

# Role of Implementation Factors for the Success of Community-Led Total Sanitation on Latrine Coverage. A Case Study from Rural Ghana

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## S Supporting Information

**ABSTRACT:** Community-led total sanitation (CLTS) is an approach to improving sanitation to combat open defecation (OD). OD is a health threat to children under five. CLTS promotes the construction of latrines with the goal of declaring communities open defecation free. However, which factors of the implementation process are most important for the success has yet to be ascertained. The analysed sample comprised of 94 communities in rural Ghana, where CLTS was implemented and factors describing the implementation process of CLTS were assessed. Additionally, monitoring data from the implementation process were used. Multiple regression analysis revealed that latrine coverage was significantly related to attendance at the CLTS meeting, the number of supportive community leaders, the expectation of participants of receiving an incentive, and the number of follow-up visits. Implementers of CLTS should direct their attention to the processes following the community meeting. The success of CLTS can be improved by investing in follow-up visits, the support of local leaders, and the careful application of incentives.



## INTRODUCTION

In 2015, 2.3 billion people did not have access to safe sanitation facilities and were forced to defecate in the environment surrounding their communities.<sup>1</sup> The unsafe disposal of human faeces is one major reason for diarrheal diseases,<sup>2,3</sup> which lead to 1.6–2.5 million deaths per year and account for 19% of all deaths of children under five years in developing countries.<sup>3</sup> Children exposed to open defecation tend to be smaller<sup>4</sup> and have lower cognitive skills.<sup>5</sup> Open defecation further does not only pose an individual health risk: an individual not defecating in the open but living in the proximity of others doing so, remains at risk.<sup>6–8</sup>

Community-Led Total Sanitation (CLTS) aims at stopping open defecation by motivating participants to construct household latrines and reach high latrine coverages in target communities. This set of community-based and participatory activities has been implemented in communities worldwide by local governmental and nongovernmental institutions.<sup>9</sup> The goal of CLTS is to trigger a movement of change towards an improved sanitation situation.<sup>10</sup> This change is achieved by the commitment of all community members. In the case of Ghana, where this study is located, a community is declared open defecation free, if every single person has access to a latrine and at least 80% of the community owns a household latrine.<sup>11</sup> CLTS is implemented in three stages: a pre-triggering phase in which information is gathered, the triggering event that uses participatory activities to foster latrine construction, and a

post-triggering phase that provides support in a series of follow-up visits.

The current literature points to the ability of CLTS to generate significant short-term reductions in open defecation as well as increases in latrine coverage and use, as well as suggestive evidence of child growth benefits in high-performing programs.<sup>9,12–14</sup> But its success rates vary widely across projects and countries and slippage rates as well as long-term effects have received too little scientific attention so far.<sup>15</sup> The success of CLTS can be measured by latrine coverage, the percentage of households within a community that have access to their own latrines. A literature review of sanitation campaigns has reported an average increase in latrine coverage following CLTS of 12%, though not statistically significant,<sup>16</sup> and Robinson<sup>17</sup> presents results of up to 96% latrine coverage in a single case in Malawi. In Ghana, where the majority of the regions have adapted CLTS as their sanitation strategy,<sup>9</sup> the effects are surprisingly low, with a national increase in sanitation access in recent years of only 4%,<sup>1,18</sup> although some specific projects in Ghana have achieved a reduction of open defecation by 19.9%.<sup>19</sup> The wide range in CLTS success rates raises the question how these differences can be explained.

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## ■ FACTORS ENHANCING THE EFFECTIVENESS OF CLTS

A review of CLTS published by USAID in 2018 comments that the “success of CLTS programs is likely to be a function of the implementation modality, as well as both physical environmental and contextual factors. While such factors are cited frequently as crucial, they are not usually well-defined” (ref 9, p 35).

