CLTS Study* by Drs. Miriam Harter and Hans-Joachim Mosler) includes findings from studies in Mozambique and Cambodia. This brief focuses on the findings from the studies in Ghana. This knowledge product is developed by Global Communities in order to make the findings and recommendations of the full report more accessible and actionable by the Government of Ghana Ministry of Sanitation and Water Resources (MSWR) as well as by other development partners working in rural sanitation in Ghana.

The Government of Ghana MSWR has basic sanitation guidelines to achieve 100% open defecation-free (ODF) status and equitable and adequate access to sanitation and hygiene for all by 2030, with special emphasis on the poor and vulnerable. This knowledge product is part of the USAID-funded WASH for Health program to provide sustainable access to dignified, safe, and improved water supply and sanitation, and to educate people on the knowledge and behaviors necessary to live a healthy lifestyle. In particular, the WASH for Health program targets rural communities where these services are needed the most and helps achieve the goals of the MSWR in Ghana

### Key Findings

- Factors that determine the success of CLTS interventions are attendance rate of participants during the triggering event, the number of community leaders participating in the triggering event, whether participants believed they would receive rewards like installation of water wells and materials for toilets, and the number of follow-up visits provided by facilitators weeks after triggering.
- Households that socially identify strongly with their communities are more likely to construct latrines after CLTS interventions.
- Combining CLTS with other behavior change models did not significantly increase intervention effects.

## Problem Statement

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 over 320,000 years of healthy life were lost.<sup>1</sup> In 2011 it was reported that 13 percent of children in Ghana were moderately or severely underweight, 23 percent were stunted (too short for their age), and 6 percent were wasting (too thin for their height)<sup>2</sup>. In 2017, 23.5 million people in Ghana lacked access to basic sanitation services, and 5.2 million people practiced open defecation.<sup>3</sup> Access to safe sanitation services like latrines can reduce the prevalence of open defecation, thereby reducing diarrheal risks and possibly preventing 5.5 percent of infant deaths globally.<sup>4</sup> Stopping open defecation also reduces the prevalence of malnutrition and stunting by reducing incidence of diarrhea and intestinal diseases that result from indirectly ingesting fecal bacteria.<sup>5</sup> Community-Led Total Sanitation (CLTS) is a behavior change intervention that seeks to change individual behaviors to stop defecating in the open and changing community norms regarding the unacceptability of open defecation anywhere in the community. The CLTS approach also encourages the construction of household latrines as global evidence suggests that the construction and use of durable household latrines enables households to stop defecating in the open and sustaining that behavior over time. Access to sanitation services in Ghana has increased, but these services can only benefit if they are community-wide. As long as other community members practice open defecation, the whole community is at risk.

CLTS is centered around a triggering event, wherein the CLTS facilitator's activities cause a 'eureka!' moment among community leaders. These leaders are then enrolled to help implement safe sanitation services like latrines and handwashing stations and serve as role models for the community. By directing a shift in social norms that opposes open defecation, CLTS motivates communities to set a common goal to become open defecation-free. CLTS triggering is not always successful in igniting a community to change, and even when it is successful, households may want to change behavior but may not have the resources or knowledge to build a durable latrine. In short, it is unclear which CLTS mechanisms are particularly effective and what makes households more likely to build and use latrines.

## Research Goals and Methodology

The study goals were to (1) understand how CLTS works at individual and community levels and (2) determine whether CLTS is the best intervention through which to realize an ODF community, or whether an evidence-based approach targeting specific behavioral determinants would be more effective. The study also sought to determine which mechanisms of CLTS are more efficient in increasing basic latrine coverage and to understand under which social conditions CLTS is most effective.

The study was conducted in two phases. First, two cross-sectional studies of 1,200 households in Mozambique and Cambodia investigated CLTS effects six months after implementation, as well as how participants perceived CLTS activities. Second, 3,216 households in Ghana were surveyed. CLTS was tested against CLTS combined with three separate behavior change interventions, and all were compared to a community without any CLTS influence. Research methods and tools included:<sup>6</sup>

- A qualitative pre-study to help construct the questionnaire.
- Independently recruited and trained staff to collect survey data.
- A questionnaire based on behavior change models, centered around three target behaviors: latrine construction, latrine use and open defecation. The first follow-up survey included questions about intervention implementation and perceptions of these interventions.
- Development of scales to measure intervention effects at the community level.
- A short observational spot-check of household cleanliness with checklists, including photos of latrines and GPS locations in some cases.
- An additional questionnaire that monitored weekly progress.

