

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY/
AFRICA INSTITUTE OF SANITATION AND WASTE MANAGEMENT,
ACCRA, GHANA**

**COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH**



**ENDING OPEN DEFECATION: PROSPECTS AND CHALLENGES IN THE
IMPLEMENTATION OF COMMUNITY LED TOTAL SANITATION
IN SAWLA TUNA KALBA DISTRICT IN NORTHERN REGION**

BY

ADUAH JOSIAH AYIPAALA

JANUARY, 2019

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**A THESIS SUBMITTED TO THE SCHOOL OF PUBLIC HEALTH,
COLLEGE OF HEALTH SCIENCES, IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE
AWARD OF A MASTER'S DEGREE (MSc) IN ENVIRONMENT AND
PUBLIC HEALTH**

JANUARY, 2019

DECLARATION

I, Aduah Josiah Ayipaala, hereby declare that except for references to works done by other people that have been acknowledged, this piece of work submitted to Kwame Nkrumah University of Science and Technology, African Institute of Sanitation and Waste Management, is my own original work and that this work has not been submitted to any other institution by any student elsewhere.

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ABSTRACT

Background: In Ghana, poor access to improved sanitation and open defecation had delayed progress with sanitation-related indicators. Community-led total sanitation (CLTS) is a participatory approach to mobilizing communities for sustained behavior change aimed at eliminating open defecation. Its outcome is for communities to attain an open defecation free (ODF) status. In Ghana, the prospects of CLTS in ending open defecation (OD), the challenges in getting communities to attain ODF status and the outcomes in terms of sanitation and hygiene behavior, and latrine ownership have not been documented.

Aim: To examine the prospects and challenges of the implementation of community-led total sanitation (CLTS) by the District and partner NGOs in participating communities in Sawla Tuna Kalba District (STKD).

Methods: A household (HH) census was conducted in 12 communities in which CLTS had been implemented either solely or with partner NGOs from January to December, 2016. Selection of the communities was done by multi-stage sampling among ODF and non-ODF communities. Three hundred households were enrolled from the 12 communities and visited at follow up. A pre-tested questionnaire was administered to household heads, and ten departmental staff responded to a separate questionnaire. Six focus group discussions were also held with latrine owners to complement data collected from the survey.

Results: Access to private latrines was higher among households in ODF (51.3%) and non-ODF (19.1%) communities. Self-reported cases of OD dropped in the non-ODF communities as a result of increased number of latrines and sanctions on OD. The program also increased

perceived privacy and safety during defecation among women. The ODF communities were sustained over five months and the non-ODF communities had done self-assessment, verified by the District Inter-Agency Coordination Committee On Sanitation (DICCS) and were awaiting Regional Inter-agency Coordination Committee on sanitation (RICCS) verification.

Conclusion: CLTS shows some potential of ending OD, if fully supported with collaboration from the District Assembly and communities.



DEDICATION

This thesis work is dedicated whole heartedly to my entire family for their prayers and encouragement.

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My first thanks and appreciation goes to my supervisor, Dr Emelia Udofia of the School of Public Health at the University of Ghana. I was at all times welcomed to the office of Dr Udofia whenever I had a problem or a questions regarding my research work. She allowed the research work to be entirely under my control, and guided me in the right direction anytime she thought I needed it.

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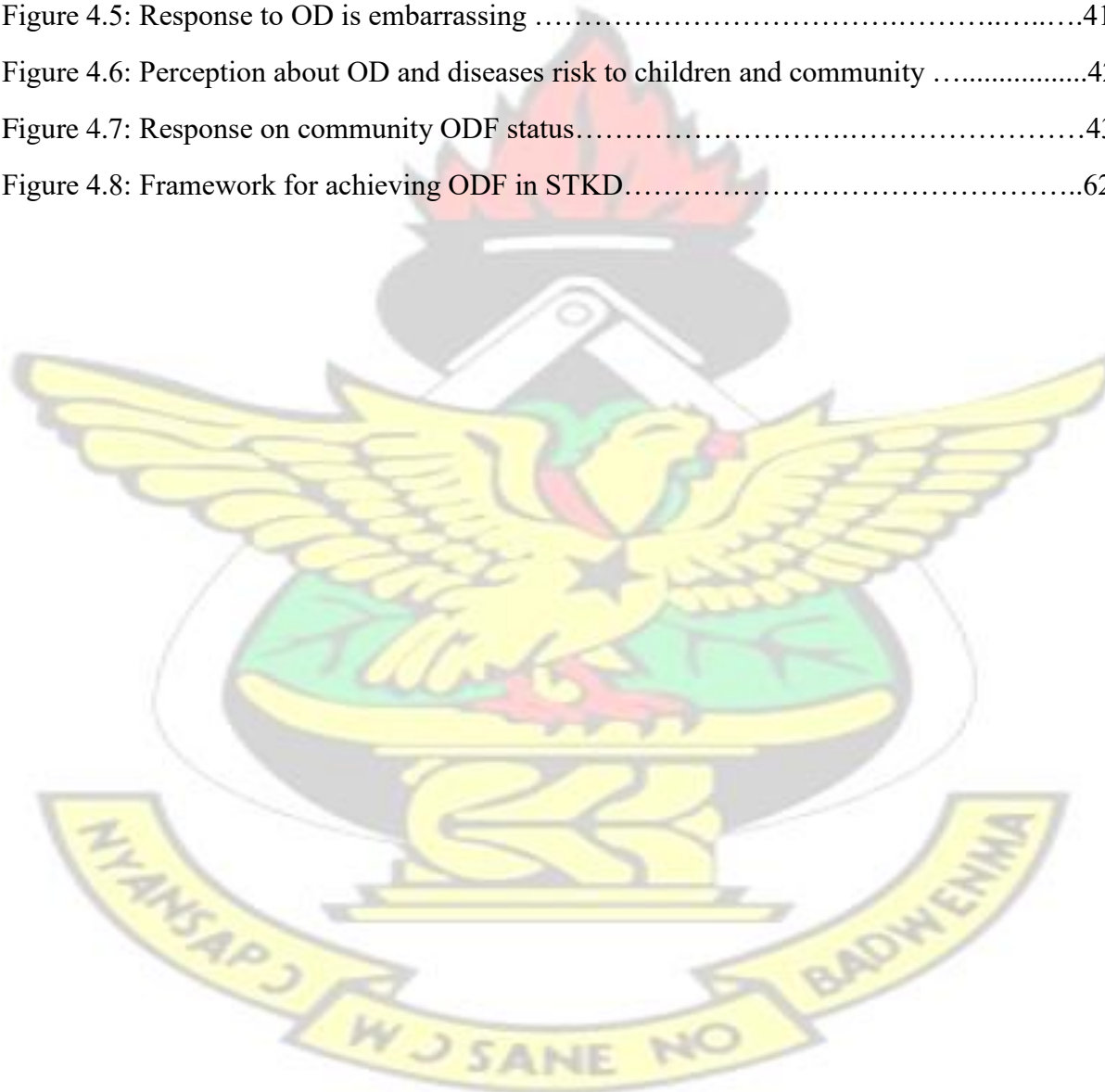
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LIST OF ABBREVIATION

CLTS	Community Led Total Sanitation
DCD	Department of Community Development
DICCS	District Inter-Agency Coordination Committee on Sanitation
EHO	Environmental health officer
EHA	Environmental Health Assistant
EHSU	Environmental Health and Sanitation Unit
ESP	Environmental Sanitation Policy
GoG	Government of Ghana
HHLO	Household latrine owner
LNGO	Local non-governmental organization
MLGRD	Ministry of Local Government and Rural Development
MMDAs	metropolitan, municipal and district assemblies
NLs	Natural Leaders
NLN	Natural Leaders Network
ODF	Open defecation free
OD	Open Defecation
RICCS	Regional Inter-Agency Coordination Committee on Sanitation
SHEP	School health education program
SLTS	School Led Sanitation program
UNICEF	United Nation's Children Fund
WHO	World Health Organisation

OPERATIONAL DEFINITIONS

District verified ODF community: verification conducted by the district team for Basic ODF

Independently verified ODF community: verification conducted by the Regional Inter-agency Coordination Committee on Sanitation

Natural leaders: individuals who emerges out in a community with the zeal to support end OD

Natural leader's network: Group of natural leaders from different community networked

ODF Basic community: verification successfully done by the District Inter-agency Coordination Committee on Sanitation

Open defecation free status: status achieved as a result of an end to OD

Open defecation: indiscriminate defecation in the open

Sanitation ladder: hierarchy of predefined sanitation technologies or types

Self-assessment: assessment done by community to ascertain its ODF status

Triggered community: a community taken through the triggered processes

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND

Ending open defecation is crucial to public health. Food, hands and water can be contaminated by human fecal matter through exposure in the environment and by human contact, or through flies and other domestic animals resulting in diarrhoea. Diarrhoea contributes to malnutrition and dehydration of individuals infected, can also lead to the evacuating of nutrients before absorption by the body system (Maria *et al.*, 2015). Environmental enteropathy can result from faecal contamination resulting in inflammation of the small intestines. This results in an inability to absorb nutrients into the body (Humphrey, 2009). Parasites in the environment can be transmitted to humans when the faeces are not managed in a safe manner in the environment (Bethony *et al.*, 2006). As a result, energy needs of the individual for the growth and development may be diverted to fighting parasitic diseases and any other water and sanitation related infections in the human body. A reduction or complete elimination of human waste in the environment through an improved water and sanitation management systems has been linked to a decline in infant death (Gamper-Rabindran, Khan, & Timmins, 2008, Watson, 2006; Cutler & Miller, 2005). There is evidence in support of the view that water and sanitation programmes may lead to the improvement of child wellbeing and outcomes (Spears, Ghosh, & Cumming 2013), but causal evidence is however lacking (Dangour *et al.*, 2013). The Non-health outcomes on the other hand have also been reported to emanate from the reduction in the water and sanitation related diseases. Reducing infections among school going children could decrease school absenteeism.

Resources allocated to older children and mothers may be diverted and the time used in caring for the sick family members could be spared for other viable economic activities for the

benefit of all. Labor supply, production, as well as school participation may increase as a when the public is spared related illnesses (Maria et al., 2015).

Community-Led Total Sanitation (CLTS) as innovative approach is deployed to mobilise communities to build and own household latrines in order to stop open defecation. The approach promotes the not provision of subsidy for household latrines which restricts to behavior change to individuals. CLTS promotes collective efforts to end the act of practicing open defecation in a bid to achieve an open defecation free community for the benefit of all (KAR and CHAMBERS 2008; WSP 2007). The objective to end open defecation is to reduce the spread of water and sanitation related diseases. This in turn reduces the risks posed to the public by the failure of individuals to safely manage and confine excreta at the household and community level. This has been in most instances effectively undertaken by communities empowered and motivated to take collective action, with government agencies and other non-governmental agencies or development partners in the water and sanitation sector, performing at best a facilitating role (Louis Helling, Rodrigo Serrano, and David Warren, 2005).

Results from the implementation CLTS in South Asia have attracted international and national attention in the fight on ending open defecation. There is also a growing recognition and evidence that, the evolving approach to sanitation offers potentials, not only for achieving, but even for surpassing the targets of the relevant MDG targets as well as the Sustainable Development Goals (SDGs) (UNICEF South Asia / 2016 PROGRESS REPORT)

Historically, money invested in toilet programmes (subsidy approach) in Ghana and other developing countries was wasted as individuals and households continued to practice and defecate in the open, thus facilitating the faecal transmission of diseases in the communities. By contrast, CLTS avoids upfront issuance of hardware materials or subsidies for latrine

construction and rather creates the self-awareness about human waste produced, through facilitation (IDS Research Findings, 2008).

Finally, Community led total sanitation is said to work effectively through the mobilization of the community. Members of the community are more likely to change the way and manner certain things are done in the community and also act in a way that the beliefs system and thinking will make them rely less on any outside support, and rather depend on their own community. Communities in particular may become better at solving their own social problems, at any point that a collective action is required in an activity. When open defecation is not stopped, then a healthy living environment free from disease transmission conditions supporting the dignity of humanity would be compromised.

This triggered the global call by countries to end open defecation, as established by the United Nations resolution in 2015. Fifteen per cent of the world's population still practices free range/open defecation. The rates are however alarmingly higher in the Asia and sub-Saharan Africa, where 44 per cent as well as a 27 per cent of the populace practice open defecation respectively (WHO/UNICEF & JMP, 2012).

Water and sanitation has become and remains a crucial part of the developmental agenda for every nation. Additionally, the wellbeing and wealth of the citizenry depends to a large extent on their health. This has been discussed at both national and international levels and also at the post 2015 agenda. Improving the sanitation situation is an important step to reduce sanitation related diseases. Achievement of the sanitation targets of the Millennium Development Goals (MDG) lags behind in the sub-Saharan Africa (SSA) (WHO 2012). Open defecation is much more common among rural dwellers where an estimated 35 percent of households practice open defecation. In contrast to this in urban areas, an estimated 8% of the households are reported to practice of open defecation (WHO 2012). While the global performance in the access to

potable water has shown an improvement, it appears no significant improvement has been made in the sanitation situation in Ghana. The practice of open defecation remains a public health concern, particularly in rural communities, and has even worsened from 1990 and 2012 (GSDO, 2014). In Ghana it was estimated that in 2015 18.7 million people will be without an improved basic toilet facility for usage. Access to improved sanitation in Ghana, which is estimated at about 13%, with a worse situation in rural areas (7%), which positions the country among those in Sub-Saharan Africa that were off-track towards achieving MDG sanitation targets. Based on the outcome of CLTS piloting over the past 6 years, the approach has been adopted in the revised Environmental Health and Sanitation Policy (2010) of the Ministry of Local Government and Rural Development (MLGRD). It aims to improve rural sanitation, thereby providing the necessary policy framework and guidelines for scaling up of CLTS implementation in the country. Ghana's government has a vision to end open defecation which aligns with the Sustainable Development Goals to eliminate open defecation by 2030. This study aims at assessing the potential of CLTS as an approach to rural sanitation to ending opening defecation.

