UNIVERSITY OF CAPE COAST

FACTORS AFFECTING THE IMPLEMENTATION OF COMMUNITY–LED TOTAL SANITATION IN CENTRAL REGION, GHANA

IMMACULATE ADZIMAH

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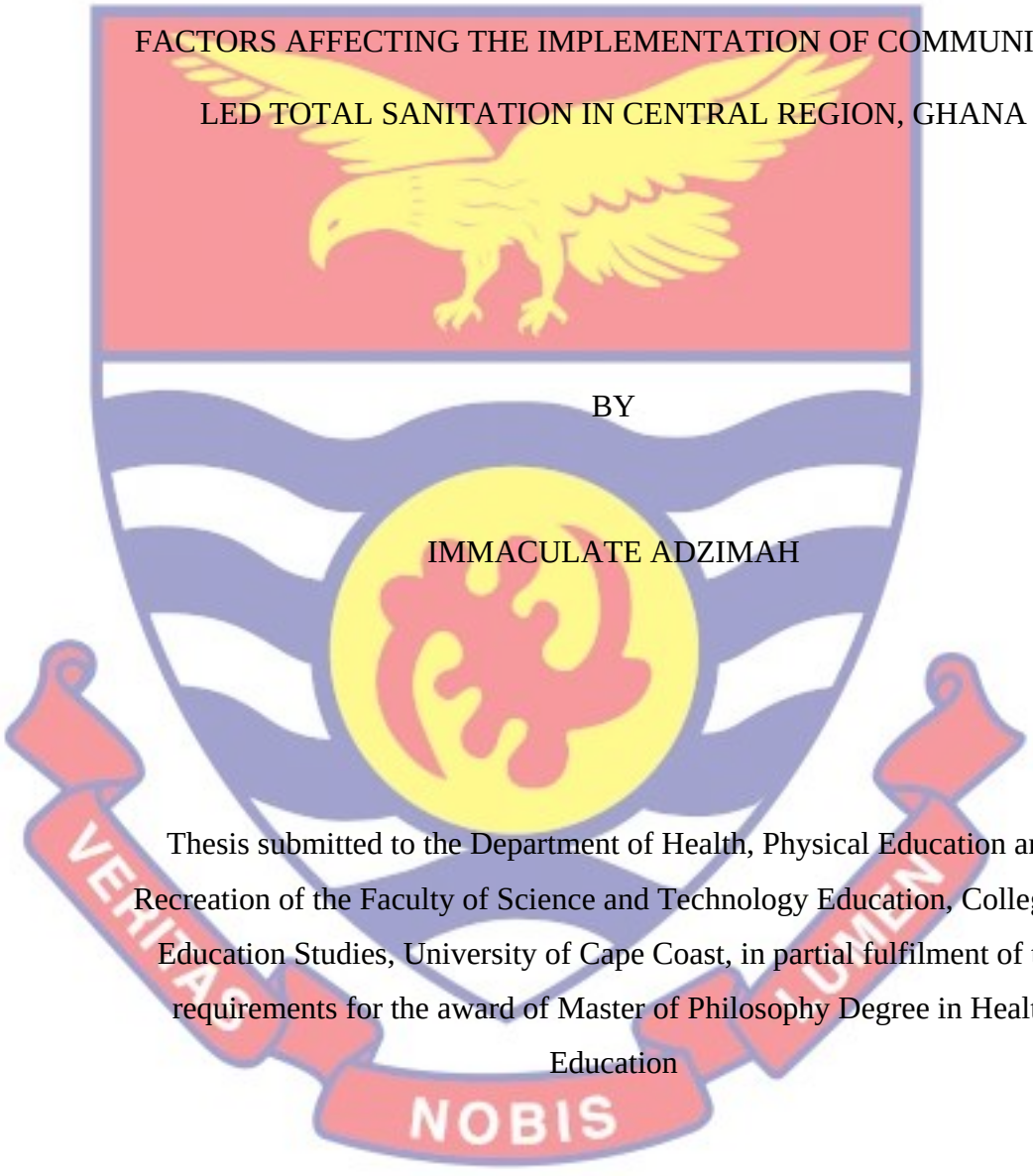

BY

IMMACULATE ADZIMAH

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature …… Date……

Name: Immaculate Adzimah

Supervisors' Declaration

We hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…… Date……..……...

Name: Dr. Edward Wilson Ansah

Co–Supervisor's Signature …… Date…….…….

Name: Dr. Daniel Apaak

ABSTRACT

Community-Led Total Sanitation (CLTS) is critical in communities' health, survival, and development. The purpose of this study was to find out factors influencing limited achievement of CLTS implementation in the Central Region. The study adopted the qualitative phenomenological survey design with 10 facilitators, 40 household heads and five verification officers. A researcher generated interview guide was used for data collection. Using content analysis, the study revealed a total of 18 themes as: Knowledge about CLTS implementation process and conduct of facilitators during implementation, project time frame being too short, Cultural beliefs and norms, financial challenges, Unfavourable soil conditions and Socio-economic and demographic factors. Furthermore, the interview revealed that, the project communities and facilitators have some appreciable level of knowledge about the importance of the CLTS project and the implementation process. Also, natural leaders want to be paid for organising the community members to eliminate open defecation (OD). The key challenges to the success of the CLTS project were: limitation in project time frame; issues about political parties, beliefs, traditions and norms, recognition and award for open defecation free (ODF) communities, logistical constrained and funds and lack of commitment from the District Assemblies. The limited success of CLTS, challenges the Central Region's effort at meeting Sustainable Development Goal (SDG) 6.2. However, appropriate coordination is needed to align the various CLTS projects to the same implementation modalities. In addition, District Assemblies are encouraged to own the CLTS project, invest into the project and equip the Environmental Health Officers to carry out the implementation according to planned.

KEYWORDS

Community-Led Total Sanitation

Environmental Sanitation

Facilitators

Natural Leaders

Open Defecation

Open Defecation Free

Post- Triggering

Pre-Triggering

Sanitation

Sanitation Interventions

Sanitation Marketing Approach

Subsidy Approach

Triggering

Verification Officer

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DEDICATION

To my children and my siblings.

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LIST OF ACRONYMS

AICD	Africa Infrastructure Country Diagnosis
CLTS	Community Led Total Sanitation
CWSA	Community Water and Sanitation Agency
DESSAP	District Environmental Sanitation Strategies and Action Plan
DWSPs	District Water and Sanitation Plans
GNWP	Ghana Netherlands WASH Programme
GSS	Ghana Statistical Service
HH	Household Head
HMIS	Health Management Information System
HPER	Health, Physical Education and Recreation
HIV	Human Immune Virus
HWT	Household Water Treatment
IRB	Institutional Review Board
JMP	Joint Monitory Programme
KESMAS	Jurnal Kesehatan Masyarakat Nasional
LMICs	Low- and Middle-Income Countries
MDGs	Millennium Development Goals
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MOH	Ministry of Health
NESP	National Environmental Sanitation Policy
NESSAP	National Environmental Sanitation Strategy and Action Plan
NGO	Non-Governmental Organization
NWP	National Water Policy

OD	Open Defecation
ODF	Open Defecation Free
OPT	Operant Conditioning Theory
PRECEDE	Predisposing, Reinforcement and Enabling Constructs in Educational, Environmental Diagnosis and Evaluation
PROCEED	Policy Regulation and Organizational Constructs in Educational Educational and Environmental Development
RCC	Regional Coordinating Council
RCN	Resource Center Network
REHO	Regional Environmental Head Office
RSHEP	Regional School Health Education Programme
RSMS	Rural Sanitation Model and Strategy
SDG	Sustainable Development Goal
SESIP	Strategic Environmental Sanitation Investment Plan
SLT	School Led Total Sanitation
SM	Sanitation Marketing Approach
SP	Subsidy Approach
SSA	Sanitation Service in Sub-Sahara Africa
TAS	Traditional Authorities
TSSM	Total Sanitation and Sanitation Market
UN	United Nations
UNICEF	United Nations Children's Fund
VO	Verification Officer
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

Background to the Study

One major challenge of Ghana today is environmental sanitation (Crocker, Saywell, & Bartram, 2017). In terms of open defecation, Ghana was rated second in Africa for open defecation after Sudan (WHO/UNICEF-JMP, 2015), with about 5 million Ghanaians without access to a toilet. Moreover, about five million Ghanaians have no access to sanitary facility and about 19% of them practice open defecation (OD) (Osumanu, Kosoe, & Ategeeng, 2019). Osumanu et al. (2019) again state that, though OD is mainly practised in rural communities, about 8.25% of urban dwellers are also into the practice, making the achievement of the sustainable development goal difficult. The Sustainable Development Goals (SDGs) are a set of 17 connected universal goals aimed at ensuring a better and more sustainable future for everybody. Goal six of SDG is to ensure availability and sustainable management of water and sanitation for all globally (UN, 2018). Sustainable Development Goal 6.2 specifically state that open defecation must end by the year 2030 (WHO/UNICEF, 2017). Meanwhile, Central Region has only 19% in its sanitation coverage (Ghana Statistical Service, 2018). Thus, improvement in environmental sanitation in Central Region and Ghana as a whole is urgently important.