The first aspect of programmatic conditions that the review considers is the quality and responsibility of implementation. The authors state that “implementation quality encompasses a number of elements, including the persuasiveness of facilitators of triggering events” and “‘intensity’—as defined by frequency of facilitator visits, which can vary greatly from program to program.” (Page 27). Another literature review of CLTS research by Venkataramanan and colleagues showed that 23% of the articles reviewed focused on the skills of the facilitators and another 40% included information on the quality of the triggering event itself.<sup>12</sup> This could mean that the more a facilitator convinces and is liked, the more the community is motivated to construct household latrines. The second aspect included in the USAID review is the frequency of follow-up visits by facilitators. Several projects that implemented CLTS stress the need for follow-up visits to sustain the changes achieved by CLTS.<sup>12,17</sup> Cameron and Shah found a positive influence on CLTS outcomes with both higher charisma of facilitators and higher frequency of follow-up visits.<sup>20</sup> Another aspect mentioned is the presence of so-called natural leaders. CLTS focuses strongly on the involvement of such committed community members: they “are activists and enthusiasts who emerge and take the lead during CLTS processes (ref 10, page 5). The *Handbook* recommends selecting 2-4 natural leaders per community.<sup>10</sup> Crocker et al. (2016), studying CLTS’ effects in rural communities in Ghana, found the success being significantly higher when such motivated community members were selected and trained than following the usual CLTS implementation without such specific training.<sup>19</sup>

Some aspects are not included in the USAID review but are stressed by the *Handbook on CLTS*. These include the use of activities to evoke feelings of shame and disgust. The activities implemented in the community should provide an emotional spur to behaviour change: “Triggering is based on stimulating a collective sense of disgust and shame among community members as they confront the crude facts about mass open defecation and its negative impacts on the entire community” (ref 10, page 21). Pattanayak et al. showed that campaigns that included shaming activities explained two thirds of their intervention effects.<sup>21</sup> Whether such feelings as shame and disgust are necessary to driving latrine construction is not yet understood. Another aspect that is strongly stressed by the *Handbook* is participation in CLTS. It seems obvious that without participation nothing will change. But research on CLTS has not yet provided any scientific results on the relationship between participation rate and latrine coverage. Of the articles included in the literature review by Venkataramanan et al., 82% reported the participation rate being one of the success factors of CLTS.<sup>12</sup> The *Handbook* also refers to the time aspect of latrine construction: the process of becoming open defecation free (ODF) should take a community three weeks to three months from the triggering event. However, to our best knowledge the relationship between time since

triggering and latrine coverage in the community has not yet been analysed.

## ■ RESEARCH QUESTIONS

This study investigates the contributions of the implementation factors described above on latrine coverage in communities. We hypothesize that higher participation in the triggering event, better liking of facilitators, higher conviction and motivation after the triggering event, stronger feelings of shame and disgust, higher number of natural leaders selected, higher number of follow-up visits, greater perception of receiving incentives for latrine construction, and longer time since the triggering event are positively related to latrine coverage in communities. The goal of this article is to quantify the individual contributions of these factors toward the success of CLTS as measured by latrine coverage in communities.

## ■ MATERIALS AND METHODS

This study was implemented in rural Ghana jointly by the Swiss Federal Research Institute for Aquatic Science and Technology (Eawag), USAID, and Global Communities Ghana. The project was funded by the Bill and Melinda Gates Foundation. Global Communities implemented CLTS according to the Handbook on CLTS and National Guidelines for CLTS, which also included guidance on the verification of ODF communities, such as 80% of the community’s inhabitants have to own a ventilated improved pit latrine and 100% need to have access to such sanitation services.<sup>11</sup> Baseline data was assessed in March to April 2016. After the implementation of CLTS in July to December 2016, a first follow-up survey was conducted in March to April 2017.

The data for the present study were retrieved from a large randomized and controlled trial which was approved by the Ethics Board of the University Zurich and the Ghana National Health Service and whose methods and main effects are reported elsewhere (Harter et al. (under review)).

## ■ PROCEDURES

The study was realized in two districts in Northern Ghana, where no CLTS intervention had been realized before: Sawla-Tuna-Kalba district and Bole district. Within these two districts, the local government representatives selected 102 communities to receive CLTS implementation according to two selection criteria: accessibility by road and minimum number of 25 households. A team of 33 local data collectors was trained in a 6-day workshop for both surveys. The main part of the training involved discussion of the structured questionnaire, which included questions on demographics, the sanitation practices of different household members, latrine construction, psychosocial determinants, and the social context of the community. The survey included short observations of the hygienic situation of the household and the latrine, if applicable. The questionnaire for the follow-up survey also included questions on respondents’ perceptions of the interventions. All questions were discussed in English and translated into seven local languages: Brefo, Dagaare, Gonja, Waale, Safaliba, Twi, and Mo. Data collectors agreed on keywords in their language for every question. The second part of the training included role plays, discussions on ethics, and close feedback on interview techniques. The questionnaire was pretested in 66 interviews in 2 days and adapted to local conditions where appropriate.