1.2 STATEMENT OF THE PROBLEM

Conventional approaches in Ghana have attempted to tackle poor sanitation from the angle of improved coverage as well as access to financial support for the construction of household's toilets. It has however been evident that the provision of subsidies for latrine construction and the presence of latrine facility does not necessarily translate into its usage. For individuals and households to appreciate and use a household latrine, behavior change is vital. Without a change in behavior the latrine constructed can become a white elephant project. For some time

now, the need to raise awareness and emphasize the benefits of toilet usage as a behavior change message has been incorporated into sanitation programs. Sanitation marketing geared towards creating individual demand, has often combined with subsidies linked to toilet construction by householders. This has not necessarily yielded the significant progress and outcomes in the delivery of sanitation programs in Ghana.

In Ghana, diarrhea is the second most common health problem treated at the outpatient clinics. Data available at Ghana's Ministry of Health indicates that, 84,000 deaths recorded annually resulted from diarrhea, with twenty five (25%) percent of the cases among children under the ages of five years (Osumanu, 2007). On average, treatment of an outpatient with diarrhea with the use of oral rehydration solution is usually between \$3.86 and \$4.35 for all the treatment regimens and other diseases combined. On the other hand, the cost of treating an inpatient suffering from diarrhea and other diseases combined was \$133.86 (Aikins et al, 2010). This accounts for the cost of hospitalization compared to using rehydration therapy for the diarrhea treatment alone. Given a daily minimum wage of Ghs 3.11 in 2010 (a monthly equivalent of Ghs 83.97 and USD 57.91 at an exchange rate of 1.45 US Dollar), inpatient treatment of diarrhea in 2010 was expensive for the household. Improvement in the access to potable drinking water, adequate sanitation, promotion of good hygiene and sanitation practice are key components and vital in preventing diarrhea. In a related report by WHO/UNICEF (2012), about 2.5 billion of the population globally are said to have no access to simple basic sanitation facilities. If this trend of inaccessibility to sanitation facilities continues, an estimated 2.4 billion people globally would not be able to access improved basic sanitation facilities in 2015. Within Africa alone, about 60% of the inhabitants have no access to basic hygienic toilet facilities as reported by WHO/UNICEF (2012).

As part of measures to address poor access to the improved sanitation situation in Ghana, Community Led Total Sanitation was adopted to stop open defecation and was piloted in the Eastern, Central, Greater Accra, Upper West, Upper East and Northern Regions between 2006 to 2010. The aim was to pilot so as to scale up the approach to cover all the regions in the country using the lessons learnt from the pilot. However, access to improved sanitation at fourteen percent (14%) and open defecation at eighteen percent (18%) after the period of piloting. In order to achieve the targets set in the SDGs, more human and material resources are needed to accelerate sanitation programs, taking into consideration the policies, social and financial constraints as well as the technological and economic constraints in the implementation processes. In the Upper East Region alone, eighty nine percent (89%) of the populace continue to defecate in the open. Only three percent (3%) of the population used improved sanitation facilities. On the average, 22.9% of the Ghanaian population lacks access to any sanitation facility and thus resort to open defecation and only 15% of the populace did not share sanitation facilities. Thirty eight of the districts in the Northern, Upper East, Upper West, Central and the Volta Regions of Ghana have implemented CLTS to end open defecation and none of these districts have been declared ODF yet. Mion is the only district in the Northern Region leading and may likely become the first to attain district wide ODF. Out of the 151 communities in the Mion district, 40 communities are independently verified ODF, 61 communities are also potential ODF that are verified by the DICCS alone in the District, and 35 communities have obtained ODF Basic, and 15 also triggered and monitoring (UNICEF Ghana; Bulletin, 2015).

Efforts have been made in the past by governments and other implementing agencies towards addressing this low level of sanitation development but these have not resulted in large scale implementation required to significantly improve basic sanitation access. Only a marginal

increase of four percent (4%) access to improved sanitation was recorded from 2000 to 2008. If the current trend continues the achievement of the MDG sanitation target of 54% may not be realised. There is a high level of commitment and political will by governments and other stakeholders to scale up CLTS, but very little progress has been achieved so far. This suggests that the successful implementation of CLTS hinges on some contextual factors which is the subject of this investigation.

1.3 JUSTIFICATION

Global initiatives to campaign against poor sanitation and open defecation are receiving attention. Therefore, this study was very important to the development of Ghana and more especially in determining prospects and challenges of the implementation of CLTS in participating communities in Sawla Tuna Kalba district. The results will provide lessons learning for the ministry of health, the ministry of water, sanitation and environment and the Ghana health services to combat open defecation. This will contribute to the development of a policy to curtail open defecation in the district and Ghana as a whole.

The implementation of CLTS as applied in other African countries could be challenged by some contextual realities in Ghana: household poverty, competing needs, employment, burden of illness; lack of individual responsibility for sanitation, weak or unsustainable community mobilization efforts, lack of political will or commitment, absence of stakeholder support, subsidy culture and cultural practices. An example of a country with unfavourable conditions for CLTS is South Sudan. This has been attributed to the country's entrenched position of subsidy, sparsely populated areas, and cultural practices and beliefs which deter the usage of latrines and encourages the practice of open defecation, challenging geographical conditions coupled with the poor infrastructure in the country (www.communityledtotalsanitation.org/country/south-sudan). A study that analysed DHS

survey reported the prevalence of OD conducted from 2004–2005, 2007–2008, and 2010 showed a higher variance in the prevalence of OD among twenty six (26) regions of Tanzania (Sara, Graham, 2014). In the southern regions of Tanzania, OD prevalence remains relatively low, but livestock rearing was seen as an agent for open defecation. This can also be a similar barrier to the uptake and adoption of CLTS in Ghana. The attainment of ODF communities is said to be low and it is a matter of national concern. The factors which facilitate the successful implementation of CLTS in ending open defecation and its potential challenges are not well defined in local communities as compared to the subsidy based approach that CLTS has come to replace. This is a gap in extant literature on CLTS implementation in Ghana that the present research aims to address. The study will also open new research avenues and help to address the suitability of the CLTS approach in rural communities.

1.4 AIM AND OBJECTIVES OF THE STUDY

1.4.1 AIM

To assess the suitability of CLTS as the preferred approach for rural sanitation to ending open defecation in the Sawla Tuna Kalba District (STKD)

1.4.2 SPECIFIC OBJECTIVES

1. To identify the differences and similarities among ODF and Non - ODF communities.
2. To identify institutional roles in CLTS implementation in the study area.
3. To identify the factors that influence the achievement and the sustainability of collective decision by communities to become ODF.

1.5 RESEARCH QUESTIONS

1.5.1 MAIN RESEARCH QUESTION

Is the implementation of the community led total sanitation the best alternative to end open defecation in the STK District?

1.5.2 SPECIFIC RESEARCH QUESTIONS

1. What was the sanitation situation in the STK district before CLTS intervention?
2. What are the prospects and challenges of CLTS implementation in the STK district?
3. What are the strategies for the best implementation of CLTS?
4. What role did traditional authority play in CLTS implementation?
5. What is the extent of collaboration between the district assembly and other stakeholders in the implementation of CLTS?

1.6 CONCEPTUAL FRAME WORK

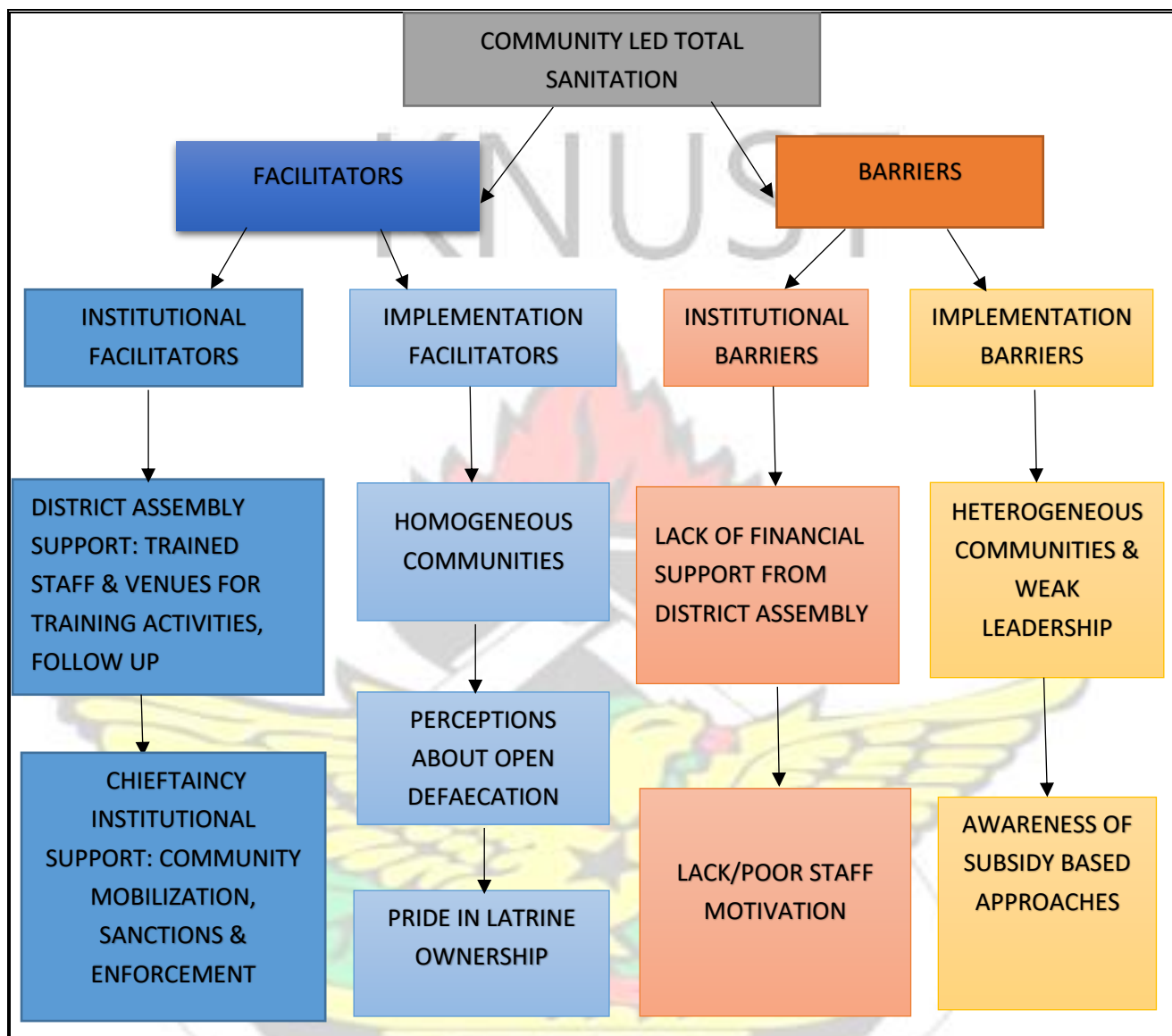
Community led total sanitation as an approach to end open defecation has certain factors that facilitate the smooth implementation of the program, as well as barriers that hinder its operations (Figure 1). Factors that facilitate CLTS are here referred to as the facilitators. The facilitators are subdivided into institutional and implementing facilitators. The institutional facilitators are focused on the incorporation of CLTS in the national sanitation policy as a 'best practice' approach to end OD. This makes budgetary allocations and training of staff for implementation possible and effective. Implementation facilitators refer to those factors that are directly concerned with the operations of CLTS in practice. The implementation of CLTS can however be hampered by the absence of policy including CLTS, political bias that interferes with the allocation of resources and affects reward schemes in the sanitation policy.

The lack of trained staff who understand the concept of CLTS and the need for community engagement could result in a subsidy based approach that enables only the building of latrines using donor driven funds, but is unaccompanied by the necessary behaviour change. The failure of the program would result in demotivated staff and ultimately abandonment of the

program. The success and prospect of CLTS depend largely on adequate and trained CLTS staff, adequate budget by the national government and NGOs in the sanitation sector.

Adequate resources harnessed and well-coordinated can ensure the frequent follow up required after triggering has taken place. There could be some reward for communities' ODF, and CLTS staff that have worked in those communities should be motivated. The use of the strategy which has proven successful in other settings will preclude the duplication and multiplicity of projects addressing open defecation. However, the successful application of CLTS in rural communities in Ghana calls for identifying factors (among those already known from earlier studies and emergent) that are specific to the setting. This research proposes to identify these factors in the context of Sawla Tuna Kalba District, and contribute to extant literature on CLTS implementation in Ghana.





Source: review of existing literature and study outcome

Figure 1. Conceptual framework for the study showing potential facilitators and barriers to implementation of the Community Led Total Sanitation based on reviewed literature.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter captures the overview CLTS approach to end OD. It further describes the sanitation situation in northern region, status of CLTS implementation in northern region and the coverage by districts and by region.

2.1 AN OVERVIEW OF CLTS IMPLEMENTATION

According to Kar (2005), CLTS as an approach has become popular as a method of causing shame and disgust among community members and leads into household latrines or otherwise choosing an appropriate method in disposing of human excreta safely. While the output of CLTS programme is impressive in terms of the participating communities achievement of open defecation free (ODF), then comes the issue of sustaining a high level of sanitation which is somehow questionable. This is because people change behaviours through coercion by their traditional authorities, which have laid down communal sanctions that enforce conformity to latrine adoption. The authoritarian sanctions imposed by community leaders, in a bid to end OD, imply that CLTS is still a top-down, vertical approach. With the ultimate goal being the attainment of ODF status in the community (open defecation free), little is done to change norms and values of the people that affect behaviours required in the CLTS implementation. Thus, up to-date, few studies have been deemed sufficiently rigorous to enable replication. Diarrheal cases recorded annually have been estimated at 1.7 billion, which causes approximately 800,000 deaths of children at age 5 years and below. The transmission of diarrheal pathogens is facilitated by the practice of Open Defecation (OD). Defecating in water bodies, forest, fields, bushes take place in low-income countries especially in rural areas. In

absolute figures, the number of people practicing OD recorded from 1990 to 2010 increased by 33 million as a result of population growth. As at 2010, 35% of rural populace and 8% of the urban inhabitants in sub-Saharan Africa do practiced OD. In the same year, 2.5 billion people are said globally too have no access to improved basic sanitation. Unimproved sanitation on the other hand comprises of flush or pour-flush toilets that do not flush into a septic tank, a sewer system or a pit latrine, open pits as well as pit latrines that have no cover slab fixed on, as well as shared or public toilet facilities and OD among others whiles that of improved sanitation facility is defined as a facility that hygienically prevents the human excreta from physical contact (WHO/UNICEF, 2012). This and many more clearly shows that, the Millennium Development Goal Target 7C which targets to halving the population of the world without the access to safe drinking water and basic sanitation by 2015 cannot be achieved if OD practices are not minimized (WHO, 2012). To achieve target 7C requires the entire sub-Saharan Africa region to have its population of about 64% covered and with access to improved basic sanitation facilities. The current trend however shows that, only 32% is achievable by only 2 sub-Saharan African countries (WHO/UNICEF, 2012).