1 WHO Global Health Observatory data repository, 2018

2 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.

3 WHO/UNICEF, 2019

4 Prüss-Üstün, 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.

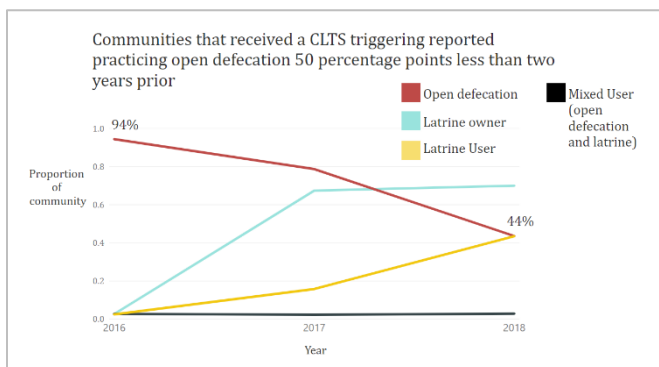
5 Frempong, Raymond Boadi, and Samuel Kobina Annim. "Dietary Diversity and Child Malnutrition in Ghana." *Heliyon*, vol. 3, no. 5, 2017, doi:10.1016/j.heliyon.2017.e00298.

6 More details of the methodology can be found in the journal article.

# Key Findings from the Research

## 1. CLTS approach was effective at reducing open defecation

Overall, the study found that using a CLTS approach was effective at reducing open defecation. As noted in the figure below, communities that received a CLTS triggering reduced open defecation practices by 50 percentage points over a two-year period.



## 2. Reduced open defecation and increase in basic latrine coverage was greater when a higher proportion of the community participated in the triggering event and when incentives were offered

The study findings show that reduced open defecation and increase in basic latrine coverage in CLTS-triggered communities was higher when a higher proportion of the community participated in the triggering event. People were also more likely to construct latrines if they thought they would be rewarded. Incentives included funding of water wells, new toilet facilities in community buildings such as schools, and subsidies for the poorest households to build durable household latrines. The community grant program was open to all communities but the funding was limited and ODF-triggered communities were given priority. On the household level, some poor ODF communities were given a Digni-Loo latrine subsidized by the WASH for Health program. As the community could see the immediate benefits of these incentives, they were found to be an effective incentive for motivating communities toward earning ODF status.

## 3. The number of community leaders participating in the triggering event was a factor in getting more community members to participate

Obtaining buy-in from community leaders also gives the community more incentive to participate, and gives the CLTS project a respected representative to stay within the community and keep households accountable. The CLTS facilitator selects these community leaders during the triggering event based on exhibited leadership potential. The facilitator then pulls these leaders aside and gives them a holistic orientation in the CLTS approach, with special attention given to process after

triggering. The CLTS approach allows facilitators to be flexible in the number of leaders recruited, but the results of this study tell us that more community leaders generate higher latrine coverage.

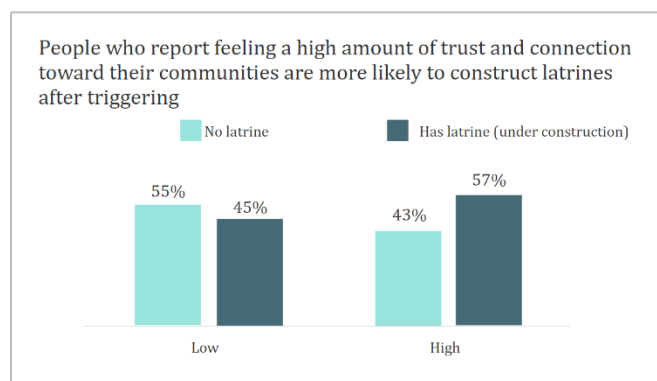
## 4. The number of follow-up visits also correlated with latrine coverage

In the weeks after the triggering event, facilitators are expected to visit the community 1-2 times every week shortly after the triggering and later reduce the visits to once per month until the community is open defecation-free. During these visits, facilitators provide support and remind the community of their self-set goals. Visits might also include encouragement of support of vulnerable households within the community and inclusion of children as agents of change. Communities that were not visited with these frequencies generally exhibited less latrine coverage than those that met the minimum, and communities that were visited more often than the minimum had higher levels of latrine coverage. The study concludes that these follow-up visits are important to the prevalence of latrine coverage and are cost-effective additions to the program implementation design.