Sanitation involves providing clean potable water and equipment to help manage and dispose of human excreta and waste for public health, human dignity and development (WHO/UNICEF, 2015).

Environmental sanitation is the assessment, correction and regulations of environmental factors that may influence health (WHO, 1999). It also

comprises measures geared towards better living conditions, healthy settings and the overall quality of life. Furthermore, it includes treatment and dumping of waste beside the control of disease vector and the provision of sanitary amenities for public health and human dignity (WaterAid, 2010). For that reason, Community- Led Total Sanitation (CLTS) is intended to assist in the safe disposal of human excreta, particularly in rural areas.

CLTS is a new approach for organising communities to stop open defecation (OD) entirely to attain open defecation free (ODF) status (Bongartz, & Movik, 2009). The act of shitting in the open such as the beach, open drains, bushes and the like is known as Open defecation (Kar & Chambers, 2008). Also, the state where human excreta is concealed to prevent interference between humans and feaces is known as Open defecation free (ODF) in other words, is a state where people have stopped practising OD (Kar & Chambers, 2008).

This tradition of OD is inseparably integrated in the day-to-day life of many rural areas and urban slums. The practice is considered one of the most dangerous health and environmental threat (Ekong, 2015). Furthermore, these environmental threats are responsible for about a quarter of the total burden of diseases globally and as much as 30% in sub-Saharan Africa (Ekong, 2015).

Globally, diarrhoea diseases are as the result of poor environmental sanitation such as OD. These poor environmental conditions result in the death of 432,000 people annually and they are also a major cause in some neglected tropical diseases (WHO & UNICEF, 2017). Again, diarrhoea is one major cause of death, resulting in 19% of all deaths of children below the ages of five in sub-Saharan Africa (WHO, 2019). In addition, more children below five die from diseases of poor environmental sanitation, primarily OD than HIV, malaria and

tuberculosis combined, with many more irreversibly debilitated and stunted (Humphries, 2009). In a nutshell, poor environmental sanitation is a problem to national development such that individuals, families and the populations lose time and money to illness, and live shorter lives (Alfers, 2009).

Human excreta is very harmful, one gram of fresh excreta from an infected individual can contain about 104-108 viral pathogens, bacterial pathogens, protozoan cyst, and helminths eggs (Omarova, Tussupova, Berndtsson, Kalishev, & Sharapatova, 2018). Furthermore, because of its effects such as anxiety, the danger of sexual assault, and the loss of educational possibilities, inadequate sanitation has a negative influence on human wellness, social and economic growth (WHO, 2014).

WHO/UNICEF (2015) mentioned that about 2.4 billion individuals globally have no access to improved sanitation and about 946 million of them lack access to latrines, with around 70% of the 946 individuals living in the rural areas. Moreover, a billion globally which forms (14%) of the world population practise OD with 35% in sub-Saharan Africa (Fuller, Goldstick, Bartram & Eisenberg, 2016). In Ghana, 5 million people have no access to toilet facility and practise OD (WHO, 2014). Consequently, Ghana loses an estimated $79 million annually due to OD, and among 34 countries with the highest OD rate globally (UNICEF, 2017).

According to Contreras and Eisenberg (2019), 13 million deaths can be avoided through improved sanitation. Averagely, 36% of diarrhoea diseases can also be prevented through improved sanitation and about half reduction in diseases associated with general sanitation issues (Norman, Pedley & Takkouche). Furthermore, improved sanitation will increase productivity as

people will put up their best in their working places because they are healthy. The social burden on the government will also reduce as monies used in treatment of those diseases will be directed towards the provision of other social amenities.

Globally, different sanitation interventions were adopted by several governments, and non-governmental organisations (NGOs). These approaches include the subsidy approach (SP), Sanitation or Social marketing approach (SM), Total Sanitation and Sanitation marketing (TSSM), and School Led Total Sanitation (SLT). All these interventions towards improved sanitation produced unsustainable results (Bediako, 2016). The current environmental sanitation intervention is CLTS which aimed at extensive behavioural health change of the whole community. The ultimate goal for CLTS is to eliminate OD (Kar & Chamber, 2008). The concept involves shame and disgust, developed by Kamal Kar in 2000 in Bangladesh for rural areas and it has become an established approach globally since 2010. The implementation of CLTS needs step by step stages for which result will be achieved. The stages are pre-triggering, triggering, post-triggering and scale up (Kar & Chambers, 2008). Pre-triggering is that stage where all preparatory activities take place.

Facilitators acquaint themselves with the community, take information concerning the existing sanitation situation and prepare the community members to start the change process. The second stage is where community members are engaged by facilitators to commence the process of sanitation behavioural change. This process involves the use of tools in combination with special facilitator skills to help the community to conduct self-analysis of their sanitation situation (Kar & Chambers, 2008). Post-triggering involves an

intensive engagement with the community members in their bid to attain ODF status. Scaling up is where the communities are graded according to the CLTS protocols, passed and declared ODF. In CLTS implementation, facilitators' acquired skills-set, knowledge, organisational structure, and cultural competency play a critical role in the success of the project (Kar, 2008).

Operant Conditioning Theory (Skinner, 1953) and Precede Proceed Model (Green & Kreuter, 1992) support CLTS approach. The theory of operant conditioning focuses on reward and punishment system in addressing objective and avoiding disaster. The composition of Skinner's rewards system is referred to as positive reinforcements, and the punishment system also referred to as negative reinforcement which incorporate naming and shaming. Strengthen and sustain the idea behind a behavioural change. In addition to that, CLTS involves positive and negative reinforcement, where the community is cleaned of indecent exposure of human excreta and declared as ODF.

The precede model was formulated by Lawrence W. Green in 1974 and Green and Kreuter added Proceed model in 1991 to become Precede-Proceed model, which involves an extensive assessment done before the implementation of health program planning, and evaluation of an intervention with the assumption that intervention will improve the health behaviour of a community to achieve ODF environment.

Statement of the Problem

Successful implementation of CLTS will end Open Defecation (OD) and subsequently help control illnesses that are linked to poor sanitation (WHO, 2018). The ending of OD in the shortest possible time would be a welcoming news for Ghana, since the nation loses an estimated $79 million annually due to

this open defecation menace (UNICEF, 2017). It is worth noting that the country is among 34 nations with the highest OD rate in the world according WHO/UNICEF (2017). It must be stated that CLTS is yielding positive results since its introduction in the country in 2010. For example, in Northern Region, 2,005 (45.2%) communities out of 4,433 attained ODF status by 31st December, 2018 (WHO and UNICEF-JMP). In Upper West Region's Nandom District, 84 (95.4%) communities out of 88 attained ODF by early 2019 (Kuorsoh, 2019). Unfortunately, in Central Region, out of 2,909 communities, only 292 (10%) attained ODF status by the third quarter of 2018 (Central Regional Coordinating Council, 2018).

From the brief statistics given above, it is clear that the adoption and full implementation of the CLTS within the various communities in Ghana and for that matter the Central Region would go a long way to end OD. Now, the question is why did communities within the Central Region record abysmal success in CLTS implementation? What are the factors that accounted for the limited success of this laudable intervention, which strict adherence would impact positively on the health of the people in the Central Region? These and many more questions give impetus to the conduct of this investigation.

Purpose of the Study

The purpose of this study was to find out factors influencing the limited achievement of CLTS implementation in Central Region.