However, bringing OD practices to a stop is not just having access to improved sanitation facilities, it also revolves around the drivers that motivates individuals and communities, such as safety and security, wellbeing, prestige, and other situational goals deemed by the individual or the community at large (Jenkins & Curtis., 2005). The United Nation's 2015 Sanitation Drive advocacy campaign working in a bid to end OD revealed that, there is increasingly a value placed on encouraging or motivating individuals/communities to stop OD, even in the case that the sanitation facility in question does not meet improved basic sanitation facilities definition. In contrast to past approaches aimed at bringing OD to a stop with a focus on individual households' effort to stop OD, an emerging and a more promising approach focuses

on empowering communities wholly in the aspect of sanitation in total but with specific focus on stopping OD is being implemented. This approach focuses on empowering communities to choose local sanitation options using indigenous resources which are affordable and available and minimize the use of “hardware subsidies”. It also tries to win community commitment and “collective sense of intolerance towards open defecation practices as well as raises awareness of the dangers posed with the practice of open defecation (Kar & Milward, 2011; Chambers, 2009; Hickling & Bevan, 2010). Many critical questions thus remains, with regards to the effectiveness of this total sanitation approach, more especially in urban areas communities where cohesiveness is lesser. Questions are also on the durability and resilient nature of the latrines constructed as they are often inadequately constructed with locally available materials at the community level. This compels many organizations to apply different sanitation strategies and approaches which integrates most market based and hybrid methods aims at both the economic sustainability and the installation of better quality sanitation systems in place (Galan et al., 2013).

However, this approach can result to a significant and rapid improvement in sanitation as well as seen as a more promising approach to the sanitation situation and in reducing open defecation in the sub-Sahara Africa (Harvey., 2011).

It is very critical to know what influences the acceleration of countries reducing open defecation because in improving sanitation it will require strategies sourced from best practice (Deise, Seung, & Jay, 2012). Based on the study conducted by Deise et al., (2012) the research identified and assessed three main important domains which could influence the prevalence of OD in the sub-Sahara Africa. The first important domain pertains to policies adopted by governments, comprising of the commitment and the implementation of a national sanitation policy available, public sector budget line for implementation of sanitation, and the allocation

of budget to sanitation programs. The second domain addresses the economic factors: per capita gross domestic product of the country (GDP), economic growth, and amount of external development support for water and sanitation programs. The third domain is the sanitation approach, which refers to: adoption of an approach to dealing with the sanitation situation at the national level. The study revealed a limited number of countries in the African continent to have made significant stride towards the reduction of OD prevalence and only Angola, among the thirty four countries analyzed was expected to end Open Defecation menace by 2015. It was also revealed in the study that, a higher level of per capita aid disbursed for WSS programs was positively correlated with a reduced OD prevalence (Deise *et al.*, 2012).

As at 2001, 64% of the population in the world had access to an improved basic sanitation facilities. Meanwhile, the coverage of sanitation was still very low in sub-Saharan Africa. Southern Asia has experienced a decline in the population of people using shared or unimproved sanitation facilities to 18%, though 39% are still practicing open defecation. Sub-Saharan Africa has seen no decline as 44% of the population are still using either shared or unimproved sanitation facilities, while 26% of the population are practicing open defecation. This appears to be the only region where open defecation is increasing (ibid).

2.1.1 FACILITATING FACTORS

Available literature indicates that in order to improve sanitation, there was the need for the framing of sanitation promotional messages tailored around faeco-oral disease transmission routes and prevention, and this have failed to a large extent to motivate the changes desired in sanitation behaviors among individuals and the communities as a whole targeted (WHO, Cranfield, 2011). The literature however, recognizes that there are a set of incentives in the implementation processes that actually persuade households or community members in general to stop OD and adopt the use of an improved basic sanitation facility to contain and manage

the exposure of human excreta in a simple pit latrine or a ventilated improved pit latrine (VIP) (WHO, Cranfield, 2011).

From time immemorial, farming has been the main economic occupation of rural communities around the globe. A study in Vietnam on a market-based project on sanitation for the rural poor communities increased access to sanitation by about hundred percent within one year of implementation. The study further revealed that the driving and motivating factor for the poorest in adoption to latrine construction was the use of compost from human excreta for the fertilization of farm lands (Frias & Mukherjee, 2005). In a study by Jenkins and Curtis (2005), it was found that consumer motivation for the acquisition of a sanitation facility in rural Benin was prestige, well-being, and a wider aspiration other than health as a driving force. Again, it was well recognized that making CLTS a national sanitation policy will promote its implementation.

Ghana has endorsed CLTS in the sanitation policy as an approach to end OD (CLTS knowledge Hub, 2015). Pakistan is another country with a National Sanitation Policy which promotes CLTS as one of its basic principles which is backed by reward for outcomes. This serves as incentives for communities that attained ODF status (WSP, 2007). The North West Frontier Province (NWFP) village of Inzer Killi with one hundred and eighty households (HHs) in the Mardan district of Pakistan was the first community to be declared ODF within forty days and it received a reward of five thousand US dollars in 2006 (WSP, 2007). The attainment of an ODF status within forty days, indicates clearly that the provision of fiscal incentives implies a move from financing sanitation inputs, such as household latrines, to an approach placing much emphasis on demand creation and the reward for communities that have collectively been able to achieve ODF status. By the provision of incentives, the scheme package goes a long way to

help raise the status of the communities, thereby creating peer pressure and competition among neighbouring communities within and across the district.

There is an increasing need for the standardization of monitoring tools and mechanisms for the evaluation of CLTS projects, and the use of relevant data that is already being collected. The differences with indicators as well as the reporting structures in CLTS implementation processes along with decentralized data management system will lead to proper usage of data for good decision-making. Based on the experiences with community led total sanitation implementation by the Water and Sanitation Programme (WSP) in Indonesia, it is recommended that follow up activities should be given a structure that is verifiable by establishing a periodic checkup for the desired progress by using quality indicators for measuring the success in the communities triggered. According to Mukherjee (2012), institutional adoption of structured follow-up processes also enables funding to be sourced.

The need for a system of reporting structure on indicator based was expressed in a report from a study in Kenya (Tiwari, 2011) and as well as Ghana (Magala et al., 2009) among other countries. Community based level monitoring was also seen as vital for the sustenance of the implementation of Community Led Total Sanitation. In a study by Coombes et al., (2011) it was found that the only grey literature cited as an example was on community-based registers in Tanzania, which were basically found to be largely under-utilized. For Coombes et al., (2011), Tiwari (2011), the need to actually generate values for the collection and monitoring of data and use it for improved implementation of Community Led Total Sanitation outcomes was vital and was frequently expressed. One way of overcoming this type of obstacle is presented by CLTS practitioners in Kenya, who reported that to overcome an obstacle of this nature needs a participatory workshops at district levels which will allowed CLTS or WASH teams to be able to analyze data collected in the field and learn how to improve the progress

through a round table discussions with peers in the sector, thereby increasing and placing more value on monitoring data and subsequently, as well as the data quality (Tiwari, 2011).

Experiences with pre-triggering, triggering, as well as follow-up activities in CLTS have been documented and the importance of post-triggering activities was highlighted as being an important step in achievement and the sustainability of ODF status in participating communities. A review of Sixteen documents stated experiences drawn with pre-triggering activities, which in CLTS implementation, is the initial entry, introduction and rapport building with the community leadership and other relevant stakeholders. Most documents however mentioned the importance of the pre-triggering exercise as an effort to have a successful triggering processes, but pre-triggering exercises differ from one country to the other and across different projects. A pre-triggering activity in CLTS in Zimbabwe describes pre-triggering as a meeting with the District Water and Sanitation Sub-committee, whiles that of India, Mozambique, Ghana, and Uganda describes a pre-triggering activities as taking place at the community level by engaging community leaders.

Key elements in the pre-triggering activities includes rapport-building, power and leadership relationships in the local context, and by conducting baseline surveys (Zulu n.d.). Brown, (2009) found that lack of pre-triggering and baseline survey were key short-comings identified in a CLTS project in Vietnam, thus indicating the importance of harnessing and including influential people in the community in the triggering event as important were not accounted for in the CLTS project. Recommendation by WSP from its CLTS implementation experience in Indonesia indicates that pre-triggering and triggering should be done by community based organizations rather than WSP or any other larger organizations. Furthermore, WSP reported that triggering should come to play where community leaders have expressed a demand for

participation in the implementation of CLTS during the pre-triggering exercise (Mukherjee, 2012).

With reference to the benefits of pre-triggering in Ghana's CLTS implementation, an evaluation conducted revealed participatory data collection at pre-triggering sessions was more successful when community members are involved and participate in the pre-triggering exercise. It helped the facilitation teams to come out with pragmatic strategies based on the pre-triggering baseline data collected on sanitation behavior and where community currently lies on the sanitation ladder (Magala et al., 2009). Various tools used in the triggering process have been described in the literature as often a direct reflection on CLTS training manuals and documents. In Liberia, Some documents referred to the adaptations of the traditional triggering technique which involves the triggering of a cluster of communities to create and encourage competition among communities speed up the change process towards the attainment of ODF (Phillips n.d.). Only one study has looked at the impact of triggering on the implementation of CLTS outcomes.

Faris et al., (2011) reported that the chances of one constructing and owning a household latrine in Ethiopia were about nine times higher among the households located in communities that were part of a walk of shame exercise than those households in communities that did not participate in the walk of shame triggering activity. A qualitative study on social norms by Dyalchand et al., (2009) with the Indian CLTS implementation has found little evidence in support of the claim that the triggering strategy on its own and sufficient enough to establish the perceived and collective norms in communities that are triggered, thus leading to a collective action that eventually leads to change in sanitation behaviours in a community.

The researcher also found that natural leaders (NLs), referred by others as early adopters, were very important in persuading and communication of vital information to the entire community

over a time frame, and also by their action instituting a collective norm in the community (Dyalchand *et al.*, 2009). Time and period set for the triggering activities is one other factor identified by players in the sanitation sector as being important for either the success or the failure of CLTS activities in a community. A few documents have also mentioned triggering at the time of harvest and or immediately after harvesting season, when people had the ample time at their disposable as well as income ("Shit in emergencies" n.d.), while that of Kenya suggests that triggering should be done to coincide with the period when natural resources such as coconut poles for latrine flooring and construction are available during the harvest time. (Chambers, 2009).

2.1.2 BARRIERS

In Malawi, Hockin (2011), observed that communities that had few follow-up activities had a slow progress of CLTS implementation and a higher number or percentage of natural leaders not active, as compared to frequent follow-ups carried out in triggered communities. An assessment in Kenya across six districts by Tiwari, (2011) reported that each triggered community needed five follow-up visits on average before it could attained and be declared ODF.

2.1.3 FOLLOW UP VISITS

A recommendation from Malawi in a study by Redick, (2011) suggested the training of natural leaders as a creative way to address the challenges associated with follow-up visits and to aid the natural leaders in identifying householders lagging behind in the CLTS implementation and which could go a long way to reduce the burden on the external players in charge of the CLTS follow-up sessions so as to ensure that efforts and more time is allocated on the later adopters in the community. In another study by Hockin, (2011) local health workers are recommended

for training and usage in CLTS follow-up activities in the company of natural leaders, so as to ensure that the needs of the natural leaders are met, understood and committed to that the CLTS-related work voluntarily engaged in. Follow-up conducted by outsiders to communities were largely seen as a positive move and a motivator in CLTS communities. Furthermore, follow up visits help to establish a sense of pride in communities as well as natural leaders (NLs) and rekindle the spirit of eagerness to show the positive change in the community (Tsegaye et al., 2009). Frequent visits by outsiders in Madagascar triggered communities vitally boosted the motivation of the community as public 'walk of praise' increased the self-esteem of households and community at large (Azafady 2011, Tsegaye et al., 2009), while experience in Ethiopia demonstrated that even though CLTS is a community-led process, outsiders are required to sustain the shame during triggering and to motivate the required change in the community.

In relation to the harmonization of CLTS implementation for the scale-up at the national level, a number of documents have stressed the need to harmonize the approach across implementing agencies and governments (Vidya Venkataramanan, 2012). In 2009, at a meeting of the water and sanitation sector players in East Africa, units of organizations agreed that without the harmonization and coordination of individual organizations in the sanitation efforts could lead to the duplication of work that would eventually lead to a reduced joint impact by players. Sijbesma et al., (2010) in a WSP study on sustainability of sanitation in Vietnam also concluded that organizations such as UNICEF have the duty to strategically coordinate and communicate rural sanitation strategy with other key players in the sanitation sector (NGOs) working in the area for maximum impact. Lessons learnt in CLTS implementation by Plan Uganda specifically targeted on getting commitment from all players in the sanitation sector, and not merely on the use of subsidies or incentives packages to win and to get communities attain ODF (Good

Practices, 2011). Furthermore, in Zimbabwe, the act of rallying behind communities CLTS program was made difficult in that neighboring, sanitation communities were supported by Plan International in the construction of household latrines, while the community under study was left on its own to adopt CLTS principles (Sigauke, 2009).

On the Total Sanitation Campaign implemented in India, it was also observed and reported that three to five follow-up visits were required after the community is triggered, in order to get the community achieve and sustain ODF status (Mehta n.d.). It was however reported that due to the inadequate resources for CLTS, follow-up activities became a major challenge faced by practitioners in the implementation of CLTS. These resource gaps identified were the shortage staff, poorly trained staff, and inadequate or no budget allocation for CLTS follow-up activities. Once communities attained and declared ODF, limited follow-up was identified as a problem in the maintenance of ODF status ("Uganda-Situational Analysis" 2009).