In each community, 25 households were selected randomly by the data collectors following the random route method described by Hoffmeyer-Zlotnik.<sup>22</sup> Data collectors were advised to interview every third household in the section of the community to which they were assigned to. Respondents had to be at least 18 years old and inhabitants of the community for at least 3 months prior to the survey. Adult men and women were considered equally because the decision for latrine construction was considered to be influenced by both. If no one was at home or the household refused to participate, the data collector tried the next household. Every participant was informed about the purpose of the survey and provided written consent for his or her voluntary participation. The face-to-face interview was conducted using electronic devices and lasted 60 min on average. Every interview was supervised, and data quality was checked every evening. The same respondents were interviewed again for the follow-up survey.

## ■ INTERVENTIONS

The protocols for CLTS implementation in the research area were developed following the official *Handbook on CLTS*. Global Communities selected and trained staff for the realization of CLTS, which was implemented in three phases:

**Pretriggering.** The community was assessed for its social structure and size, and a date for the triggering event was agreed with community leaders. They were asked to invite female and male community members from all ethnic groups to the triggering event.

**Triggering.** Facilitators started the session by presenting each other, an opening prayer, and welcoming community members. They facilitated the drawing of a community map on the ground with community institutions such as mosques and water sources. Then, they invited participants to locate both their houses and the spots they used for open defecation. By asking questions about possible paths of the fecal–oral transmission route, the facilitators helped participants recognize the sanitation threat that they faced in their surroundings. If participants seemed hesitant about the sanitation improvement of their community, facilitators were instructed to introduce more activities. These included the presentation of a sealed bottle of water. This was offered to participants to open and taste. A facilitator then took a stick, touched the soil with it, and then dipped it in the water. The water was then presented to participants again. This was to illustrate the contamination of water by small particles, such as those transferred by flies. Facilitators asked participants to agree on a date for the community to become open defecation free and set a community action plan in place. The community was exhorted to start digging pits for latrines immediately, and facilitators promised to return the following week. People that emerged as local leaders were identified during the triggering event, their names were noted, and they were later invited to a central training event for natural leaders. At least two natural leaders were identified for every triggered community and trained in the importance of latrine usage and the fecal–oral transmission route. The role of natural leaders in the communities included supporting other community members during latrine construction, spreading knowledge of health hazards, and being role models in the latrine construction process. The triggering event was documented by using the Intervention Monitoring Form ([Supporting Information Figure S1](#)).

**Post-Triggering.** Facilitators visited the community every week for 4 weeks, then reduced the frequency of visits to 2 times per month, and later to monthly visits until the community reached the open-defecation-free state, which was defined as 80% latrine coverage with ventilated improved pit latrines according to the Ghanaian National Guidelines.<sup>11</sup> The ODF state was verified by governmental representatives of the District Assemblies in both districts. These follow-up visits were used to discuss problems and supervise latrine construction. Global Communities (the local implementing NGO) did not provide any latrines for free but provided construction materials such as cement and vent pipes at wholesale price instead of retail prices. The NGO also encouraged the construction of latrines with locally available materials. Follow-up visits were documented using the Follow-Up Monitoring Form (see [Supporting Information Figure S2](#)).

## ■ MEASURES

Two sources were used as data base: first, some of the variables considered for this analysis come from the two monitoring forms used by the implementing NGO and were gathered for each community. Secondly, data come from information gathered during interviews with respondents in the randomly selected households within intervention communities. For each community this data was aggregated to form continuous variables for statistical analysis.

The outcome measure in this analysis, community latrine coverage, represents the proportion of households within the community sample having a latrine; this ranges from 0% to 100% coverage. To create this measure, randomly selected households within a community were asked whether they owned a household latrine. The data collector verified this information. Households were considered to have a latrine even if the latrine was still under construction, as CLTS was only implemented three to six months ago and having started latrine construction was considered as a first step towards ending open defecation.

Attendance at the triggering event was captured by a measure ranging from 0–100% of community inhabitants attending the CLTS event. The measure was created by asking respondents whether they participated in the activity.

Facilitators from Global Communities rated the quality of each meeting on the Intervention Monitoring Form. This uses a four-point scale to represent the level of enthusiasm sensed within the target community in accordance with the terms specified in the *Handbook on CLTS*.

To measure the quality of the meeting, we used data from the individual interviews conducted with the community members of the communities enrolled in the CLTS program. Several questions captured the participant's perception of the meeting and the facilitators. Only respondents who confirmed their presence during the meeting gave answers to these items.