Research Questions

The investigation was directed by the following research questions:

1. How does the knowledge of the facilitators on CLTS implementation affect its implementation in the Central Region?

2. What behavioural approaches are used in implementing CLTS programme in Central Region?
3. What are the challenges that inhibit CLTS implementation in the Central Region?
4. How do ODF communities differ from failed communities in terms of settings in Central Region?
5. What are the challenges community members face in the construction of improved latrines from the CLTS programme in Central Region?
6. How do socio- economic, cultural and demographic factors affect CLTS implementation in Central Region?

Significance of the Study

The findings of this research will assist the Central Region environmental health sector in the successful implementation of CLTS. Again, it will also help the donors, implementers and other stakeholders to effectively assist failed communities to progress faster after verification by providing such communities with sustainable behavioural change toward sanitized status.

Delimitation

This study is delimited to only five (5) districts in the Central Region where CLTS was first piloted and are still participating in the programme. Also, the study did not include the implementers and the donors of the CLTS project.

Limitations

The 10 communities used in the study were purposively selected and were not necessarily the representative of all the communities in the five selected districts in the Central Region. The purposive sample used in this investigation limited the generalizability of the study's findings.

Definition of Terms

CLTS: It is an approach used in changing attitude and behaviour of community members to achieve ODF (Kar & Chambers, 2008).

Environmental sanitation: It comprises measures that are geared towards improving living conditions, healthy settings and the overall quality of life. Furthermore, it includes treatment and dumping of waste beside the control of disease vector and the provision of sanitary amenities for public health and human dignity (UNICEF & WHO, 2015).

Sanitation: It is the provision of quality drinking water and appropriate treatment and disposal of human excreta and waste water (WHO, 2018).

Open defecation free *(ODF):* This is where no human excreta are seen in an open area (Kar & Chambers, 2008).

Pre- triggering: Pre-triggering is that stage where all preparatory activities take place. Facilitators familiarise themselves with the community (Kar, Chambers, 2008).

Post- triggering: This involves an intensive engagement with the community members in their bid to attain ODF status (Kar & Chambers, 2008).

Triggering*:* This is the stage where community members are engaged by facilitators to commence the process of change in their sanitation behaviours (Kar & Chambers, 2008).

Organisation of the Study

The research is organised under five chapters. Chapter One covered background to the study, statement of the problem, purpose of the study, research questions, significance of the study, delimitation, and definition of terms. Chapter Two presented the review of the related literature, which covers

the concept of environmental sanitation, state of sanitation, sanitation related problems, theories of environmental sanitation, factors affecting sanitation, sanitation interventions, conceptual framework and summary. Chapter Three focused on the research methods, including research design, study area, population, sampling procedure, data collection instruments, data collection procedures, and data processing and analysis. Chapter Four is devoted to the results and discussion, and lastly, Chapter Five deals with the summary, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this study is to find out the factors influencing the limited achievement of CLTS implementation in the Central Region. The review of relevant literature was organized under: theories, concepts and empirical evidence. The first section reviews theories and their relevance to the study, the second section looked at the review of conceptual definitions of environment, sanitation, Community-Led Total Sanitation, open defecation, among others. The third session examines empirical investigations by Kar (2003), Kar and Bongartz (2006), and other authors in that area of CLTS, and closely related variables.

Theoretical Review

Theories are relevant to the work of researcher in the contemporary world, because theories lay the foundation for the research, produce variables for the study and direct methodology and analysis. A theory is a set of statements that establishes, foretells and clarifies observations. Theory describes how phenomena relate to each other, expected under unknown conditions (Bem & Loren de Jong, 1997). Operant conditioning theory and Precede-Proceed theory laid the theoretical foundation for this study.

Operant Conditioning Theory

The operant conditioning theory or operant learning theory (OPT) by Skinner (1938), a behavioural psychologist, posits that behaviour is shaped or changed through reinforcement and punishment. Skinner used the term operant to refer to any "active behaviour that operates upon the environment to generate

consequences.” His theory described how human beings obtain a collection of learned behaviours and exhibit such in everyday life.

Learning events that occur throughout a person's life, according to behaviour theorists, are the origins of behavioural modifications (Rosenstock, Strecher, & Becker, 1988). As a consequence of experience, learning is a generally permanent change in observable behaviour (Kimble, Rogers, & Hendrickson, 1960). Individual behaviour may be modified by modifying current learning opportunities or creating new ones. As it focuses on how organisms work in their environment, Skinner coined the term "operant conditioning." Skinner opines that if a behaviour has a bad outcome, the activity is unlikely to be repeated in the long term. If, on the other hand, the practise results in a pleasant outcome for the organism, that behaviour is more likely to reoccur in the long run because it is being reinforced (Holland & Skinner, 1961).

Any event that improves the likelihood of the preceding behaviour occurring again is referred to as reinforcement. According to Morris and Maisto (2001), it is also a side effect that raises the chances of the activity taking place. According to Lepper and Greene (1978), the term "reinforcement" was introduced into the language of instrumental conditioning in the mid-1930s, principally by Skinner and as a replacement for the old term "reward." Reward was more neutral than reinforce, reward simply names a class of events that have some effect on the organism, and whiles reinforcement is mainly strengthening. Any stimulus event that occurs after an operant response, according to Skinner (1979), enhances the strength or likelihood of that response occurring. Increased response probability is measured by response rate, which is a standard performance measure.

The theory highlights two types of reinforcement, positive and negative. The major purpose is to intensify the needed behaviour. By introducing the concept of reinforcement to an individual, the individual gets vitalized to carry out the behaviour in a repeated manner. Positive reinforcements are incentives that are provided with the goal of increasing the occurrence of a certain behaviour. Praise, applause, presents, money, inspiration, acknowledgement, and appreciation are some examples. Contrarily, negative reinforcement is the act of removing something unpleasant in order to promote a behaviour (Skinner, 1979).

Community-led total sanitation also employs reinforcements (rewards) in the form of a ceremonial gathering to honour and encourage communities that have attained ODF (Kar & Chambers, 2008). Other incentives include providing certifications and installing signboards with an ODF inscription describing the community's ODF status. These are done to recognise and appreciate the communities that have earned ODF certification for their appropriate hygienic functioning. Because they are both concerned with employing reward and punishment to transform unwanted behaviour related to OD to the desired ODF status, the OPT is pertinent to the CLTS idea. However, in the form of punishment, the CLTS concept entails using "shame and disgust" that is a walk of shame which is done with the community members along their open defection points. Knowing you are an outsider and seeing that disgusting situation with them, always put them to shame. This mobilises community people to take collaborative action to prevent OD. Attaining ODF minimises health risks such as increased infection of diarrhoea, dysentery, malaria, and schistosomiasis (WHO, 2014). According to Bediako (2016), this strategy uses

psychological punishment to modify unwanted behaviour (OD), as suggested by OPT.

Skinner argues that all human behaviour can be explained as learnt reactions to circumstances, and that practise is chosen depending on the outcome (Skinner, 1979). Ultimately, this theory contends that an activity that produces a satisfactory result (reinforcement) is likely to be repeated. A behaviour that has a negative effect (punishment), on the other hand, is acceptable to repress (Morris & Maisto, 2001). Sigler, Mahmoudi and Graham (2014) discovered a broad range of activities that are carried out across various CLTS programmes and frequently go beyond basic CLTS activities in research to analyse behavioural change approaches in CLTS programmes. They also found that, CLTS practitioners rated follow-up and monitoring activities as crucial for building an ODF community, but only one out of ten organisations did so throughout their initiative.

Precede-Proceed Model

Precede-Proceed Model is designed for effective implementation of health intervention projects, and survey studies due to its international acceptance as a community-based behaviour change model (Crosby & Noar, 2011). In 1980, the second phase, PROCEED, was included in the framework because of the significance of environmental elements as determinants of health and health behaviour change (Green & Lange, 1991). The PRECEDE and PROCEED are acronyms; Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation; and PROCEED; Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development. The name PRECEDE and PROCEED itself

presents the process and proceeding of an intervention (Glanz, Rimer, & Viswanath, 2008). The model has also been used in the public health field for prevention of illnesses and promotion of health. The model is complex and difficult to use, which some time leads to its incorrect implementation (Whitehead, 2001).