2.1.4 BEHAVIOUR CHANGE TECHNIQUES

The use of behavior change methods in CLTS implementation are focused on igniting a sense of disgust and shame about OD practice in the community. Schools in Bangladesh were reported as being the most effective motivator in the life of children, while that of community mapping, photographs of “shit eaters”, and the walk of shame were the most effective tools in igniting action during the CLTS triggering process. Competition created among communities on the other hand led to communities lagging behind in CLTS being put to shame and also offered support by their neighbours in the construction of latrines.

However, in an anthropological study of CLTS in Vietnam, it was revealed that a generational difference exists, because shaming and embarrassment was effective behavior with young people who were more easily embarrassed in terms of OD while the older people stuck to their

old ways. Brown (2009), recommended other motivating factors besides embarrassment, which has been tested and found to be a relatively a weak motivator in hampering but not stopping open defecation practices. In situations where market research on sanitation marketing approaches has been conducted prior to CLTS implementation, WSP experience in Indonesia suggests that field facilitators should adjust the triggering approach based on the community or people's motivations, abilities, and opportunities to change a behaviour (Mukherjee, 2012). Shaming as a tool for triggering was often used to trigger change in the behavior of such communities; incentives and motivators during post triggering activities for behavior change rested on the praising people and capitalizing on the pride felt by communities that succeeded in ending the open defecation problem.

The SLTS approach in Nepal used a “praise walk” to counteract the walk of shame used during triggering activities to motivate and get more households in communities to construct more latrines (CATS, 2011). Community members in Zimbabwe revealed that visits by outsiders who accord them respect and praise was a key benefit derived from CLTS (Sigauke, 2009). In Malawi, Hockin (2011) observed that sanitation leaders in communities were more motivated when the progress of work in the community is presented to authority figures who praise them for good work done.

The aims of CLTS is to move away from the tradition of constructing latrines to mainly sustain sanitation and hygiene behavior change. Grey literature in few projects has provided evidence of measuring sustained changed in behavior associated with CLTS. An evaluative report from Mozambique has pinpointed the need for an understanding on how effective the CLTS techniques have been in facilitating the desire behavior change (UNICEF, 2011). Furthermore, the emphasis on the achievement of ODF may make communities feel high in recognizing other important factors that are required for sustenance of behavior change in CLTS

implementation. The CLTS leader, Kamal Kar expressed that declaring and certifying of an ODF community status are seen as an endpoint in the CLTS implementation processes, instead of being seen as the beginning of a new process. After the initial spirit for and the courage to end OD goes down, the community can relapse and go back to the old ways of defecation in the open, thus defeating the key theme of the ‘total’ in CLTS approach. In the dynamics of post-ODF in CLTS communities, it is important that the communities declared ODF are able to move up in the sanitation ladder (Kar, 2012).

2.1.5 NATURAL LEADERS

Most documents discussion natural leaders did mentioned the role and the importance that children play in mobilization of communities towards a behavior change and thereby putting an end to open defecation. The use of children as NLs and the impact is not discussed widely. Plan Nepal described how children monitored progress towards ODF in one village and how Child club members did monitoring of open defecation places in the mornings. In children monitoring, when one is caught red-handed, children either whistled, clapped or shined torch lights when in the night, forcing open defecators to run away in shame. Open defecators feared being detected and humiliated by the children and stopped defecating in the open (Evaluation of CLTS, 2007). The involvement of children in the role of natural leadership in some countries must however be taken a second looked at as a result of different cultural and local factors or context that involves. Culturally, Children in Uganda do not have audacity or the voices to speak out publicly and there is a lot that needs to be done to have meaningful participation of children in CLTS implementations. The importance, involvement and training of women NLs have been documented in West Sumatra in Indonesia, where women served as NLs conducting triggering at the HH level instead of collective communal level triggering (Jamasy et al., 2008). Finally, in Kenya ministry of public health empowered the local women and led the important

role in the triggering and as well as leading the CLTS process (Tiwari 2011). Bangladesh situation however emphasized that women participation in CLTS triggering processes does not necessarily leads their empowerment, because the involvement in CLTS triggering does not mean that the females have the control over the construction of toilet in the community or at the household level. The construction and usage of a pour-flush toilet often increased women's workload as they have to ensure that there is enough water home for latrine usage (Mahbub, 2008). A report from one project in India indicates the involvement of women as a challenge as the families would not allow their participation in CLTS activities.

2.1.6 SCHOOL LED TOTAL SANITATION

Plan International's Pan-African CLTS project repeatedly referred to CLTS/SLTS as two main approaches that were closely related (Singeling *et al.*, 2011). School Led Total Sanitation (SLTS) experiences revealed that SLTS differ substantially from traditional CLTS approach which focuses much on the entire community. Three documents presented some data on school led total sanitation progress, but did not comment on the impact on sanitation and outcomes in terms of hygiene (CATS, 2011; Wicken *et al.*, 2008; Singeling *et al.*, 2011). One document in Nepal School Led Total Sanitation reported as reaching 90,000 households and 300 schools, 730 child health clubs formed, and as well over 1,000 school health teachers/teachers and headmasters were trained in the School Led Total Sanitatio (CATS, 2011). Plan Ethiopia reported that communities achieved their ODF status faster when teachers were used for the facilitation and monitoring as against the standard CLTS approach, but were silent on relevant evidence to substantiate this claim. However, in India a contrary observation was made that the progress of School Led Total Sanitation depends to a large extent on the teachers' understanding and knowledge of the SLTS processes. The project recommended teachers and children been triggered simultaneously so that the teachers could effectively inspire and ignite

children confidence or the community as a whole to actually mobilize them for action (Verma, 2010). The whole process was observed and seen as own by both teachers and students (Sanchez, 2011).

2.1.7 POLICY AND STAKEHOLDERS

As CLTS is adopted by governments into the national sanitation policy, District Environmental Health Officials (EHO), School Health Education Programme (SHEP) coordinators, Department of Community Development (DCD) staff, local non-governmental organizations (LNGOs) and other stakeholders take on the role of facilitating and monitoring the progress towards ODF attainment. As such, many CLTS projects have reported the training district levels officers as trainers for the training of facilitators on the ground.

Plan Sierra Leone reports of training of the district council's staff and other partner NGOs in order to allow them lead the triggering and monitoring process in the CLTS implementation. Serving as the link between the communities and the Ministry of Health and Sanitation in Sierra Leone were the district health officials, which increased their ability to serve as advocates for CLTS activities (CATS, 2011). The literature available provides no evidence on the impact of training by local governmental actors in the sanitation sector on the outcomes of sanitation and hygiene and no discussion on what so ever was provided on any potential conflict of interest which could emerge from the use of governmental sector actors for the implementation and monitoring CLTS. In Indonesia, the decentralization process increased the powers at the district and local levels, implies that the district health officials ability to petition their superiors have the potential to influence funding for CLTS implementation (Mukherjee et al., 2008). Plan Uganda reported that coordination between stakeholders at all levels that is, governmental, district, and NGOs in a centralized environment was necessary when it comes to CLTS implementation, but lacking. Staff at the District level do not only need more training in CLTS,

but also required a larger budget in the implementation of CLTS (Good Practices, 2011). In this instance, Plan Uganda opted to and worked directly with the sub-county staff, without the involvement of the District Health Inspector.

2.2 THE STATUS OF SANITATION IN THE NORTHERN REGION OF GHANA

Sanitation is a serious challenge in the northern region of Ghana. It is the ninth out of 10 regions in Ghana and it has the second highest open defecation practice, representing 72%. Seven out of ten residences in the Northern Region defecate in the open (MICS, 2012). Ironically the region is home to over 30 NGOs intervening in the areas of Water and Sanitation (WASH), with each district recording a minimum of one and a maximum of 7 NGOs. Since 2010, all the 26 MMDAs and the over 30 WASH NGOs have adopted the CLTS approach as a strategy to improve sanitation through behavior change. More than 50% of the over 4,412 communities in the region have been triggered but only about 5% of the communities have achieved ODF status. In Ghana, all MMDAs are obliged to implement CLTS with the introduction of the revised National Sanitation Policy, 2010, with or without donor support. The conversion rates from OD to ODF are very low. These results are worrying vis à vis the quantum of donor funds and technical expertise used in the process. Five percent of the population use household latrines, while 23% use shared latrines. The poor sanitation status has burdened the region with preventable sanitation related diseases, deaths, poverty and delayed development. The status of CLTS implementation in the region is summarized in Table 2.1, with further detail in in Appendix 1 and 2.

Table 2.1. The Status of Community Led Total Sanitation Implementation in Northern Region, Ghana

	2015	2016
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Indicators	Frequency	%	Frequency	%
Total No. of Communities	4589	100	4412	100
Total No. not triggered	2201	48.0	2172	47.3
Total No. Triggered	2388	52.0	2417	52.7
Total No. of ODF-Basic (out of Total Triggered)	959	40.1	942	38.9
Total No. of ODF Certified (out of Total Triggered)	113	4.7	224	9.3

Source: Adapted from NR EHSU presentation, July, 2016; ODF = open defecation free

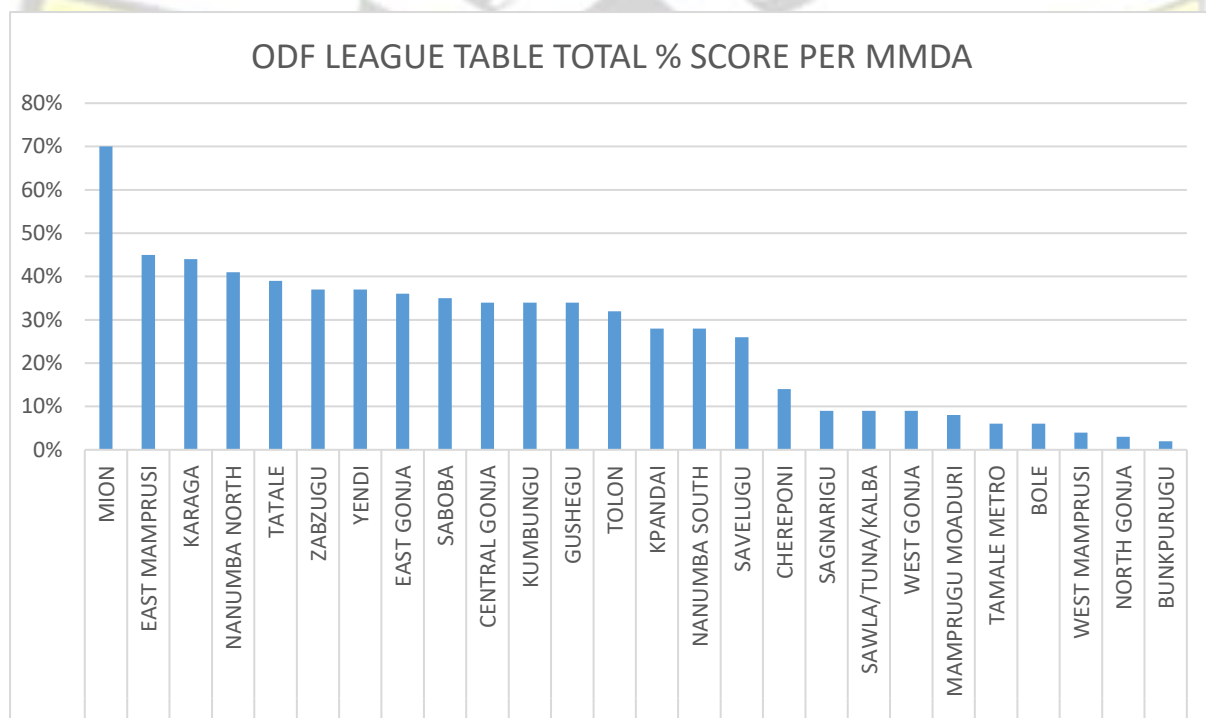


Figure 2.1 Open defecation free League Table depicting total percentage score and ranking of district assemblies. (Source: Northern Regional Environmental Health and Sanitation Unit, 2016) MMDA = metropolitan, municipal and district assemblies.

KNUST

CHAPTER THREE

3.0 METHODOLOGY

This chapter presents the study design, background of the study area, source/study population, sample and sampling technique, data collection tools and techniques, and statistical analysis as well as the ethical considerations for the study

3.1 STUDY DESIGN

This study used a cross sectional design and mixed methods involving both qualitative and quantitative methods. This permits the phenomenon under study to be assessed in multiple ways, thereby generating objective data for highly valid and reliable results (Creswell, 2009).

3.2 STUDY AREA

The Sawla-Tuna-Kalba District was formerly part of the Bole District. It was created by Legislative Instrument (L.I) 1768 on 18th February, 2004, and inaugurated on 27th August,

2004. Sawla Tuna kalba is a district in the northern region of Ghana and can found in the west of the Region and also shares boundaries with Wa West District in the upper west region to the North, and boarded with Bole District to the South, West Gonja District to the East as well as La Cote D'Ivoire to the West of the Black Volta. The population of the district is ninety-nine thousand, eight hundred and sixty three (99,863) with sex ratio of 93.6 (PHC, 2010). It has a total land area of about 4,226.9 square kilometers. Sawla, the district capital is about 189 kilometers North-West of Tamale, the Regional Capital. The study involves twelve (12) communities in the district.

In the district, rains last for five months, from June to October each year with a peak in August. The district records a rainfall figure of between 1000mm and 1500mm annually. Temperatures range from 36°C to 38°C between March and April and decline to about 28°C to 30°C between November and February, which brings on the harmattan. The vegetation of the district is mainly guinea savannah, with tall grasses and woodland. Tree species include dawadawa, shea, mahogany and nim. The branches of the nim trees are mostly used as rafters for most homes. The tall grasses may provide cover for the practice of open defecation and at the same time may be used together with logs obtained from common trees to thatch houses. The vegetation provides raw materials for the construction of latrines in the districts.

3.3 STUDY POPULATION

The population consists of all household heads (male and female) or caretakers residing in the respective communities, that is Loteyiri, Jentilpe, Nasoyiri, Jorbiyiri, Danivaar No 1, Blema No 1, Jembe, Die-eriyiri, Muiyiri, jelinkon, Kordanyina No 1, and Mona for more than a year. The reason for the use of these named communities is that they are among the first set of twenty-three communities that had CLTS implemented in the district and are more likely to present firsthand information on the prospects and challenges to the implementation of CLTS.

Household heads or caretakers who reside elsewhere and temporarily visit their families were not included in the study because they might not be conversant with the CLTS implementation processes and what it entails and present first-hand information on the prospects and challenges of CLTS implementation.