Participants were asked to rate the quality and their perceptions of the meeting and its activities using several items. Participants were asked to rate how much the meeting both convinced and motivated them to build a latrine on a five-point Likert scale (ranging from “not at all” to “very much”). To capture the level of shame and disgust evoked by activities during the CLTS meeting, participants were again asked to rate their perception. Lastly, participants were asked how much they liked the meeting and the facilitators using the same kind of scale.



Further, the number of follow-up visits of the facilitators to the community was captured during the interviews by asking respondents whether facilitators had come back to their community and how often. This means that this variable does not necessarily capture how many follow-up visits were actually made but rather how many visits were recalled on average by the respondents within a community.

In addition, participants were asked whether they were promised anything in return for latrine construction by the facilitators or had understood that there would be incentives. If participants understood that they would receive something in return for constructing a latrine, they were asked what they had been promised. People mainly expected boreholes or construction materials for latrines at reduced prices.

Time since triggering event was assessed using the monitoring forms and was measured using the difference between the recorded date of the meeting and the follow-up survey in March 2017. Time since triggering was measured in months. The monitoring forms also provided the number of natural leaders (female and male combined) that were identified during the triggering session. Data was analysed using IBM SPSS Version 22 (Armonk, NY, USA).

## RESULTS

Overall, community latrine coverage increased pre-post by 67.6%. The selected communities had a mean community size of 466 households ( $SD = 337$ ). Within communities, some 49.2% reported Christianity to be their religion, 26.1% Islam, and 19.2% traditional religions. Most were farming communities (80.4%); with a mean monthly income of 202.30 New Ghanaian Cedi (equivalent of 43 USD,  $SD = 380.39$  GHS) and an average household size of 8.7 individuals ( $SD = 4.9$ ). The sample used for the study was comprised of 94 communities (1877 households in total), for which complete data in all hypothesized variables was available at time of data analysis. For this analysis, 8 communities were excluded because of missing information either on the total population size, the attendance rates or the number of selected natural leaders.

## INFLUENCES OF PROCESS FACTORS ON CLTS' SUCCESS

All factors hypothesized as relevant were entered simultaneously into a linear regression model as predictors of the dependent variable, community latrine coverage. Full information was available and entered into analysis from 1877 households across 94 communities ( $M_{agg} = 19.97$  households per community;  $SD = 3.06$ ; range 6 - 25). The item assessing the facilitator's perception of the quality of the meeting by the sensed enthusiasm of participants, provided minimal variance with a very high ceiling effect, so we did not consider this measure. The two items measuring the level of conviction and motivation showed high inter-item correlation ( $\alpha = .74$ ) and were combined by creating their mean average into a single variable for analysis. The same accounted for the two items measuring the liking of the triggering event and the facilitators ( $\alpha = .91$ ) and the two items asking for evoked shame and disgust ( $\alpha = .61$ ). Descriptive statistics, size, and significance of the correlations between all variables with the outcome are displayed in Table 1.

The model containing all variables was able to explain 51.2% of the variance in the outcome latrine coverage (adjusted  $R^2$ )

**Table 1. Descriptive Statistics; Correlations with Outcome**

	mean	std. deviation	N	correlation with outcome	sign
latrine coverage	67.99	31.30	94		
time since triggering	6.16	2.29	94	0.054	0.303
attendance at meeting	83.36	14.34	94	0.47	0.000
number of natural leaders	5.46	2.59	94	0.13	0.106
incentive promised	56.51	25.51	94	0.56	0.000
convinced and motivated	4.64	0.278	94	0.39	0.000
ashamed and disgusted	2.08	0.46	94	0.13	0.112
liking facilitators	4.71	0.31	94	0.17	0.056
number of follow-up visits	2.09	1.00	94	0.60	0.000

with significant change from the zero model. Standardized coefficients and level of significance of the individuals' predictors are displayed in Table 2. The average variance inflation factor (VIF) was 1.51, with all individual VIFs below 2.1. Four variables yielded significant explanatory power. The largest contribution to the power of the regression model came from the incentive promised ( $\beta = .38$ ), followed by the number of follow-up visits to the community ( $\beta = .37$ ), then the number of natural leaders ( $\beta = .21$ ), and attendance at the meeting ( $\beta = 0.20$ ).