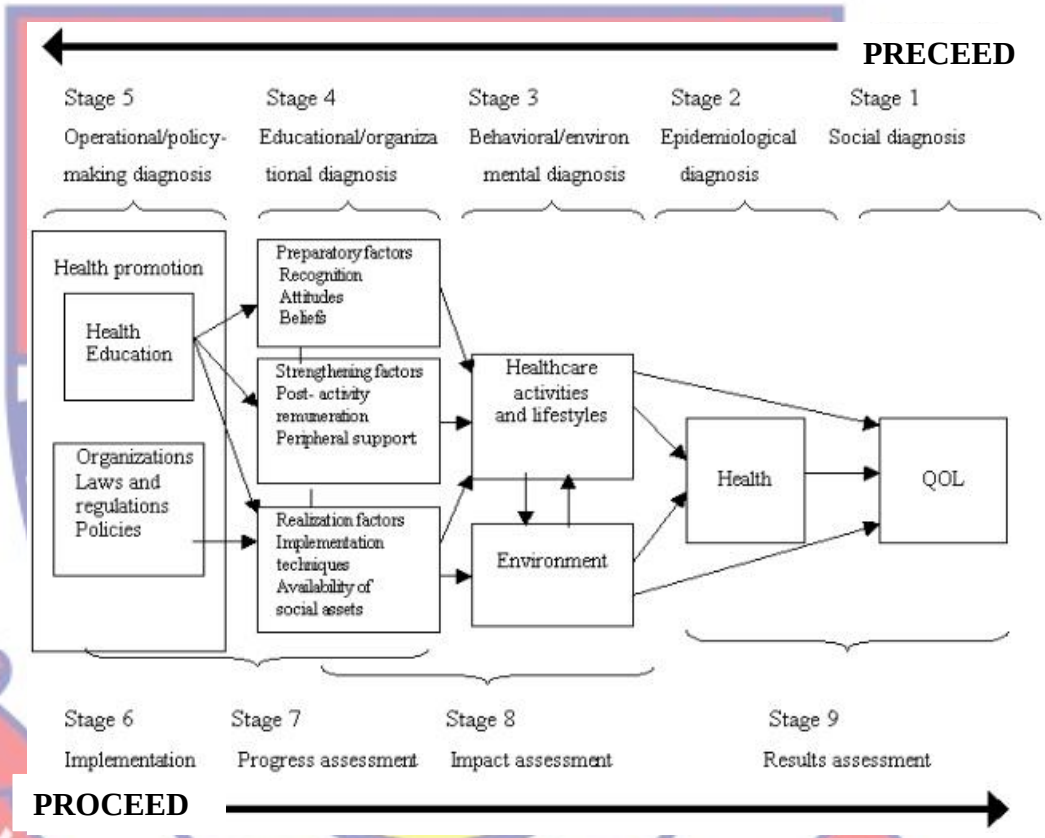

Figure 1: PRECEDE-PROCEED Model (Green, 2015).

Concept of Environmental Sanitation

Environmental sanitation refers to activities aimed at improving or sustaining the standard of core ecological conditions affecting the well-being of people (Ministry of Local Government and Rural Development [MLGRD] 2009). Sanitation is defined by Schertenleib and Dionys (2002) as interventions that limit people's exposure to diseases by providing a clean-living environment and steps to interrupt the cycle of illness. This generally includes sanitary management of human and animal excreta, garbage, and wastewater, vector-

borne illnesses, and the provision of personal and home hygiene washing facilities. It also encompasses both behaviours and infrastructure that work in concert to provide a sanitary environment (World Bank, 2002). Sanitation, according to Nyamwaya, Akuma, and Munguti (1994), is the proper disposal of human waste, such as faeces and urine. It entails maintaining the physical environment clean and free of diseases-causing chemicals. To Yulyani, Febrini and Hermawan (2021), defects in environmental sanitation, such as solid waste, wastewater, excreta disposal, drainage, and community hygiene, have a key influence in the high rate of infant and child mortality due to diarrheal diseases, which are linked to vector-borne diseases.

Studies have shown that poor sanitation puts people at higher risk for diarrheal disease than lack of safe water. Corburn and Hildebrand (2015) found that diarrhea was the leading cause of undernutrition among women in their reproductive years for those who had little or no access to toilet facilities. Similarly, Ziegelbauer, Speich, Mäusezahl, Bos and Keiser (2012) argue that sanitation interventions that are improved would exhibit a significant role in preventing diseases, including diarrhoea and infections that are transmitted through the soil. For example, diarrhoea mortality in children were caused by a lack of access to safe, clean drinking water and basic sanitation, as well as inadequate hygiene (Prüss-Üstün, Bos, Gore, & Bartram, 2008). While 87% of the world's population had access to improved water sources, 39% lacked access to improved sanitation (WHO/UNICEF, 2010). In addition, over 2 million children die each year of conditions that result from poor quality drinking water and inadequate sanitary facilities (WHO, 2019). Analysis on the effects of poor sanitation on public health in 2013 showed that most of these diseases are

contracted as a result of poor-quality drinking water, inappropriate hygiene practices or insufficient sanitary facilities (Wolfgang, Veronique, Bernard, Arsene & Valentin, 2013). Therefore, adequate sanitation and hygiene programmes need to combine interventions with changing behaviour and selection of the right technology to deal with issues of sanitation and hygiene.

Every human dwelling is potentially a place for addressing sanitation and hygiene challenges. Acheampong (2010) put forward that, in every human's settlement, waste accumulates, and thus progress in sanitation and improved hygiene are necessary for improved health. It is an emergent nuisance for densely populated areas, with the risk of infectious disease, particularly to vulnerable such as the very young, the elderly and people suffering from diseases that lower their resistance. Poor waste management also results in daily exposure to an unpleasant environment.

The State of Global Sanitation

Since the MDGs were adoption, the international community pledge to reduce poverty, promote equality, and supporting socio-economic development, through water, sanitation and hygiene (WASH) services (Lomazzi, Borisch & Laaser, 2014). The United Nations (UN) knowing the importance of sanitation, included it again in the SDGs, calling for an end to OD and universal access to adequate, and equitable sanitation, as enshrined in goal 6 target 2 (UN General Assembly, 2015). The global community has ardent resources and energy to attain its objectives and end OD by 2030 (UNCG & CSO, 2017). The SDGs also set out the means of implementation such as involvement of local communities and capacity-building support for developing countries to provide adequate WASH services for the people but progress is in a very slow space.

World Bank's statistics in 2015 indicates that about a billion people globally practice OD, leading to serious public health issues, including stunting in children and severe infectious diseases (Tiwari, 2017). The percentage of the global population receiving safely managed sanitation services climbed from 28% in 2000 to 45 percent in 2017, according to the SDGs Report (2019), with Eastern and South-Eastern Asia making the most improvement. Also, an additional 30 percent of the global population used essential sanitation services. An estimated number of about o 673 million people (nine percent of the worldwide population) still practised OD in 2017, with majority of them being in Southern Asia. To attain universal access to essential sanitation services by 2030, we will need to quadruple our present annual pace of improvement.

Sanitation for Human Health

Sanitation is essential for health, prevention of infection, maintaining mental and social well-being and for human dignity. Therefore, the absence of these secure sanitation systems leads to infection and disease, like pneumonia, preform, and intrapartum related complications and diarrhoea, some neglected tropical diseases, and also vector-borne diseases. For example, in low- and middle-income countries, diarrhoea is a major public health concern and a leading cause of sickness and death in children under the age of five (Prüss-Üstün, & Neira, 2016). Poor sanitation is also linked to vector-borne diseases like West Nile Virus and lymphatic filariasis, as well as a rise in the breed of culex mosquitos (Kelly-Hope & Lindsay, 2013). Wolf et al. (2014), in their analysis discovered that upgraded sanitation can minimise diarrhoea disease by approximate 30 percent.

Stunting is linked to unsanitary conditions which affects about one-quarter of children under the age of five globally (Danaei et al., 2016; UNICEF/ WHO/World Bank, 2018). Several factors contribute to these diseases, including regular diarrhoea (Riley et al., 2013), helminth infections (Ziegelbauer et al., 2012) and environmental intestinal dysfunction. (Crane et al., 2015; Keusch & Clarke, 2014). The lack of appropriate sanitation systems contributes to the rise and the spread of antimicrobial resistance by increasing the risk of infectious diseases (Holmes, Moore, Sundsfjord, Steinbakk & Lancet, 2016). Notwithstanding the treatment, the sewage of the municipal is likely to be a reservoir of antibiotic-resistant microorganisms and plasmid-mediated antibiotic resistance genes, thereby giving rise to the health of the public, which demands assessment and supervision (Korzeniewska & Harnisz, 2013). It should also be mentioned that adequate cleanliness in health-care facilities is a crucial component of both quality of treatment and infection-prevention and-control methods, particularly in terms of preventing exposure among health-care clients and workers. (WHO, 2016a). It is also critical in protecting pregnant women and infants from infections that can result in miscarriage, sepsis, and death (Benova, Cumming, & Campbell, 2014; Campbell, Chao, Singer, & Marlow, 2015; Padhi et al., 2015).