Three hundred community household heads or caretakers residing in the selected communities were the main study participants and were individuals aged at least twenty five (25) years and above. Ten departmental staff that have been involved in the CLTS implementation for at least one (1) year were interviewed. Information from the district assembly (STK) indicates that departmental staff involved in CLTS activities were not more than ten, which informed the number of departmental staff selected.

The focus group discussion (FGD) consisted of male and female participants. This consist of 4 House Hold Latrine (HHLs) owners in each community selected for the exercise based on their consent and availability at the time of entry in the community to carry out the FGD and four Natural Leaders. A total of 48 community members participated in four focus groups: four males being household latrine owners (HHLOs), 4 selected Natural Leaders (NLs) being males and females were selected because each community had 4 – 5 trained NLs. Household latrine owners and NLs will have separate FGDs. Women and men were grouped in like manner. Non-ODF communities had four NLs, HHL owners and non-household latrine participants being selected.

3.5 SAMPLE SIZE

Sampling was not done as the total number of households (HHs) in the twelve communities for the research totals three hundred and these were all administered questionnaire. This ensures

the proper generalization of the study and was purposively carried out without statistical involvement.

3.6 PARTICIPANTS SELECTION

There were no selection of participants for the study as each community entered, any household head or caretaker available and consented to participate was contacted for the study as the number of participants in all the twelve communities equals the number of participants needed for the study, thus purposively targeted.

The ten departmental staff for the study was CLTS facilitators who have been monitoring the 12 communities under the study and were the exact number of staff at the District Assembly. In addition, six facilitators who participated in triggering sessions (sensitization) of the ODF communities, aside monitoring were also be contacted. Each facilitator had worked in a pair of communities exclusive of others among the twelve communities.

3.6 DATA COLLECTION TECHNIQUES AND TOOLS

Questionnaires and focus group guides were used during the study.

1. Two sets of questionnaires were been used:
 - a. Community questionnaires: Each questionnaire is structured and divided into five sections, A to E. Section A focused on the background characteristics of the respondents, while sections B, C, D and E addressed the specific research questions in the study. The community questionnaire was pre-tested in twenty households excluded from the sample and feedback used to modify the final questions for data collection. These were administered to 300 household heads in the 12 communities.

- b. Departmental questionnaires: The questionnaire for this study contains both closed and open ended questions that enable respondents expressed themselves freely on the subject matter. In all, participants answered six main questions regarding the subject matter. These were administered to 10 CLTS departmental facilitators by the researcher.

Both questionnaires were in digital format loaded on smart mobile phones through the use of Open Data Kit software for simple, easy, fast, secured, and error free data collection.

2. A focus group discussion (FGD) guide which contained five (5) questions. The questions focused on the implications of CLTS intervention on the health and economic aspects of community life in communities that have attained ODF status and those that have not attained ODF.

Household surveys

The community questionnaire was administered in three main dialects (Brefor, Wale and Dagare) depending on which of them were spoken widely in the selected community. Questionnaire administration was conducted in participants' residence, in the mornings and evenings as it was convenient for the household heads. Data collection lasted for four weeks.

Departmental questionnaires were administered to the ten (10) departmental staff during break or at home within three days, so as to avoid disrupting official activities.

Focus group discussions

Both male and female latrine owners were invited to participate in the FGD. The groups were gender based to unearth different views on gender and sanitation. The discussions were audio recorded and notes taken by a research assistant. Questions from an FGD guide were discussed in turn by all members of the FGD group. Each new question was introduced when no further

new responses were given. A total of six FGDs took place in 3 selected ODF communities and 3 in non-ODF communities. This exercise took six days to be completed as one FGD was conducted in a selected community per day.

3.8 STUDY VARIABLES

The explanatory variables are the socio-demographic characteristics of respondent that includes the age, the sex, and the educational level. The outcome variable is the status of the communities of the study participants in relation to open defecation (ODF status). ODF status is based on the community having implemented CLTS and verified by the district inter-agency coordination committee on sanitation (DICCS) or regional inter-agency coordination committee on sanitation (RICCS) as ODF or not ODF.

3.9 DATA MANAGEMENT

Pre-coded questionnaires were used in data collection. This saved time in having to assign unique identity numbers during data entry. Digital questionnaires were used on Open Data Kit (ODK) to collect data through the use of mobile devices such as smart phones and tablets. Digital questionnaires on ODK were designed in a way which disallowed unintentional erroneous data entry and prevented missing values in aggregate data. ODK on mobile devices was also linked to Statwing (an online server and a web analytical tool) to ensure that data collected from the field were uploaded daily for safe record keeping. Before analysis, aggregate data were also checked to ensure that all questionnaires filled were successfully loaded onto the server. After 24 days of field data collection, preliminary data was analyzed using Statwing. The rest of the data were exported to SPSS version 20 software for further analysis. Before aggregate data was analyzed, outliers in the sample were checked and addressed.

3.10 STATISTICAL ANALYSIS

Descriptive statistics

For descriptive analysis, this study used measures of central tendency to analyze continuous data generated. Numeric data including, number of toilets per households, number of hand-washing facilities per household, income level, age, household size and number of defecation sites of respondents were all analyzed using median and interquartile range or mean and standard deviation as applicable. Ordinal variables such as educational level of respondents were illustrated using simple column charts and pie charts. For categorical variables such as gender, ethnicity, types of latrine pits used and kinds of household latrines, frequency distribution tables indicating percentage of responses were used.

3.11 ETHICAL ISSUES

Permission to conduct the study in the selected communities was sought from the District Assembly. Furthermore, chiefs and opinion leaders in the various communities were also met and informed about the study before entry into their communities. The study was further explained to the HH heads to be interviewed and each respondent provided with a consent form. Acceptance to participate in the study was indicated by signing the form or thumb printing, where applicable. Data collected was kept confidential and only group data were reported. All participants were treated with respect. Written informed consent was obtained from departmental staff and FGD participants before data collection

3.12 LIMITATIONS AND STRENGTHS OF THE STUDY

Accessibility to some communities was difficult as research support team could not reach some communities due to the presence of rivers and big streams flooding their boundaries. This extended the period to ensure that targeted communities were reached and affected the original

budget for the research. Again, the study cannot be generalized due to contextual differences in other parts of the country.

An advantage the study offers is the differences in ODF and non-ODF communities, which could inform future implementation of CLTS base on leadership style, topography of the area and communal spirit.

There was weak community leadership in non-ODF communities, which affected the success of CLTS. Some of the chiefs in the area were non-residents and had delegated their responsibilities to caretakers who did not wield the same power as the chiefs.



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CHAPTER FOUR

4.0 RESULTS

4.1 BACKGROUND CHARACTERISTICS OF STUDY PARTICIPANTS

Table 4.1 summarizes the background features of the study participants. A total of 300 households (HH) made up of two hundred and nine males representing (69.7%) and ninety-one female household heads representing (30.3) were interviewed. Nasoyiri had the largest number of households (17.3%), while Di-eriyiri (2.3%) had the least number of households. Majority (42%) of the respondents were aged between 30 – 40 years across all the 12 communities where CLTS was implemented. Two hundred and thirty-six respondents were without formal education (78.7%) and only three respondents (1.0%) had attained tertiary education. Two hundred and ninety-eight respondents (99.3%) were predominantly farmers.

Table 4.1: Background Characteristics of study participants

N/O	Community of residence	No. of participating households	Percent (%)
1	Blema No 1	12	4.0
2	Danivaar No 1	17	5.7
3	Di-eriyiri	7	2.3
4	Jelinkon	49	16.3
5	Jembe	9	3.3
6	Jentilpe	45	15.0
7	Jorbiyiri	24	8.0
8	Kordanyina	31	10.3
9	Loteyiri	22	7.3
10	Mona	23	7.7
11	Muiyiri	9	3.0
12	Nasoyiri	52	17.3
Age Distribution			
1	20-30	35	11.7
2	30-40	126	42.0
3	40-50	96	32.0
4	50-60	43	14.3
Sex Distribution			
1	Female	91	30.3
2	Male	209	69.7
Educational Level			
1	None	236	78.7
2	Primary	31	10.3
3	JHS	19	6.3
4	SHS	11	3.7
5	Tertiary	3	1.0

	Primary Occupation		
1	Farming	298	99.3
2	Teaching	2	0.7

Source: Field Survey (2017)

4.2 RESULTS OF THE QUANTITATIVE SURVEY

4.2.1 STATE OF SANITATION: USAGE AND TYPES OF TOILET FACILITIES

The usage of household latrines as the main defecation point was high in CLTS communities that were ODF as all households constructed latrines and shared with the few who might be vulnerable community members such as the blind, aged, cripple who might be staying alone in both ODF and non-ODF CLTS communities, 66.3% of households said they did not share toilet facility and 4.0% used shared latrines. Twenty nine point seven per cent of respondents were practising open defecation in their various communities. Latrine owners in both CLTS ODF and non-ODF communities reported that the main place for defecation has been the latrine which represents 70.4 % of respondents who did not engage in OD. Majority of the respondents from non-ODF communities of Nasoyiri and Kordanyina No.1, recorded the highest number of households that shared their facilities with others. In ODF communities, children aged 5 years and above were most likely to use a household latrine once the latrine is available. Children were also much involved in the CLTS implementation processes up to the attainment of ODF status, as some served as NLs (Figure 4.1).

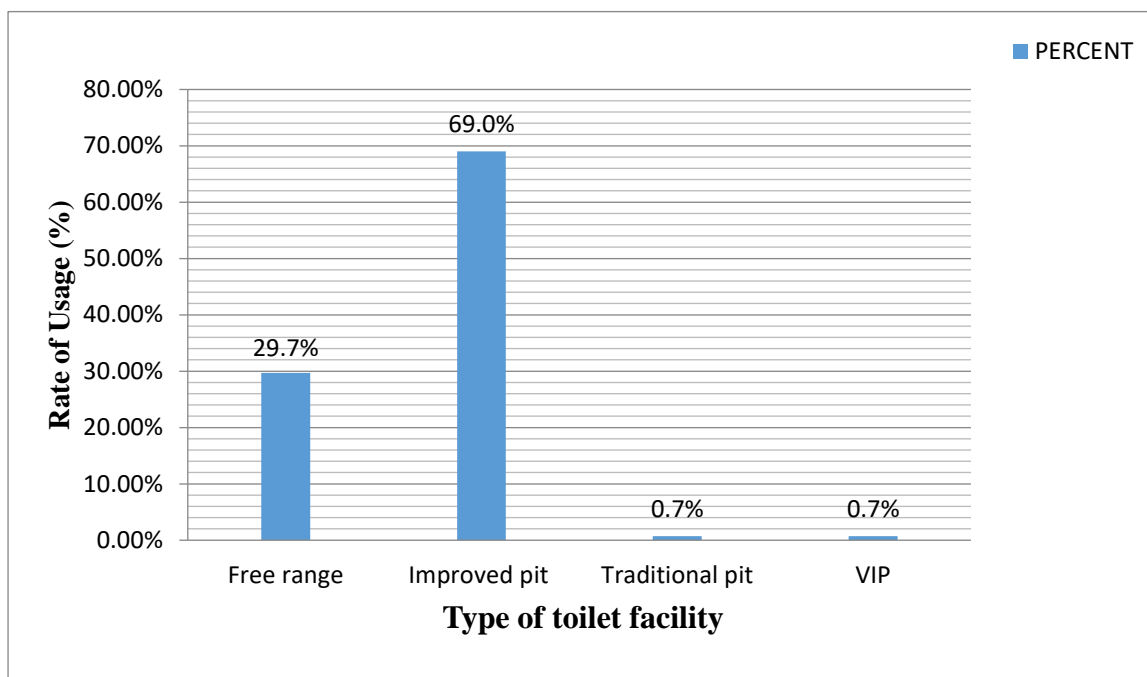


Figure 4.1: Usage rates by type of toilet facility

4.2.2 INSTITUTIONAL ROLE IN CLTS IMPLEMENTATION IN SAWLA TUNA KALBA DISTRICT

To address Objective 2, institutional roles in CLTS implementation were identified in the study area. The implementation of the CLTS approach to ending open defecation in STKD is been implemented by Global Communities Ghana, an international NGO in partnership with the District Assembly (DA). The departmental level survey revealed that the DA plays an important role in implementing CLTS at the district level by making the staff available to support in the triggering and follow up of the activities involved in the CLTS implementation. However, the DA has a role to support financially in the implementation of the CLTS, which have neglected by the STKDA. The staff were mainly from the Environmental health and sanitation unit (EHSU) and the Department of Community Development (DCD). The staff

from these two departments at the DA, as well as motor bikes/vehicles for monitoring, venues for CLTS activities were the main institutional roles played by the DA in CLTS implementation in the study area. Departmental staff also reported that chieftaincy institution and assembly members at the grass root level in the various communities were actively involved in the mobilisation of communities to end OD (Figure 4.2).