According to these results, an increase in communities' latrine coverage can be expected if any of these four parameters increases. In other words, while all other predictors remain stable, an increase in coverage of around 0.5% can be expected from every person more out of 100 who attends the meeting or to whom an incentive is promised during the meeting. Further, every single follow-up visit to the community should increase latrine coverage by about 11.5%; every additional natural leader identified should increase latrine coverage by about 2.5%.

## DISCUSSION

To our knowledge, this is the first time that several implementation factors describing the CLTS process have been tested simultaneously for their influence on latrine coverage in communities. This was possible because of the large sample size of communities in this project. This allows firm suggestions to be made about improving the CLTS implementation process.

Our results suggest that for CLTS to be maximally successful it is important that as many community members as possible participate at the triggering meeting. Therefore, good preparation of the meeting is important to ensure that all people in the community are aware of the meeting and that it is also attractive. The more people participate in the meeting the more are also communicating within a community about this event and the messages are transmitted to non-participants more likely. The diffusion of CLTS information to non-participants was already shown in previous research Harter et al.<sup>23</sup> Consequently, the effect of the triggering event may be enhanced by prompting attendees to influence community members who did not attend, for example by facilitating further exchange between community members.

According to our results, promoters of CLTS should also try to identify as many natural leaders from a community as

Table 2. Linear Regression Model of Predictors of Community Latrine Coverage<sup>a</sup>

variables in the model	unstandardized coefficients		standardized coefficients		95% confidence interval for B	
	B	std. error	beta	sig.	lower bound	upper bound
(constant)	−20.93	53.07		0.694	−126.44	84.58
time since triggering	−1.96	1.13	−0.14	0.086	−4.21	0.29
attendance at meeting	0.43	0.20	0.20	0.035	0.03	0.83
number of natural leaders	2.50	0.90	0.21	0.007	0.71	4.28
incentive promised	0.47	0.12	0.38	0.000	0.24	0.70
convinced and motivated	5.55	10.80	0.05	0.609	−15.93	27.02
ashamed and disgusted	−1.99	5.38	−0.03	0.712	−12.70	8.71
liking facilitators	−4.44	8.65	−0.04	0.609	−21.63	12.75
number of follow-up visits	11.74	3.27	0.37	0.001	5.24	18.25

<sup>a</sup>Note:  $R^2 = 0.512$ ; ( $ps < 0.000$ ). Confidence intervals are 95% bias corrected and accelerated. Confidence intervals and standard errors based on 1000 bootstrap samples.

possible. Of course, there is a limit to the possible number of natural leaders in each community. However, facilitators could also be trained in motivating natural leaders. One might consider persuasion training with the aim of eliciting the undeclared aspirations and skills of community members. The importance of training natural leaders has been shown in a randomized-controlled trial in Ghana,<sup>19</sup> and another study showed that the success of CLTS is mediated by changes in norms, such as the approval of latrine construction by leaders of the community, as natural leaders might be.<sup>23</sup> The training of natural leaders should be considered more thoroughly. A recent study revealed that the success of CLTS is enabled by focusing on social norms and the belief of participants in their ability to construct and maintain a latrine, fostering the development of detailed action plans toward latrine construction, and leaders publicly showing their approval of latrines.<sup>24</sup> This could be done by natural leaders.

The number of follow-up visits emerged as a very influential factor. Our results imply that every follow-up visit increases latrine coverage by 11.5%. However, this data was self-reported by respondents in the communities, and perhaps they could not recall or did not witness some follow-up visits. This again emphasizes the importance of every single follow-up visit as it increases the chances of reaching more beneficiaries. The strong influence of follow-up visits on latrine coverage is in line with previous research<sup>20</sup> and was also one of the main factors mentioned as influential by 27% of the literature reviewed by Venkataramanan et al.<sup>12</sup> Further implementation protocols for CLTS should definitely plan consistent follow-up visits by equally keeping cost-effectiveness high as many follow-up visits definitely raise costs. Facilitators should therefore attend to problems faced in the process of latrine construction and serve as consultants for the natural leaders.

Interestingly, we did not find an effect of performance or the acceptance of the facilitator on latrine coverage. In contrast to other factors that were considered in the analysis, the influence of these factors were not significant. Facilitators were trained thoroughly in this project by the implementing organization and supervised closely during the CLTS process. This might also be a reason why there were no great differences in the perception and performance of facilitators, as their values on the rating scales were uniformly high.