Safe sanitation structures in homes, schools, workplaces, health care facilities, outdoor venues, and other institutional structures (such as correctional facilities and refugee camps) are critical for general well-being by reducing the risks (Jadhav, Weitzman, & Smith-Greenaway, 2016; Winter & Barchi, 2016) and anxiety caused by embarrassment and shame (Sahoo et al., 2015) associated with OD or shared sanitation. It is evident that the fundamental causes of

diseases in most communities globally especially in Ghana are sanitation inadequacy and unsafe water supply, and improper disposal of waste. The ultimate goal of sanitation is to safeguard environment, and the natural resources (such as surface water, groundwater, and soil), and also to ensure that people defecate or urinate safely, securely, and with dignity.

The State of Sanitation in Africa

Africa is failing to meet the needs of both rural and urban inhabitants for adequate and better sanitation (Kamara, Galukande, Maeda, Luboga, & Renzaho, 2017). Diarrhoea and associated causes connected to poor water, sanitation, and hygiene kill roughly 842,000 people in low and middle-income countries each year, with children under the age of five bearing the brunt of the burden (WHO, 2018). Three hundred million Africans lacked access to adequate sanitation facilities at the Africa Sanitation Conference in Durban, South Africa (WHO/UNICEF, 2008). Only 60% of the African population has access to better sanitation, according to WHO/UNICEF/JMP (2008a). Notwithstanding, JMP (2015) found in a study that the population without improved sanitation access live primarily in Asia, Sub-Saharan Africa, Latin America and Caribbean. Southern Asia recorded the highest figure of 953 million, Sub-Saharan Africa had 695 million, Eastern Asia recorded 337 million, South Eastern Asia obtained 176 million, Latin America and the Caribbean had 106 million, and other areas recorded 98 million people (JMP, 2015). Furthermore, only approximately 38% of Africans utilised upgraded sanitation facilities in 2006, with Northern Africa having the highest percentage (68%) and Western Africa having the lowest (24%). In Western and Southern Africa, respectively, 22% and 21% used communal facilities. Eastern Africa has

the greatest rate of open defecation, with 33% of the population using no sanitation facilities. OD, on the other hand, has decreased by 25% in Eastern Africa since 1990.

The trend in sanitation services in Sub-Saharan Africa (SSA), which houses less than 10% of the world's population, has been disastrous (Armah et al., 2018). Traditional pit latrines are the most widespread method of sanitation in Sub-Saharan Africa, according to thirty-two (32) nations in the African Infrastructure Country Diagnostic [AICD] (2007). Furthermore, according to WHO/UNICEF (2010), about 31% of the population uses shared public bathroom facilities to reduce OD and thereby limit its repercussions. Therefore, a number of interventions introduced in an attempt to make some progress in sanitation and hygiene provision. In highlight of that, Malawi adopted the CLTS in 2008 to make the country ODF by promoting sanitation in the communities. The Malawian government made some positive strides by triggering 67.3% of all villages in Malawi, of which 33.6% attained ODF status (India Health Management Information System [HMIS], 2015). In Malawi, 2017, about 38 Traditional Authorities (TAs) were declared ODF in Malawi (MOH, 2017).

The State of Sanitation in Ghana

The provision of appropriate and better sanitation to Ghana's citizens is an issue. This is largely owing to Ghana's economic growth couple with rapid urbanisation with limited resources (Mariwah, 2018). According to the Resource Centre Network [RCN] (2020), over 20 million people, representing about 87% of Ghanaians, do not have improved household toilets facilities. The statistics also showed that 51%, representing over 12 million of the country's population, share toilet facilities with their neighbours while 20%, which

constitute 5 million people do not have any form of toilet facility in their homes and therefore may practise OD. Besides, only one out of every five household, in Ghana has improved sanitation.

In the GSS (2018) report, shared toilet facility use has increased over the years. Accordingly, in 2018 over 13 million Ghanaians, that is 45 percent, used shared toilet facilities and it is mainly seen at low-income urban settlements. The most alarming statistic is that 22% of Ghanaians still engage in OD, which is most prevalent in rural Ghana, where 4.2 million people (31%) engage in the activity with 1.8 million people, or 11% also in urban areas. OD. The usage of unimproved toilet facilities (those that do not separate human touch from excrement) is common. As a result, thirteen (13) percent of Ghana's population relied on substandard amenities (GSS, 2018).

Perception towards Sanitation

People have different perception of sanitation. To others, sanitation is nothing more than sitting or crouching on a pit toilet and allowing waste to accumulate in the pit, or sitting on a toilet and flushing the waste into the environment. The excreta is disposed of and forgotten in both circumstances in the shortest and most expedient manner. However, in a society that is getting more contaminated by excreta, and where many people do not have access to a bathroom at all, it makes sense to focus on excreta management in a more deliberate manner (Mariwah, 2018).

To Efron (1969), the study of perception has always had a special relevance for philosophy and science since all conceptual knowledge is founded on or derived from this fundamental kind of consciousness. People's perceptions can be affected by their beliefs, values, prejudices, expectations,

behaviours, and life experiences. Therefore, a group of population may choose fields, bushes, forests, ditches, streets, canals or other open space for defecation based on their perceptions.

OD is obviously widespread in areas where sanitary facilities and services are lacking or unavailable. A study by WaterAid (2018) revealed that living with human excreta was unacceptably unpleasant due to odour nuisance. However, Some Ghanaian participants on the other hand claimed they preferred OD to latrines use because odour in the privy rooms.

The low uptake of sanitation in Ghana can be explained on a socio-cultural and attitudinal level. The general reversal in the development of hygiene practices can be attributed in part to people's attitudes regarding sanitation (Eugene et al., 2019; Nimoh, 2016). The concept of toilet acceptability is important for latrine adoption. Some cultural beliefs encourage people to use OD whereas some regard excreta as innocuous, others regard it as filth and terrible places (Mariwah, 2018). Where latrine is regarded innocuous, OD is socially acceptable, and the community members may not consider latrine usage. Furthermore, some households have preconceived notions about the reuse of human excreta as manure (Nimoh et al., 2014).

Sanitation Interventions

Sanitation interventions are intended at developing, promoting or extending coverage or use of facilities or systems for proper excreta disposal (Bauza, Sclar, Mojorin, & Clasen, 2019). Specifically, sanitation interventions may include steps to reduce OD by encouraging latrine construction and its usage as well as the upgrading of toilet facilities to a desirable one and also for safe treatment of faecal sludge. Prior to the SDGs, the phrases "improved

sanitation" and "unimproved sanitation" were used to describe the facilities for disposing of human waste (WHO/UNICEF, 2015). Accordingly, improved sanitation is latrine that conceal excreta totally whiles unimproved sanitation is the one that exposes excreta.

In addition, new sanitation service levels have been developed along a sanitation ladder for the aim of monitoring the SDGs. Safely managed, basic, limited, unimproved, and OD are the five levels of service on this ladder (WHO/UNICEF, 2017). First, better facilities should be used that are not shared; instead, human excreta should be safely disposed of locally or treated off-site. Secondly, there should be the use of improved facilities that are not shared with any other facility or household. The use of upgraded amenities that are shared with other homes, on the other hand, is the third level. Fourthly, the use of pit latrines without a slab or platform, hanging toilets, or bucket toilets. And lastly, OD which is the disposal of human faeces in opens fields, surface water, forests, bushes, or solid waste, by polluting the water and destroying the ecosystem in the process. When these are known, it now becomes easy to deal with the challenges associated with it so that they can be dealt with to bring about better sanitation within the environment.