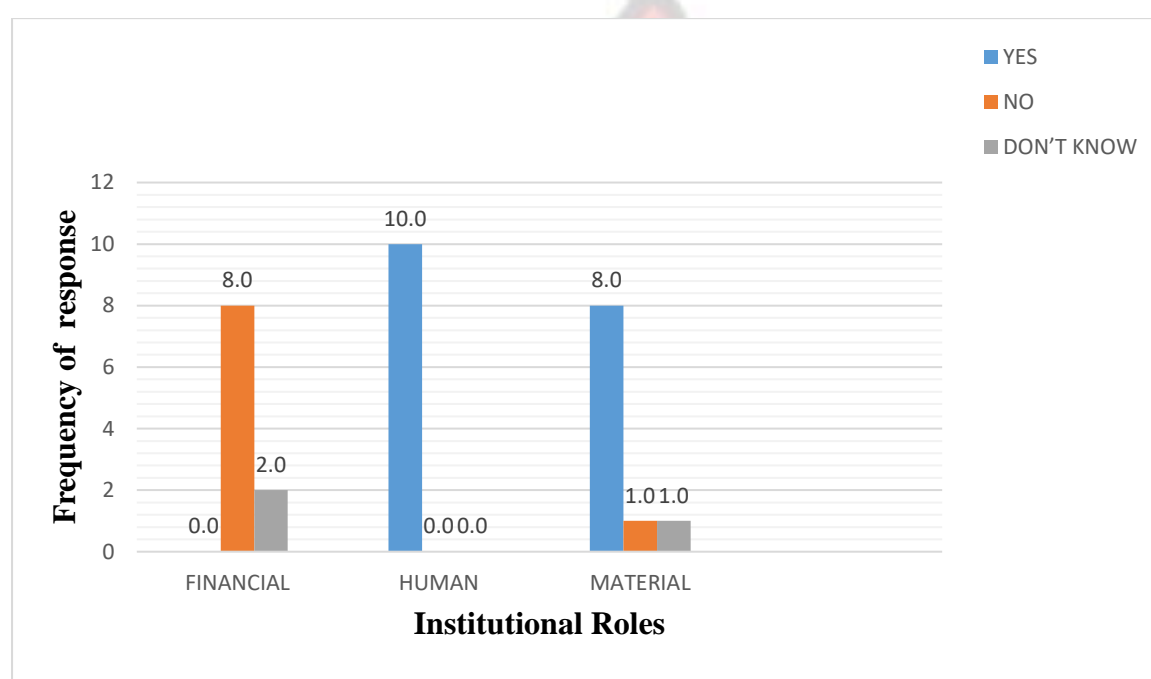


Figure 4.2: Institutional role in Community Led Total Sanitation implementation in Sawla Tuna Kalba District

4.2.3 THE POTENTIAL OF THE COMMUNITY LED TOTAL SANITATION APPROACH TO END OPEN DEFECATION

To address Objective 3, factors that influences the achievement and the sustainability of a collective behaviour change by participating communities to become ODF were identified. The survey also revealed that, majority of the respondents across all communities under review representing 98.7% agreed that CLTS implementation has the potential to end open defecation.

Most of them reported that open defecation has nothing to offer but illnesses to the community and children, hence they took the idea as if it was their own after they had been triggered using CLTS tools such as the ‘walk of shame’ (an exercise conducted to defecation areas to course shame and disguised among community members) and ‘defecation area map (a sketched map depicting important land marks, houses in the community used in the triggering processes). Communities felt disgraced and disgusted during the triggering processes and the reason that they ‘eat their own shit’ in the practice of OD when the disease transmission route was explained to them.

These factors among others ignite and influence the collective behaviour for a change from an undesirable state of OD to a more acceptable, desirable state of ODF, void of faeces in the open. Latrines are constructed from locally available materials. Only a smaller number of respondents representing 1.3% do not think CLTS is the way out in ending open defecation. They reported that they expected building materials such as cement and iron rods should have been offered at no cost (Figure 4.3).

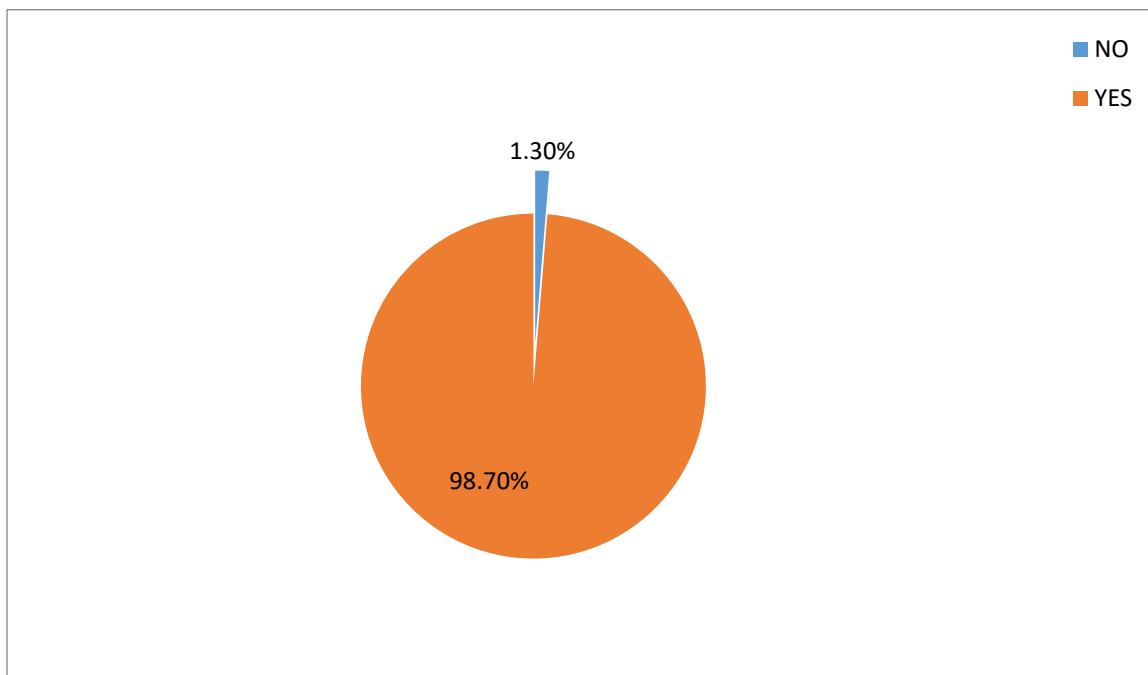


Figure 4.3: Potential of Community Led Total Sanitation approach to end Open defecation

4.2.4 REPORTS BY HOUSEHOLD LEADERS ABOUT THE LACK OF PRIVACY IN OPEN DEFECATION

Respondents in CLTS communities rated as been functional, the privacy and the comfort of the latrines as their main defecation area. When asked to indicate their response to the statement that ‘Open defecation provides no privacy’, 29.7% of respondents strongly agreed; 69.7% of respondents agreed and only 0.7% of respondents were not in agreement (Figure 4.4) Interestingly, respondents from non-ODF communities of Nasoyiri and Jelinkon all agreed to open defecation not providing privacy. Figure 4.4b indicates that 64.7% of respondents reported that open defecation is embarrassing, while 35.0% of them disagreed strongly. This was supported by the notion that OD provides manure and food for pigs. Therefore, stopping OD will mean fending for these animals to survive.

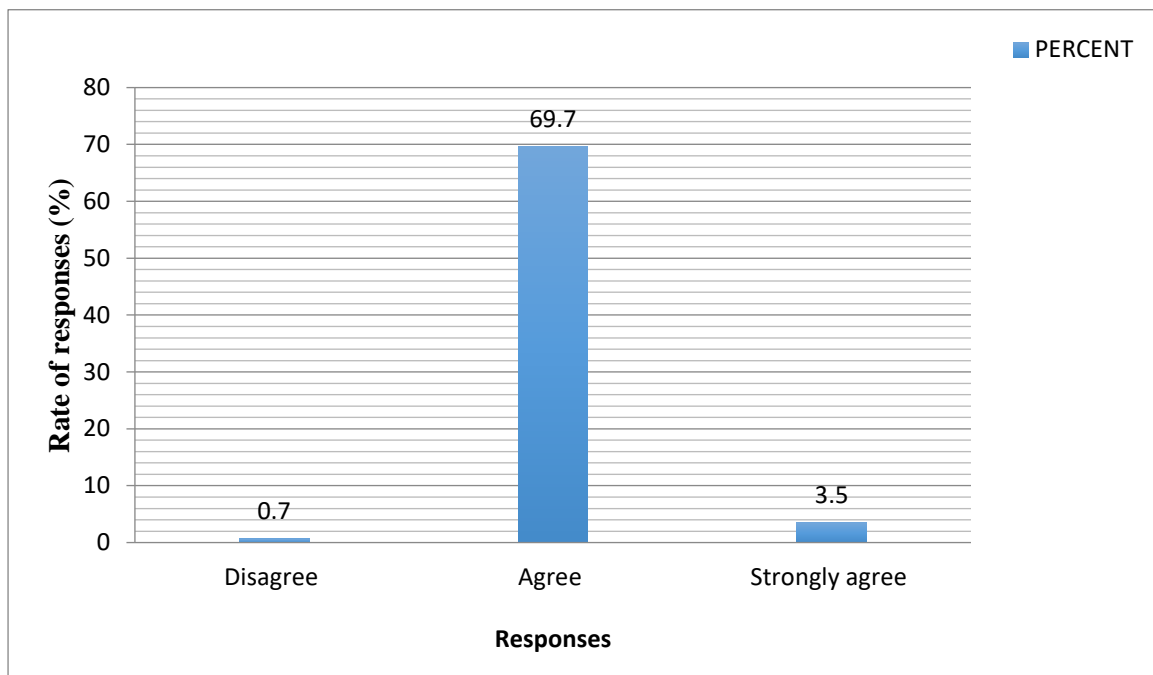


Figure 4.4: Responses to ‘OD provides no privacy’

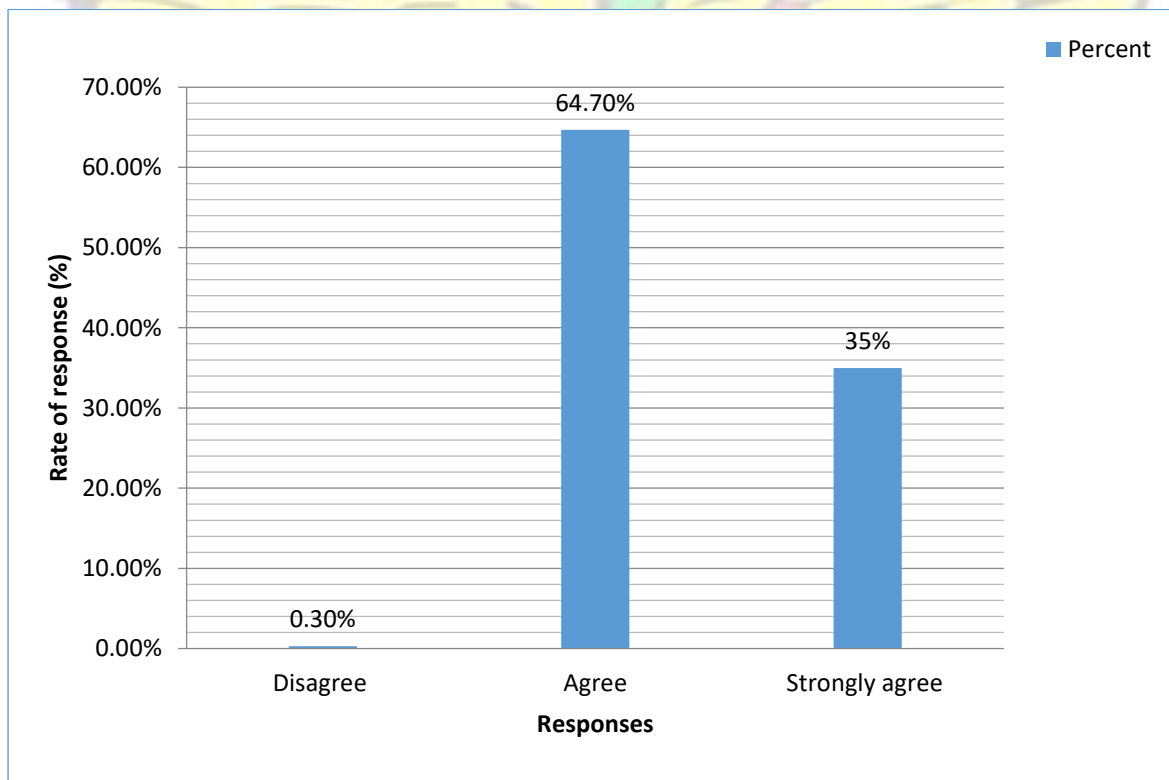


Figure 4.5: Responses to ‘OD is embarrassing’

4.2.5 REPORTS BY HOUSEHOLD MEMBERS ABOUT OPEN DEFECATION

Observations during the survey showed that community members were aware of the health implications of open defecation to their children and to the community. They see sickness and diseases as a major hindrance to their economic break through and the introduction of CLTS approach as a window of escape from diseases. They build and own latrines without external support (subsidy). They remarked about the lack of privacy, embarrassment and shame some have faced in practicing OD:

“.....as I got closer to my in-law’s house, I went into the bush and squatted comfortably in between the trees. Then I saw my in-law walking towards me, I didn’t know whether to fly or enter the ground, I had to clear my throat to alert him that there was someone in between the trees.” (Female FGD participant)

Figure 4.5 summarises the perception of household heads regarding open defecation and risk of diseases. It shows that 60.7% of respondents agreed that children are at risk of diseases when people defecate openly and 39.3% of them strongly agreed. Thirty eight point three percent (38.3%) of respondents agreed that community was at risk of diseases and 61.7% of them strongly agreed. These perception among others have forced HHs to construct latrine in a bid to end open defecation.

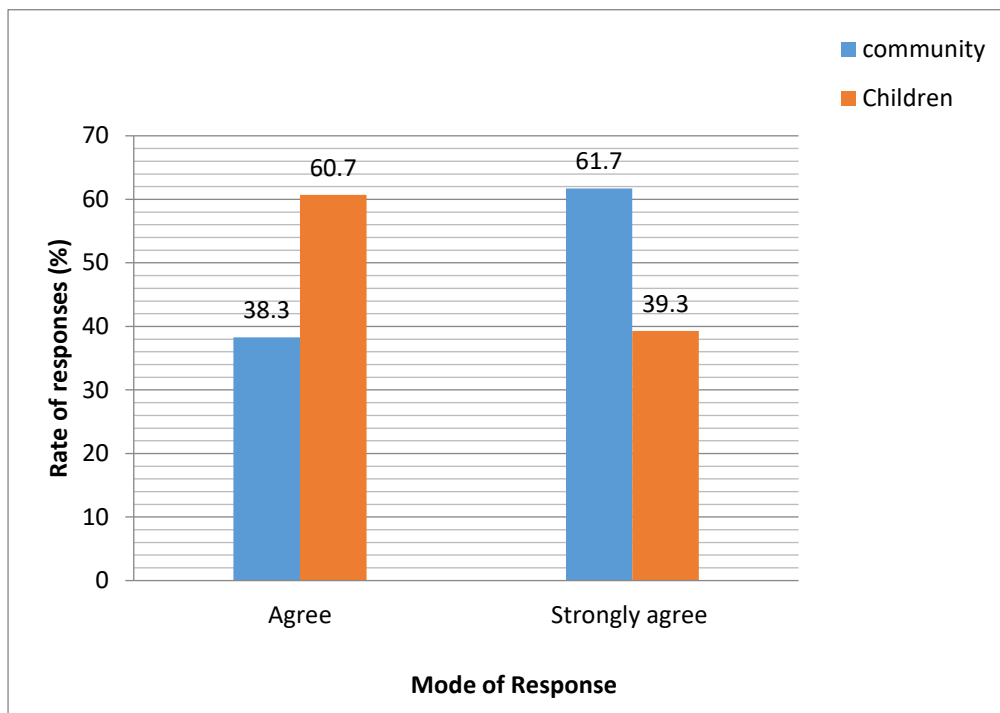


Figure 4.5: Perception about open defecation and disease risk to children and the community

4.2.5 OPEN DEFECACTION STATUS OF THE COMMUNITIES

On the basis of whether a community is ODF or not, 52.3% of respondents from eight communities confirmed their communities as being ODF, while that of the remaining four did not attain ODF status (Figure 4.6). Some community members do not know their community ODF status. For example, information available from the district environmental health office indicated Kordanyina is an ODF community duly verified by the Regional Inter-Agency Coordinating Committee on Sanitation (RICCS). The community however had mixed answers on the ODF status of their community as some responded ‘Yes’, and others indicated ‘No’.