We also found that the perception of a promise was an important success factor for CLTS in this project. Global Communities drilled boreholes in parallel with the CLTS process but only for communities that were assessed as especially in need of these. On the other hand, a problem may

arise if people construct latrines for another reason than because they think they need them. As long as no false promises are given and the latrines are used, this appears to be a viable strategy. The expectation of incentives for ODF status, their actual provision, and the provision of subsidies in triggered communities were factors reported elsewhere as enhancing CLTS outcomes in the post-triggering phase.<sup>12</sup>

We did not find an effect of the emotions elicited through CLTS, and our results indicate that the intensity of shame and disgust was not very high. One explanation could be that facilitators prefer to avoid strong reactions due to taboos and cultural impropriety. Some very frequent activities of the CLTS canon were not used in this project, such as a transect walk or the rice-and-shit activity. This was due to cultural impropriety. Another explanation is that emotions are ephemeral: they arise intensely in a moment but disappear in a few minutes or hours and are therefore not remembered in a follow-up after some months, as previous reports on CLTS have also described.<sup>25</sup>

We expected that the time since triggering was relevant for latrine coverage, as some communities might need more time than others. Indeed, we found that the variance between communities is high. Some are strongly motivated and complete their latrines rapidly, while others need weeks and months. This might be the reason why time overall is not a relevant factor. On average, the communities in this project needed more time than anticipated by the *Handbook on CLTS*;<sup>10</sup> this states that communities should only take 3 months after the triggering event to become open defecation free. Venkataramanan et al.<sup>12</sup> show that 6% of the studies they reviewed report lack of time for latrine construction as an important individual constraint, but no study has yet discussed the time needed to become open defecation free at community level.

## ■ STRENGTHS AND LIMITATIONS

This study has several key strengths. One is the size of the sample, with 94 communities. This is the first time that several factors describing the implementation process were compared against each other on their role for the success of CLTS. Implementation of CLTS was realized across a broad range of contextual settings (e.g., community size, community composition, location), so the results hold strong external validity. CLTS as implemented in this study might be considered scalable both for other regions of Ghana and for other countries in West Africa.

However, our study also has some limitations that need to be considered. The analysis uses cross-sectional data from only

one time point and therefore does not allow for causal conclusions on the influences of implementation factors of CLTS on latrine coverage. However, as baseline latrine coverage was very low and increased after CLTS implementation and factors describing the implementation process (e.g., participation rate) are linked to the CLTS triggering event, it makes theoretically sense to link the increased latrine coverage after CLTS to the CLTS process itself. Additionally, we did not consider interactions of different factors, which should be put on future research agendas as well as manipulation of different ways of CLTS implementation. We also included influencing factors based on practical considerations rather than on theoretical background. Of course, it might be the case that other influencing factors, such as the implementation of by-laws and sanctions,<sup>12</sup> influenced the success of CLTS in our study significantly but that these were not considered in this analysis. A further limitation is that we did not consider initial community conditions that may influence CLTS success, such as the social context of communities, which has been shown to be relevant to success.<sup>26</sup> Data was received from two sources, the implementing NGO and participants of CLTS, what might imply biases regarding the intention of giving information. Our data are nested, as individuals are clustered in communities, and statistical analysis should control for the variance within and between communities. This was not considered in this analysis. Finally, the outcome measure latrine coverage in communities included also incomplete latrines; this is why latrine coverage might be overstated.

Overall, our findings suggest that the triggering event of CLTS is only the starting point. But whether people experience any strong feelings, whether they are convinced by the event, and whether they like the facilitator and the meeting are not relevant for the long-term latrine coverage of the community. CLTS unfolds its power in the weeks after the triggering event. However, the time elapsed since the triggering event is not an explanation for success. The more community members participate in CLTS, the more the movement spreads. Trained natural leaders have to supervise the process kicked off by the triggering event, and facilitators need to return and provide support. The belief or hope of receiving an incentive such as a borehole seems to be an important driving factor that accelerates the construction process.

## ■ ASSOCIATED CONTENT

### ■ Supporting Information

The Supporting Information is available free of charge on the ACS Publications website at DOI: [10.1021/acs.est.9b01055](https://doi.org/10.1021/acs.est.9b01055).

Intervention monitoring form of global communities used for CLTS implementation monitoring (Figure S1); follow-up monitoring form of global communities used for the monitoring of the follow-up visits after CLTS implementation (Figure S2) (PDF)

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### Notes

The authors declare no competing financial interest.

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