Policy and Regulatory Reforms on Sanitation in Ghana

Ghana's sanitation situation is not encouraging, yet there are some policies, Acts and reforms attempting to control and regulate it. The Local Government Act (Act 462), which grants Metropolitan, Municipal and District Assemblies (MMDAs) the obligation of providing sanitation services to their communities, is one of the legal acts governing the provision of sanitation services. The purpose of the Act is to offer technical support to all MMDAs and

regional councils so that they may carry out their responsibilities. The National Water Policy (NWP) is mandated for the provision of water whiles the National Environmental Sanitation Policy (NESP) is mandated for sanitation services delivery (MLGRD, 2010a).

The NESP stresses the need of a cost-effective sanitation model based on the CLTS method. Following the passage of NESP, the Ministry of Local Government and Rural Development's Environmental Health and Sanitation Directorate (EHSD) developed a National Environmental Sanitation Strategy and Action Plan (NESSAP) for the period 2010–2015 to serve as an implementation plan for the NESP. As a result, the NESSAP serves as a foundation for systematically implementing interventions aimed at enhancing environmental sanitation systems and facilities (MLGRD & EHSD, 2010). In 2012, in addition to the NESP and NESSAP, a Strategic Environmental Sanitation Investment Plan (SESIP) was developed to show the estimated costs of efforts to meet established policy goals. In 2012, a Rural Sanitation Model and Strategy (RSMS) was established for scaling up CLTS and hygiene and sanitation marketing in rural areas, based on suggestions from stakeholder feedback on the execution of the CLTS strategy, as defined in the NESP. The creation of a sanitation marketing (SanMark) is a strategy to employ private sector participation (Dwan, 2012).

The NESP, NESSAP, SESIP, and RSMS (MLGRD/EHSD, 2012) are mostly implemented by MMDAs. District Assemblies are required to prepare District Environmental Sanitation Strategies and Action Plans (DESSAPs) in conjunction with District Water and Sanitation Plans (DWSPs) as medium-term plans or strategies for addressing sanitation at the local level as an

implementation measure at the district level (MLGRD/EHSD, 2012). Both the DESSAPs and the DWSPs are intended to expound on the sanitation service delivery targets and plans in total (MLGRD & EHSD, 2010). The DESSAPs and DWSPs have become essential indicators for accessing District Development Fund monies (MLGRD/EHSD, 2012).

Without a coordinated national policy, urban sanitation measures have been patchy. In order to solve this problem, a National Urban Plan was created to address cleanliness in urban slums, neighbourhoods, and schools. UNICEF Ghana has received money from the Dutch government as part of the Ghana Netherlands WASH Programme (GNWP) to assist the Ghanaian government in developing and implementing a national urban strategy as part of the "Improving Sanitation Access in Urban Ghana" initiative (UNICEF/GNWP/GoG, 2017). The urban sanitation plan is expected to handle issues such as sanitation marketing, funding methods, legislation, supply chains, and business growth, as well as WASH in schools and suitable low-cost sanitation and waste water treatment technology alternatives.

Factors Affecting Open Defecation

The practice of OD in the water bodies is still seen as a challenging issue faced by the world community, especially in developing countries including India and Ghana (Ministry of Health, 2013). This is capable of causing an unhealthy environment and may also be a spreading agent of diseases like diarrhoea and other infectious diseases (Agbadi, Darkwah & Kenney, 2019). Many factors influence the practice of OD. A study conducted in the Wa Municipality found some factors that give rise to OD (Osumanu, Kosoe & Ategeeng, 2019). These factors include, level of education, cultural

beliefs and traditional norms, size of the family, occupation and income level. The factors were seen to have positive significance in determining OD in Ghana. The subsequent paragraphs elaborate on the factors mentioned above.

To start with the study where a total of 110 family heads were examined and selected using the proportional random sampling technique and Chi Square statistical analysis, the findings showed a significant link between the level of education and knowledge towards OD behaviour (Nugroho, Wiarisa & Wulandari, 2019). Their results affirmed the results of the research conducted by Sukmana and Suryaningtyas (2016), who found a positive significant relationship between the level of education and OD behaviour. Educational process has the capacity to determine the formation of knowledge and ability to behave, from one's family to the wider environment. In addition, learning process also determines the kind of behaviour one exhibits. Obviously, there are significant differences in the behaviours of those who are highly educated and those with low level of education regarding sanitation behaviour (Appiah-Effah et al., 2019). In facing challenges or problem-solving situations of such nature, the level of education becomes very decisive. Thus, it is easier to solve problems by smart communities because they have substantial knowledge and high reasoning power. A study found that, inhabitants who made economic factors as their excuse for not making healthy latrines in the house find it more difficult to create public awareness to implement clean and healthy lifestyle (Akpakli, Manyeh, Kukula, & Gyapong, 2018). This is much related to one's educational level because it does not consider making healthy latrines at home is a priority as far as clean and healthy lifestyle is concerned (Mara, Lane, Scott, & Trouba, 2010). With

regards to knowledge, a research conducted by Wijayanti, and colleagues in Gunungsari Village, Pulosari Sub district, Pemalang District, found knowledge as part of the predisposing factors that are very decisive in shaping a person's behaviour Wijayanti et al. (2016). Knowledge is influenced by the amount of information received and used by humans to solve the problems they face (Notoatmodjo, 2012). This is why it is necessary to consider efforts in increasing knowledge through regular health education and health promotion strategies. Therefore, the person's level of education can affect their knowledge on OD health behaviour or outcome. Hence, the need for efforts in the form of increasing knowledge level by various stakeholders, and providing educational media to support the effort of reducing OD rates.

Furthermore, cultural ideas and traditional conventions may play a role in the desire for defecation practices such as utilizing a toilet or going for OD (Thys et al., 2015). In a study conducted by Adjibolosoo (2017), it was revealed that in recent years, the problem of human behaviour, culture, and OD has piqued worldwide interest. A cross-sectional study was conducted in eight first-cycle schools selected from eight communities in Ghana's Eastern and Volta regions to put the behavioural and cultural factors influencing OD behaviour on the public agenda. The study's findings revealed a high prevalence of OD (64.3%) among students, with more female students (32.6%) than male students (29.4%), indicating a higher OD prevalence across the studied schools. The students had a high level of general knowledge of the risks associated with OD behaviour (89.8%). The majority of the students (53%) were unaware of the health risks associated with OD behaviour. The level of understanding of environmental risks associated with

OD behaviour among students was found to be fairly high (52%). The intention of students to engage in public OD behaviour was found to be significantly influenced by their attitude (Adjibolosoo, 2017). This research complements a study conducted by WA (2008) in rural communities in four West African countries: Burkina Faso, Ghana, Mali, and Nigeria, to determine the cultural elements that support the practise of OD. The study discovered that OD was surrounded by cultural taboos and beliefs that were specific to several ethnolinguistic groups in these communities (WA, 2008). The fear of being possessed by demons and losing one's mystic abilities was also discovered to be the leading cause of OD behaviours in all study areas (WA, 2008).

Almost half of those polled in Tamale believed that public toilets are plagued by evil spirits and should be avoided, with a large percentage in the Wa East thinking that using a latrine would rob the user of their magical talents. As a result, it's important to note that OD isn't a choice or a compulsion, but rather a result of personal preferences, cultural, and traditional standards. In order to reduce OD behaviours and boost the use of sanitary latrines, programs to promote sanitation and latrine construction and use must be carefully examined. For successful ODF status, there is the need to build strong cultural competence towards a behavioural change.

In addition, in the behavioural literature, the impact of demographic variables on individual intentions on environmental behaviour has been highlighted as a relevant problem. For example, research by Venkatesh, Morris, Davis, and Davis (2003) discovered that males and females had different contextual behaviour-related factors. Sex and age, for example,

were shown to considerably reduce the impact of the determinants (attitudes, subjective norms, and perceived behavioural control among situational variables) on behaviour intention in the research. It suggests that demographic parameters like sex, age, education, and where individuals live might impact their OD practices or behaviours, according to the research.

Also, family size determines the practice of OD. Open Defecation is more likely to be practiced in large families. Osumanu, Kosoe, and Ategeeng (2019) conducted a household survey in the Wa Municipality and discovered that larger families are more prone to openly defecate. According to the poll, 75% of homes with more than nine people practice OD, whereas just 8% of households with one to three members do not. Even after raising awareness about the benefits of having a toilet at home, many household heads with large families believe that latrine building is expensive and so will not want to possess one. As a result, preventing OD will be difficult, as 61.6 percent of the families studied in the Wa municipality had more than six persons, compared to the national average household size of 4.4 persons.