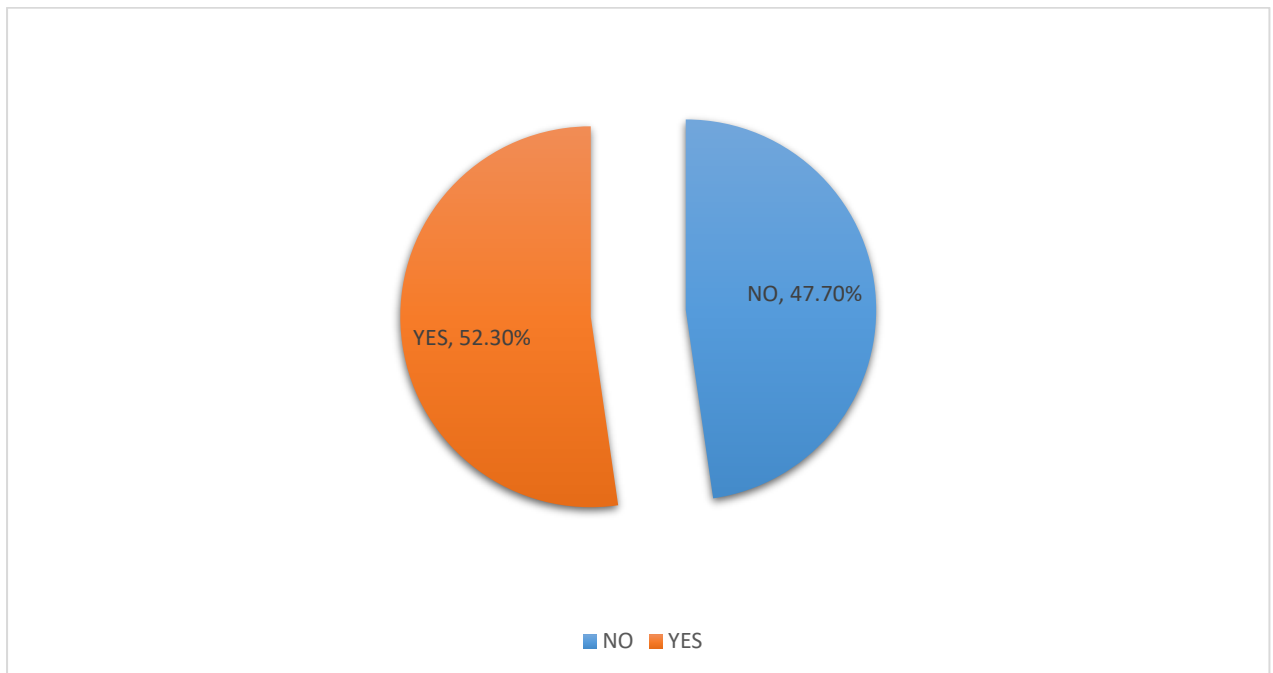


Figure 4.6: Response on Community ODF Status

4.3 RESULTS OF QUALITATIVE SURVEY

4.3.1 SIMILARITIES AND DIFFERENCES BASED ON STATUS OF OPEN DEFECATION AMONG COMMUNITIES

The major differences between non-ODF and ODF communities were strong leadership, loose soil, rocky land, homogeneous and heterogeneous nature of communities and those that have been support with materials in latrine construction‘(the taste of subsidy). As stated during an interview:

“Our community is a settlement of different tribe and religion, and our chief is not helping us, because of all these, we the natural leaders are relaxed in a way [....]. The initial thought of the community was that latrines were going to be constructed for them free”. (Male Natural Leader, non-ODF community)

In another FGD, both the gender-based groups stated that OD provides manure, food for pigs and fowls and stopping OD will mean fending for these animals to survive. This was a remark made among participants from non-ODF communities and one community that was ODF.

4.3.2 INSTITUTIONAL ROLES IN IMPLEMENTATION OF COMMUNITY LED TOTAL SANITATION

Institutional roles can be said to come from two main angles. The local or grass root institutions and the governmental institution. At the local level, chiefs and opinion leaders, assembly members, Natural Leaders were identified as structures that can support in the facilitation, achievement and sustainability of ODF in the respective communities. At the governmental level, the DA plays the most vital role in CLTS implementation as every Metropolitan, municipal and district assemblies (MMDAs) With or without external support is supposed to implement CLTS. The case of STKD is unique in that aside from human resources and venues for organising CLTS activities, the financing obligation of the district is left solely to the only NGO (Global Communities Ghana) operating in the district in WASH.

Information available at the district indicates that the assembly triggered eighteen (18) communities in 2013. As funds were not provided for the district facilitation team to monitor and conduct follow up visits, the communities were left on their own and no ODF was registered.

4.3.3 FACTORS THAT INFLUENCED THE ACHIEVEMENT AND SUSTAINABILITY OF COLLECTIVE BEHAVIOUR CHANGE TO BECOME ODF

The achievement and the sustainability of ODF status in CLTS implementation were driven by the desire to ‘stop eating each other’s faeces’, pride in latrine ownership to attain ODF, and collective decision making by all community members. The latter was backed by the enactment

of community bye-laws and strong leadership to enforce laws. In a FGD, a participant remarked:

“We were not happy when the team (RICCS) from the regional office came to verify our community for ODF and we failed. In fact, we, the youth, planned to attack and sack the man responsible for our failure from the community, but for the timely intervention of the elderly which averted the action.”

(Male FGD participant, non-ODF community)

In response to why they wanted to be ODF, another participant stated:

“We want to be popular and respected. And let me tell you, when we talk about latrines and ODF, and any of the members of the ODF community is around, s/he feels proud and walks with the shoulders raised high”.

(Female FGD participant, non-ODF community)

CHAPTER FIVE

5.0 DISCUSSION

5.1 SIMILARITIES AND DIFFERENCES BASED ON STATUS OF OPEN DEFECATION AMONG COMMUNITIES

The analysis in this research findings revealed that ODF and non-ODF communities have certain similarities and difference in sanitation practices. Community leadership is different which seemed to affect the success of CLTS. Chiefs and NLs did not wield the same power as non-ODF communities' leadership was weak. In order to trigger good sanitation practices, there is the need for full community leader's support to raise the profile and encourage communities which could most likely lead to the successes in ODF. The ODF communities in this study were homogeneous in character while the non-ODF communities are heterogeneous in character, hence cultural differences could affects OD status and CLTS implementation.

Majority of the respondents across all communities under review agreed that open defecation has nothing to offer but illnesses to the community and children. This is an indication that, awareness of the negative impacts of OD is common among both the ODF and non-ODF communities. Topographically, the study area comprising the all communities is the same. In a related study carried out by the water and sanitation program in Indonesia (WSP, 2011), there were no significant difference found in terms of topography of soil type or even the closeness to the forest and access to for sanitation supplies in the market. There were however significant differences in terms of proximity to water bodies in both ODF and non-ODF. In the study (WSP, 2011), all 20 districts communities located closer or with, rivers and beaches/lakeshore had the lowest rate in terms of access to sanitation and were less likely to attain ODF status. The present study do not supports the preference for defecating in water by non-ODF communities. All the communities studied were in proximity to zones.

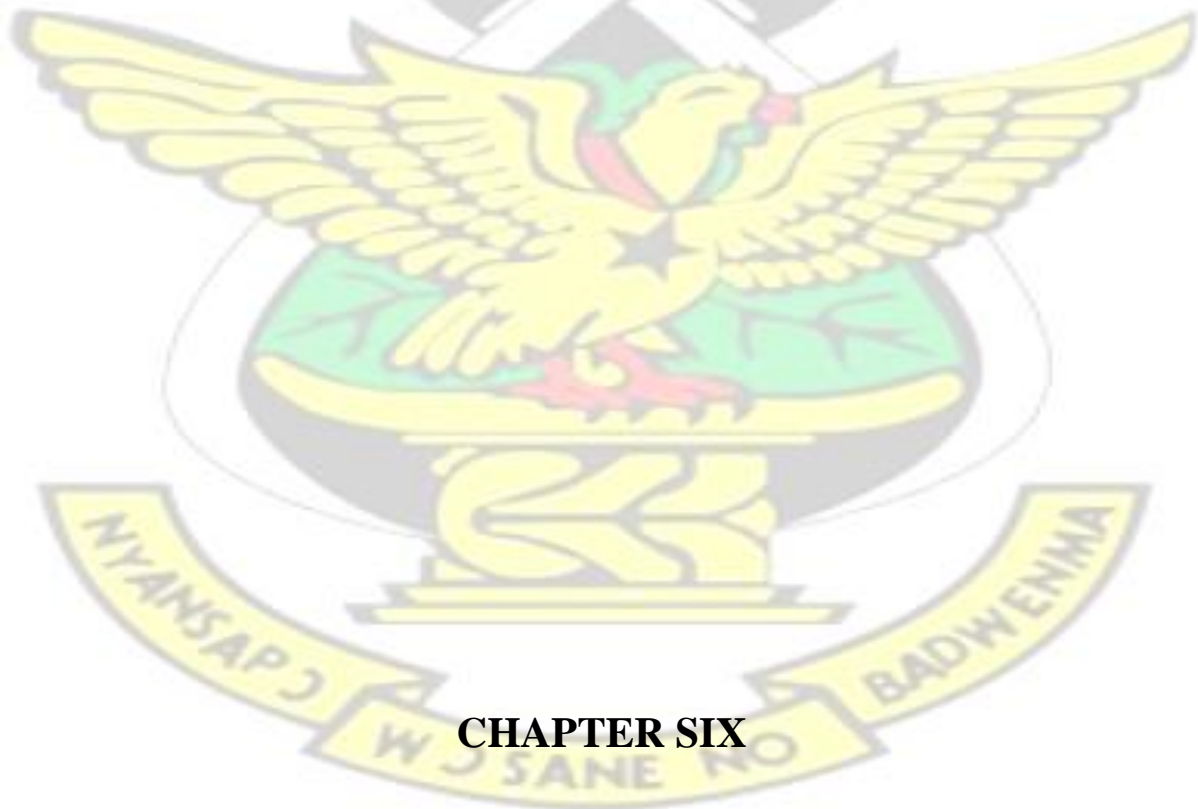
5.2 THE POTENTIAL OF THE COMMUNITY LED TOTAL SANITATION APPROACH TO END OPEN DEFECATION

In a baseline study conducted by (Swiss Federal Institute for Environmental Science and Technology / ETH) (Eawag) 2016, it was revealed that the prevalence of OD was 96.1%, latrine use was 2.2% and latrine ownership was 2.1% in STKD in a research by Eawag on the effectiveness and functioning of CLTS approach (2016). The baseline data also revealed zero ODF at the time. Ninety eight point seven per cent (98.7%) of respondents agreed that it is possible in STKD for CLTS implementation to end open defecation. With barely one and half year of CLTS implementation, 52 ODF communities have been registered, with 33 communities to be verified by the RICCS. In a tentative report by Eawag (2017), latrine ownership and use have also moved up from 4.3% - 21%, latrines under construction was 37%, with no latrine ownership being 42%. The present study showed the coverage was seventy point four per cent across the twelve communities.

In an interview with the DEHO, it was clear that 52 out of 105 communities triggered in CLTS approach were declared ODF by the RICCS, with 33 other communities being prepared and awaiting RICCS verification. STKD, which ranked 21st in the regional ODF league table, has moved up to the 7th position in the Northern region with 26 MMDAs. Even though the prospects of CLTS as an approach to the end OD in STKD shows promise based on the results attained so far, it has its own implementation challenges. Inadequate EHOs, CDOs and means of transport for field monitoring made it impossible for scale up and monitoring of triggered and already declared ODF communities. The 'subsidy tasted' communities and heterogeneous characteristics makes it difficult to mobilise such communities to attain ODF. At the community level, exist the challenge of migration of the able-bodied young men and women into the community who cannot do anything in terms of latrine construction.

5.3 INSTITUTIONAL ROLES IN IMPLEMENTATION OF COMMUNITY LED TOTAL SANITATION

The study revealed that, STKD aside from human resources and venues for organising CLTS activities, the financing obligation of the project is left solely to the only NGO (Global Communities Ghana) operating in the district in WASH. The level of alliance with the District Assembly seems very weak. This threatens the sustainability of the CLTS project being implemented. Information available at the district indicates that the assembly triggered eighteen (18) communities in 2013. As funds were not provided for the district facilitation team to monitor and conduct follow up visits, the communities were left on their own and no ODF was registered.



CHAPTER SIX

6.0 CONCLUSION

Latrine coverage, usage and ownership was higher in ODF communities as compared to the non-ODF communities. In both CLTS ODF and non-ODF communities, 70.4% of reported the latrine has been the only defecation point.

The implementation of CLTS in the STKD was implemented by Global Communities Ghana in partnership with the DA and its decentralized agencies without financial support from the DA as a major obligation which is a scoring indicator in the regional ODF league table. Respondents across all CLTS communities agreed that CLTS has the potential to end OD in the district as they reported OD as having nothing to offer other than diseases and not providing privacy. The desire to stop eating others faeces, pride in latrine ownership and to attain the level of ODF like other communities influenced the achievement and sustenance of behaviour.