## 5. Households that socially identified strongly with their communities were more likely to construct latrines after CLTS interventions

There was a significant relationship between households that strongly identified with the community and the likelihood that they would construct latrines after a triggering event (see figure below). The likely explanation is that people are more likely to follow a new social norm in their community if they strongly associate with their community and their community's acceptance is important to them.

Households that strongly identify with their community report that they highly value what their community thinks of them, that they deeply trust their community, and that they feel connected to their neighbors. Conversely, households that did not identify strongly with their community reported more individualistic traits: that they did not care about how they were perceived in the community, and that they did not feel especially connected or trusting within their communities.

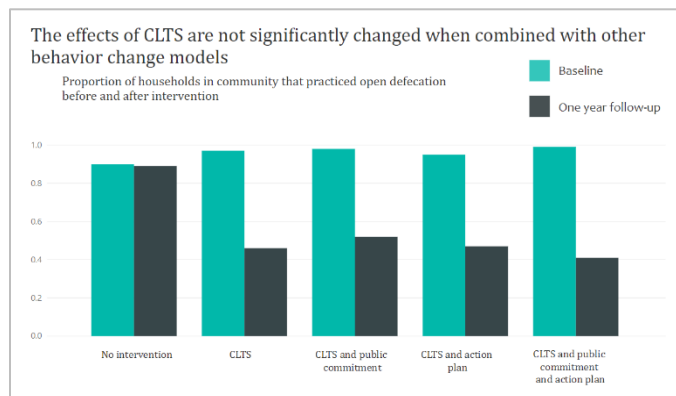




## 6. Combining CLTS with other behavior change models did not significantly increase intervention effects

The study paired the CLTS approach with other behavior change techniques. One of these methods asked participants to publicly commit to latrine building in front of their communities. The facilitators were advised to praise the first volunteers as progressive and respected, and the remaining community members applauded for those who committed publicly to constructing latrines. Those who publicly committed to latrine construction received stickers that were to be visibly placed in view of passersby. After the latrine was constructed, owners received a white flag from the facilitators, which was hung on the latrine. Another behavior change technique used was the household action plan. In the week after CLTS triggering, facilitators helped households develop a detailed action plan to build a latrine. The facilitator supported the household member in choosing a latrine type, estimating the time needed for each step of construction, and considering which materials would be needed and who would be responsible for each step of construction. Both facilitators and household members signed the action plan.

The study found almost no significant difference between the outcomes of a traditional CLTS approach and the approach augmented with these two behavior change techniques. That said, each intervention proved much more successful than the non-intervention group.



A sticker provided to households that publicly commit to constructing a latrine

## Recommendations

To encourage stopping open defecation practices and more latrine construction:

- Focus on ensuring community-wide household participation at the initial triggering event.
- Provide community and household incentives (including subsidies) for achieving open defecation-free status.
- Increase follow-up processes after triggering.
- Include more community leaders in the CLTS process.
- As part of the pre-triggering process, carry out community surveys that measure how strongly households in the community trust one another, how connected they feel with neighbors, and how highly they value the opinion of their neighbors, and then prioritize triggering open defecation communities where households identify strongly with their community and value their community's acceptance.

## Acknowledgments

*This knowledge product was written by John Borkowski, Georgetown University School of Foreign Service, based on the research and report by Drs. Miriam Harter and Hans-Joachim Mosler at the Swiss Federal Institute of Aquatic Science and Technology (EAWAG). This research brief benefitted from comments by Eduardo Perez, Technical Director for Global Health and WASH at Global Communities, and Dr. Mosler. Special thanks goes to the WASH for Health management team in Ghana for facilitating this project, including Alberto Wilde, Chief of Party, and Dominic Osei, Deputy Chief of Party.*

## Full Report

For the full report, please see *Determining the Effectiveness and Mode of Operation of Community-led Total Sanitation: The DEMO-CLTS Study* by Drs. Miriam Harter and Hans-Joachim Mosler., October 20198

<https://www.globalwaters.org/resources/assets/eawag-determining-effectiveness-of-clts-demo>

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