Some studies have indicated a notable relationship between profession and OD (Abdul, Dandub & Aditi, 2019; Osumanu, Kosoe & Ategeeng, 2019; Stephen & Jay, 2014). The studies unveiled that households whose heads are farmers more likely to practise OD (Osumanu, Kosoe & Ategeeng, 2019). Generally, peasant farmers' incomes are low when compared to other professions, especially in Ghana's northern region. This is primarily due to the fact that the climate in that section of the country does not permit year-round cultivation. Farmers are also less likely to want to develop bathroom facilities at home since they spend so much time on the farm during the

agricultural season. Income has a negative link with OD, as predicted; the more a household head's income, the less likely his or her family members would engage in OD.

Moreover, religion has been considered as a factor contributing to OD. After discovering that infant mortality among Hindus is greater than among Muslims in India, religious differences were noted as a contributing factor in determining whether religion is connected with differences in sanitation practices. Using three nationally representative data sets from India, Anjali, Marcella, Kim, Jeremy, and Lea (2019) evaluated sanitation behaviours of Hindus and Muslims living in the same areas. When conditional on geographical features or includes location fixed effects, the unconditional religion-specific disparity in latrine ownership and usage decreases by almost two-thirds across all three data sets. There was no indication of religion-specific differences in other cleanliness activities, such as hand washing or the observation of faeces near dwellings. They came to the conclusion that although home sanitation habits differ significantly throughout India, religion has less of an impact when it comes to differences between Hindus and Muslims living in the same region. Similarly, in Coffey (2014), both Hindus and Muslims associated OD with good health. Coffey noted that over half of the respondents living in households in which a latrine was used thought OD was healthier than latrine use. They also associated early rising and industriousness, as well as strength and exposure to healthy fresh air with OD. Both religions spoke about the benefits of OD as enjoyable and healthy. However, Alhassan and Anyarayor (2018), in finding out the determinants of adoption of ODF, grouped respondents by faith, and the percentages differed

significantly. Religion was identified as a crucial factor of ODF innovation uptake.

Only 25 Muslims were found in their study's total sample size of 252, accounting for 9.9% of the overall sample size, despite the fact that the rate of adoption among Muslims is as high as 56%. On the other hand, the corresponding age among Christians 42 with African Traditional Religion trailing at 2 percent. In their survey, Muslim respondents said that building toilet facilities in their houses was to let their wives and daughters have privacy while visiting the toilet facility, as well as to wash their anus on a regular basis as required by their religious practice (Alhassan & Anyarayor, 2018). Muslims had the most consistent shift behaviour when it came to ODF adoption. This is in line with Avvannavar and Mani (2008), who claimed that Muslims routinely do anal washing with water after faeces, and that this practice may be performed in a private setting. Furthermore, two percent of respondents who identified as African traditional worshippers claimed that religion had no impact on their decision to embrace ODF innovation.

In considering culture and its influence on OD, it was found that in certain societies, OD is a widespread occurrence that is maintained by local cultural norms. (Water and Sanitation Program, 2013) all over the world including Africa and Ghana. Reviewing what influences OD and toilet ownership in rural households globally, factors identified by Kathryn (2014) included knowledge, implementation of rules or regulations, values, desire to build toilets, roles and decision-making, and cultural beliefs and willingness to take responsibility for OD in both rural and urban settings (Adjibolosoo, 2017). Other works further showed that in certain ethnic

cultures, traditional beliefs which forbid a father-in-law and daughter-in-law from using the same toilet facility, motivated a lot of people to choose OD options (Kathryn, 2014). In other culture women in their menstrual period are not allow to use the household toilet with the belief that they are unpure during those menstruating days. This was recorded from part of the Western region by Kathryn (2014). Similarly, Caldwell (1993) found that some places accepted that adults and children should not defecate in certain places like near someone's house, temple, and crops that are of time to be harvested. However, in a study by WHO/UNICEF/JMP (2015), it was revealed that most places like the pond shores, river banks, along well-travelled roads or paths, behind public buildings, and in canals, fields and forests were socially tolerated for OD.

It is deductively observed that the level of one's education is a very strong factor contributing to OD since it either directly or indirectly runs through all the factors. Once a person's educational level is higher and broadened, such a person becomes capable of differentiating between the good and bad behaviours, no matter what the cultural beliefs, economy, religion and others exhibit. This is because knowledge is seen to be a predisposing factor to the shaping of human behaviour, and the knowledge is obtained through education (Wijayanti et al., 2016). The consequences of such behaviours are seen through the educational process. Open defecation is likely to be practised mostly in areas where people are limited in their knowledge of the environment and health risks (Notoatmodjo, 2012). The intensity of education and the increase in knowledge of the effects of OD would go a long way to override and eliminate

all other factors that are found to be influencing it since most people defecate openly without knowing the results of it.

Public Health Implications of Open Defecation

Open defecation has a lot of negative health and social impacts on human lives. These have called for the fight for an ODF world. Studies have revealed numerous impacts of OD on children, men, women, and the aged. Open defecation impacts human health, social, psychological, economy, and people's behaviour (Saleem, Burdett, & Heaslip, 2019).

Women and open defecation

Females are more vulnerable and at risk of experiencing multiple violence as far as OD is concerned, though it affects everyone. According to Saleem, Burdett, and Heaslip, (2019), women face some challenges when there is no latrine at home. This is because, in the absence of a toilet, disposing of sanitary pads and changing the pad during menstruation is exceedingly unpleasant and difficult for women.

Failure to address latrine concerns at a national level, according to the United Nations (UN), is a form of gender discrimination and a violation of human rights (UN, 2019). Furthermore, according to Saleem (2019), OD causes poor health in females and has long-term detrimental consequences for their psychological well-being. It was said that women's health and social requirements are substantially unfulfilled, and that they are often ignored in situations where there are no bathrooms in the house. In West Bengal, India, Majumdar, Bisoi and Haldar (2018) observed that OD is one of the factors in high hookworm infestation among pregnant women who defecate in the open fields that is (24.3%) than those who use toilets (6.4%). Similarly, Strunz,

Addiss, Stocks, Ogden, Utzinger and Freeman (2014) identified more susceptibility to hookworm infestation leading to maternal anaemia by women living in poor sanitation facilities. Women with limited or no access to toilets, according to Corburn and Hildebrand (2015), are more likely to suffer from diarrheal illnesses, which are a primary cause of undernutrition among women in their reproductive years. In rural India, a study of pregnant women found a statistically significant link between OD and negative pregnancy outcomes such as preterm delivery and low birth rate (Padhi et al., 2015). According to Sahoo et al. (2015), sexual assault has a devastating effect on young unmarried females across all age groups.

Men and open defecation

Men normally do not construct latrines for their own use but for the use of women and children. Studies have shown that men are more prone to practice open defecation compared with women in communities even if there is latrine in the house (Adjiboloso, Adongo, Afranie, & Yirenya-Tawiah, 2020). According to a research done across 11 districts in Punjab, 55% of rural males and 83% of women used toilets (World Bank, 2017).

The Economy and Open Defecation

Ghana is among countries with 5% to 25% of the population engaging in OD (Adzawla, Alhassan & Jongare, 2020). A total of about 19% of Ghana's population practiced OD in 2013 and this increased to 22% in 2017/18 assessment. As of 2010, the annual cost of poor sanitation in Ghana was estimated to be around 420 million Ghana cedis. And a total of 118 million Ghana cedis on OD, which is greater than what is needed to eliminate OD through the provision of latrines. Unfortunately, the poor pay a significantly

larger price for OD than those in the richest wealth index. This is in addition to additional social and economic expenses that keep the poor from escaping the cycle of poverty. These findings show that additional work is needed to accomplish the country's SDG targets (Adzawla et al., 2020).

Community-Led Total Sanitation (CLTS)

CLTS is a demand-driven behavioural change strategy aimed at forming ODF communities. It aims to bring about collective change via facilitators who inspire and urge individuals to examine the effects of OD in their communities and take action to minimise or eradicate OD on their own. It was initiated by Kamal Kar in Bangladesh in 1999 (Kar & Bongartz 2006; Kar & Pasteur, 2005). Though CLTS' emphasis on "total sanitation" is commendable, there is reason to suppose that the poor and most vulnerable members of the community may not benefit equally, since they are more likely to build lower-quality toilets that will not survive as long and would therefore return to OD. There may be a public health cost connected with these families being left behind, in addition to the concerns about equality. There is a growing body of data that sanitation protection is a result of community-wide coverage's herd protection (USAID, 2019). Plan International was one of the first NGOs to test this approach, and they implemented CLTS in more than 30 countries (Kar & Milward, 2011).