Having revealed in the study that ODF communities were homogeneous in character while the non-ODF communities were heterogeneous in character which affected ODF status and CLTS implementation. Strong leadership from chiefs and NLs in the communities were a force for success. In conclusion, CLTS with its impact in the current sanitation situation in STKD might have the potential to end open defecation if current efforts are maintained and the limitations are addressed.

6.1 RECOMMENDATIONS

It is prudent for certain actions to be taken to enhance and sustain the gains derived from the implementation of CLTS.

6.1.1 RECOMMENDATIONS FOR THE DISTRICT ASSEMBLY

The level of partnership with the District Assembly seems very weak as the DA did not support financially as revealed by the study. This threatens the sustainability of the CLTS project being implemented by Global Communities Ghana in the STKD. Furthermore, the DA should make sanitation a priority and budget adequately for sanitation activities, motivate staff and provide motor-bikes and other means of transport for CLTS monitoring. Communities that attained ODF status should be awarded with a developmental need if need be by the district assembly. This will go a long way to encourage other communities to emulate the actions of ODF communities.

In as much as the leadership of communities is needed, the role of the DA in supplementing the efforts of community's leadership cannot be underrated. The EHSU as an agency of the assembly with the environmental laws on sanitation could be enforced as an institutional role in CLTS implementation.

6.1.2 RECOMMENDATIONS TO THE MINISTRY OF LOCAL GOVERNMENT RURAL DEVELOPMENT/SANITATION AND WATER RESOURCES MINISTRY

The DA should be given targets on ODF by the MLGRD/SWR to achieve within specified time frames.

6.1.3 RECOMMENDATIONS TO OTHER DECENTRALISED AGENCIES

Staff of the EHSU, DCD and MMDAs should all have a set target quarterly and review meeting to account for the achievements made. This should also come with motivation and awards for best performing staff or team in terms of number of ODF communities achieved.

6.1.4 RECOMMENDATION TO COMMUNITIES COMMUNITY LEADERS

Community level leadership should be strengthened by chiefs and other opinion leaders fully taking part in CLTS implementation.

Further directions for research include hand hygiene and issues related to sustainability



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APPENDICES

APPENDIX 1: CONSENT FORM FOR COMMUNITY QUESTIONNAIRE

STUDY NAME:

ENDING OPEN DEFECATION: PROSPECTS AND CHALLENGES OF COMMUNITY LED TOTAL SANITATION IMPLEMENTATION IN SAWLA TUNA KALBA DISTRICT OF NORTHERN REGION

RESEARCHER:

ADUAH JOSIAH AYIPAALA, DEPARTMENT OF PUBLIC HEALTH (MSC. ENVIRONMENT AND PUBLIC HEALTH), KNUST-AFRICA INSTITUTE OF SANITATION AND WASTE MANAGEMENT

CONTACT: 0203482720

PURPOSE OF THE RESEARCH:

The purpose of the study is to look at how community led total sanitation works and what problems the implementation could be facing to end free range practice (open defecation).

WHAT YOU WILL BE ASKED TO DO IN THE RESEARCH:

As a participant in this study, you are required to answer 12 questions from the questionnaire which will be read and explained for an informed decision as to participate. This is expected to last for fifteen minutes.

RISKS AND DISCOMFORTS:

The study does not have any present or future risk as you participate. As you partake in this study it will enlighten you about issues related to community led total sanitation implementation.

VOLUNTARY PARTICIPATION:

Your participation in the research is completely voluntary and as a participant, you may choose to stop participating at any time. Your decision not to continue participating will not influence relationship or the nature of relationship with the principal researchers or any assistant administering the questionnaire. This gives the indication that your participation is voluntary and not on compulsion.

WITHDRAWAL FROM THE STUDY:

You are permitted to withdraw from the study at any point in time, our decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, or any other associated with this research.

In the event that you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

CONFIDENTIALITY:

Any information given by you the participant will not be put out for people, well stored in a safe place. Information written on paper or any system will be deleted or burnt after the study is completed. This means that any information provided will be kept secret and protected.

QUESTIONS ABOUT THE RESEARCH

Should you have any question or reservation about the research in you may please contact the ethical research committee on 020-5453785

CONSENT

I consent to participate in the study having understood the nature of this project. I am not waiving any of my legal rights by signing this form. My signature or thumbprint below indicates my consent.

Signature/thumb print:

Date:

Participant initials:

Signature:

Date:

Principal Investigator's name:

APPENDIX 2: HOUSEHOLD LEVEL QUESTIONNAIRE

No	QUESTIONS	CODING	SKIP
	BACKGROUND OF RESPONDENT		
1	Respondent's age	20-30yrs 30-40yrs	

		40-50yrs 50-60yrs	
2	Sex	Male Female	
3	Educational level of respondent	Primary Some secondary Completed secondary Training college university	
4	Name of community (to be entered by interviewer)		
5	Primary occupation	Farming/rearing Trading Teaching Other(s) specify.....	
6	Religion of respondent	Traditional Islam Christianity Other(s) specify	
7	Ethnicity or tribe of respondent (to be entered by interviewee)		
LATRINE OWNERSHIP AND USE			
8	What kind of toilet facility does your household use?		
9	Do you share this toilet facility with other households?		
10	How many households use this toilet facility?		
11	Where did you get information about latrine construction?	CLTS facilitators Community members Posters Radio Other(s)specify.....	
12	Do you think that the CLTS implementation in	Yes No	

	your community has the potential of ending OD		
13	OD provides no privacy for you, do you...	<u>Possible answers (choose one)</u> Agree Strongly agree Disagree Strongly disagree	
14	People who defecate in the open put their children at risk of diseases? Do you	<u>Possible answers (choose one)</u> Agree Strongly agree Disagree Strongly disagree	
15	People who defecate in the open put the community at risk of diseases? Do you	<u>Possible answers (choose one)</u> Agree Strongly agree Disagree Strongly disagree	
16	OD is embarrassing. Do you	<u>Possible answers (choose one)</u> Agree Strongly agree Disagree Strongly disagree	
17	In this community, people would rather buy mobile phone/motor bike than build a toilet? Do you ...	<u>Possible answers (choose one)</u> Agree Strongly agree Disagree Strongly disagree	
18	Is your community ODF	Yes No	
19	If yes, has the ODF status been sustained or people have gone back to OD?	Sustained Back to OD Don't know	
20	If no, why is your community not ODF?		

Thank you

APPENDIX 3: CONSENT FORM FOR FOCUS GROUP DISCUSSIONS

You are invited to participate in this study, which will take place from January 2, 2017 to March 30, 2017. This form details the purpose of this study, a description of the involvement required and your rights as a participant.

Name of researcher: Josiah Aduah

Contact: 0203482720

Email: chiefaduah@yahoo.co.uk

The purpose of this study is:

- To examine the prospects and challenges of Community Led Total Sanitation implementation in ending open defecation in Sawla Tuna Kalba District in northern region.

The benefits of the research will be:

- To better understand the successes, prospects and challenges of Community Led Total Sanitation implementation.
- To identify significant strategies that could help in getting communities declared Open Defecation Free.

You are hereby invited to participate in focused group discussions about ending open defecation through the CLTS program. You are encouraged to ask questions or raise concerns at any time about the nature of the study or the methods I am using. Please contact me at any time at the e-mail address or telephone number listed above.

Our discussion will be audio taped to help me play back in your own words to avoid mistakes. The tapes will only be heard by me for the purpose of this study. If you feel uncomfortable with the recorder, you may ask that it be turned off at any time. You also have the right to withdraw from the study at any time. In the event you choose to withdraw from the study all information you provide (including tapes) will be destroyed and omitted from the final paper.

At the conclusion of this study, a research report will be drafted. Though direct quotes from you may be used in the paper, your name and other identifying information will be kept anonymous.

Volunteer consent:

By signing this consent form I certify that I _____ accept to
(Print initials here)
participate in the discussions according to what has been stated in this form.

(Signature)

(Date)

APPENDIX 4: FOCUS GROUP GUIDE

Engaging Questions:

1. What are the good things about Open Defecation?
2. What are the bad things about Open Defecation?

Exploratory Questions:

3. How is open defecation a threat to health?
4. How is open defecation a threat to the social image of your community?
5. How has the Community Led Total Sanitation program worked in your district?
6. How has the Community Led Total Sanitation program in your district helped in stopping Open Defecation?

Exit Questions:

7. Do you have any further comments on the Community Led Total Sanitation program in your district?
8. Do you have any further comments on ending open defecation in your district?

APPENDIX 5: CONSENT FORM FOR DEPARTMENTAL QUESTIONNAIRE

STUDY NAME:

ENDING OPEN DEFECATION: PROSPECTS AND CHALLENGES OF COMMUNITY LED TOTAL SANITATION IMPLEMENTATION IN SAWLA TUNA KALBA DISTRICT OF NORTHERN REGION

RESEARCHER:

ADUAH JOSIAH AYIPAALA, DEPARTMENT OF PUBLIC HEALTH (MSC. ENVIRONMENT AND PUBLIC HEALTH), KNUST-AFRICA INSTITUTE OF SANITATION AND WASTE MANAGEMENT

CONTACT: 0203482720

PURPOSE OF THE RESEARCH:

The purpose of the study is to look at how community led total sanitation works and what problems the implementation could be facing to end free range practice (open defecation).

WHAT YOU WILL BE ASKED TO DO IN THE RESEARCH:

As a participant in this study, you are required to answer 6 questions from the questionnaire which will be read and explained for an informed decision as to participate. This is expected to last for fifteen minutes.

RISKS AND DISCOMFORTS:

The study does not have any present or future risk as you participate. As you partake in this study it will enlighten you about issues related to community led total sanitation implementation.

VOLUNTARY PARTICIPATION:

Your participation in the research is completely voluntary and as a participant, you may choose to stop participating at any time. Your decision not to continue participating will not influence relationship or the nature of relationship with the principal researchers or any assistant administering the questionnaire. This gives the indication that your participation is voluntary and not on compulsion.

WITHDRAWAL FROM THE STUDY:

You are permitted to withdraw from the study at any point in time, our decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, or any other associated with this research.

In the event that you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

CONFIDENTIALITY:

Any information given by you the participant will not be put out for people, well stored in a safe place. Information written on paper or any system will be deleted or burnt after the study is completed. This means that any information provided will be kept secret and protected.

QUESTIONS ABOUT THE RESEARCH

Should you have any question or reservation about the research in you may please contact the researcher on 020-5453785

CONSENT

I consent to participate in the study having understood the nature of this project. I am not waiving any of my legal rights by signing this form. My signature or thumbprint below indicates my consent.

Signature/thumb print:

Date:

Participant initials:

Signature:

Date:

Principal Investigator's name:

APPENDIX 6: DEPARTMENTAL QUESTIONNAIRE

1. When did effective Community Led Total Sanitation implementation take place in the sawla Tuna Kalba District (STKD)?

2. How many Open defecation free communities have been registered in the District?
3. Does the district assembly support financially in Community Led Total Sanitation implementation?
4. If your response is 'Yes' to no. 3 above, how much support is provided per annum?
5. In what other capacity does the District Assembly support in Community Led Total Sanitation implementation?
6. Comment on the collaboration of the District Assembly and Non-Governmental Organisations in Community Led Total Sanitation implementation?

APPENDIX 7: STATUS OF COMMUNITY LED TOTAL SANITATION AT DISTRICT LEVEL

S/N	DISTRICT	DATE CLTS START	TARGET ODF DATE	TOTAL NO. OF COMM.	NO. OF COMM. TRIGG.	ODF
1	BOLE	2015	05/2016	143	46	0
2	BUNKURUGU	11/07/14	11/2017	250	18	0
3	CENTRAL GONJA	2009	12/2016	103	141	8
4	CHEREPONI	08/2012	11/2016	171	102	5

5	EAST GONJA	12/2009	11/2017	293	151	25
6	EAST MAMPRUSI	02/10/2014	07/2017	142	59	14
7	GUSHEGU	2009	07/2017	386	186	9
8	KARAGA	10/2009	07/2009	176	140	24
9	KPANDAI	12/2008	07/2017	275	213	7
10	KUNBUNGU	07/2012	07/2017	126	40	6
11	MAMPRUGU/M	01/2015	06/2016	46	10	0
12	MION	01/2013	12/2017	171	171	59
13	NANUMBA NORTH	12/2008	11/2007	197	117	19
14	NANUMBA SOUTH	19/08/2014	12/2016	141	114	4
15	NORTH GONJA	12/2015	10/2017	64	8	0
16	SABOBA	3/06/2012	05/2017	252	93	15
17	SAGNARIGU	11/2015	05/2017	182	24	0
18	SAVELUG/NATON	2008	12/2017	149	36	2
19	SAWLA	05/2015	10/2017	278	60	0
20	TAMALE METRO	2014	10/2017	117	79	0
21	TATALE	2008	12/2016	170	170	5
22	TOLON	2009	12/2016	107	73	6
23	WEST GONJA	23/10/2012	12/2016	74	37	0
24	WEST MAMPRUSI	2011	05/2017	89	19	0
25	YENDI	2008	07/2017	279	124	15
26	ZABZUGU	2012	05/2017	140	140	5

APPENDIX 8: SUMMARY OF THE STATUS OF COMMUNITY LED TOTAL SANITATION AT DISTRICT LEVEL

#	NAME OF MMDA	% OF ODF COM. AND ODF RELATED SCORES (A)	% OF HOUSE HOLD TOILET COVERAGE SCORE (B)	DICCS COORDINATION AND SUPPORT SCORE (C)	TOTAL % SCORE (D) A+B+C=D	ODF POSITION	REMARKS
1	MION	56%	10%	4%	70%	1st	Mion is the district with the least % of people who practice Open Defaecation in Northern Region.
2	EAST MAMPRUSI	34%	2%	9%	45%	2nd	
3	KARAGA	34%	2%	8%	44%	3rd	
4	NANUMBA NORTH	32%	2%	7%	41%	4th	
5	TATALE	27%	10%	2%	39%	5th	
6	ZABZUGU	31%	4%	2%	37%	6th	
7	YENDI	31%	2%	4%	37%	7th	
8	EAST GONJA	28%	2%	6%	36%	8th	
9	SABOBA	32%	2%	1%	35%	9th	
10	CENTRAL GONJA	25%	2%	7%	34%	10th	

Open Defecation Free (ODF) League Table at District level

Source: REHSD, June, 2016

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