The CLTS programme establishes the fact that as long as minors continues to defecate in the open, everyone in the community is at risk of disease infections. The model consists of three major distinct stages or phases: Planning and Pre triggering, Triggering, and Post triggering. The concept of CLTS is to stimulate community-led local action to stop OD completely if facilitated properly. The project is without subsidies or prescriptions for latrine models

from an external sanitation programme (Kar, 2005). When the CLTS is activated, communities begin digging holes for the building of home-made pit latrines almost immediately. To become a 100% ODF community, families begin building toilets or sharing toilets within their capabilities.

Planning and Pre-triggering

The process of determining whether or not a community is suitable for CLTS intervention is known as pre-triggering. This entails site inspections and a variety of factors that helps to determine a community's preparedness to respond positively to triggering. Facilitators make initial contact with chiefs and other important figures in the community to establish relationships, and then meet with community members to publicize their presence (Kar & Chambers, 2008). The facilitators and community members agree on a date for the triggering. Men, the middle or upper class, and more powerful members of the community may be unable to attend such a gathering for a variety of reasons. It is critical to understand that the absence of a large number of participants may result in a failed triggering exercise when it is organised later. This step might take anything from half a day to a week to complete. The pre-triggering step aids in mobilising community members for the subsequent triggering action (Kar & Chambers, 2008; Meeks, 2012).

Triggering

In CLTS, there is no one way approach to triggering; instead, a series of actions is assembled. UNICEF (2010) suggests the following steps for the triggering process; (a) facilitators must visit the community, emphasizing that it is for learning about their sanitation situation of the community, (b) drawing the main sites in the village then the main sites for defecation, (c) pretend to

leave the community, (d) walking with community members to the sites of OD ('Walk of Shame'), (e) take a piece of faeces in a bag, (f) put faeces on the floor in front of the community and discuss the way flies move between food and faeces, (g) wait for the shocked realization that the community is indirectly eating each other's faeces, (h) put some faeces into a water bottle and ask community if they would drink it, (i) calculate how much faeces is produced each day and ask where it goes (j) ignition, and (k) wait for the emergence of "Natural Leaders" to work with to develop a plan of action.

The goal of the triggering procedure is to instil revulsion in residents of the neighbourhood by physically demonstrating sanitary issues. Community members must acknowledge that there is a significant sanitation problem and that they must take action (Phillips-Howard et al., 2015), with the support of their natural leaders, during the 'ignition' phase. Natural Leaders are charismatic community members who help in the CLTS process and are recognised as change agents' (Bongartz, 2010). Many of these individual community natural leaders emerge by themselves but few are also selected by community opinion leaders.

Obviously, starting with "transect walk" also known as "walk of shame" to discover the defecation areas is good. Transect walks are the single most crucial motivation tool, where facilitators walk with the members of the community through the village from one side to the other, observing, asking questions, and listening. The transect walk for CLTS, assists to locate the areas of OD and visit all the different types of latrines along the way (Sigler, 2015). According to Kamal (2005), facilitators should stop in regions with OD and spend time there asking questions and completing assessments while breathing

the unpleasant odour and seeing large-scale OD. On account of the existence of outsiders, the transect walk gives rise to embarrassment and awakens the community to the problem of OD. This is because as much as everyone sees the dirt and shit every day, they only seem to be awakened to the challenge when forced by outsiders to look at and analyse the situation in detail (Lifewater, 2016). Hopefully, the humiliation felt during the "walk disgust" would prompt an urgent desire to cease OD and eliminate these places.

Post-triggering

This stage involves facilitation to construct household improved latrines and use of such facilities with the aim of eliminating OD. Venkataramanan et al. (2018) posit that when there is a good response to the ignition phase community members take actions immediately. Facilitators then provide information and direction that is appropriate to the situation on the ground. In the post-triggering phase, there are numerous problems to overcome. These are primarily concerned with the provision of long-lasting and cost-effective toilet gear, as well as technical assistance with latrine building. Owners of toilets may want guidance on how to modify and enhance sanitation, such as hand washing facilities using local materials.

Impact of Facilitators' Knowledge and Behaviour on CLTS Implementation.

The effectiveness of CLTS programmes is probably a consequence of the implementation modality, as well as both physical environmental and contextual elements, according to an assessment of CLTS released by USAID in 2018. The quality and responsibility of execution were the first aspects of conditions addressed by the review. According to the writers, quality encompasses a variety of factors. These include how persuasive facilitators are

regarding triggering events and the frequency of facilitators' visits, which can vary from program to program (USAID, 2018). An analysis of CLTS literature revealed that the more a facilitator persuades, the more inspired the community is to build family lavatories. Therefore, the knowledge of the facilitators impacts positively or negatively on the effectiveness of the CLTS implementation. A knowledgeable and skilled facilitator enhances the process and the outcome, but those with very little knowledge could retard the process and thereby reach a poor or not encouraging result (Venkataramanan et al., 2018). The facilitators must, therefore, be knowledgeable to facilitate CLTS more effectively.

According to Nii Lantei Wellington (2011), in his training report on "Training of district assembly and other extension staff in community-led total sanitation", was conducted in Kasseh-Ada, and Dangme East District identified nine knowledge areas. Knowing the faecal-oral transmission channels, the village's local language, social, environmental, and health information, the community's history of sanitation interventions, and the CLTS concept: how it differs from traditional techniques, the Dos and Don'ts are just a few of them. Knowing how to apply CLTS tools, overcoming difficult circumstances, low-cost latrine models using materials accessible in the community, and ultimately, the experience level and skills of team members to divide duties correctly were all factors considered. A facilitator must assist others comprehend and be encouraged to act, be an attentive and observant listener, and be a good judge of people in order to choose community champions and natural leaders, according to the research. Also, they must be patient, humble, confident and courageous, accommodative and adaptive, able to provide fun and have a learning spirit to help them obtain the required results. In Conclusion,

facilitators can work effectively to impact the CLTS implementation if they incorporate most, if not all, of the knowledge, skills and attitudes in the exercise.

Challenge with CLTS

Community-led total sanitation programme comes with a lot of challenges because it's a behavioural change based on the use of shame (Galvin, 2015). The aim is to promote collective awareness of the dreadful effect of OD and activate shock and self-consciousness when the people notice the effects of their own actions.

Studies have shown that taking the community members through triggering can violate the human rights of community members, though not the intention the facilitators. As a result, more focused training of CLTS implementers on topics like stigma, social norm awareness, and pre-existing disparities is critical (Musembi & Musyoki, 2016). However, Venkataramanan et al. (2018) suggested that more debate is needed as far as human rights consequences of post triggering punitive measures is concern.

In the case of CLTS, specific technical standard for toilets construction does not exist. This is to giving way to villagers to be able to building their own toilets immediately based on their capabilities (Musembi & Musyoki, 2016). However, there are challenges associated to it. There is a possibility of ground water pollution when the toilets are not properly constructed. Also, sustainability cannot be assured with poorly constructed latrines (Black & Fawcett, 2008). Another corresponding issue is that, CLTS does not ensure latrine emptying services but in cases where they are in place, how is the waste disposed of? According to some academics, CLTS' effectiveness is primarily

down on the cultural fit of how it is given and the extent to which supply-side constraints are handled (Mara, Lane, Scott, & Trouba, 2010).

Additionally, Tyndale-Biscoe, Bond, and Kidd (2013) found that the number of people who return to OD shortly after CLTS process is a concern. Tyndale- Biscoe et al., 2013) looked at 116 villages on ODF and discovered that while 87% of the households (4960 people) had completely functional latrines, which are regarded the most important, none of the communities had progressed tremendously in terms of sanitation, owing to the high usage. They also discovered that, 89% of households had no visible excreta in the vicinity, but only 37% had hand washing facilities present. When broader criteria for declaring communities ODF was used, an overall "slippage rate" of 92% was found (Tyndale-Biscoe at al., 2013). Another study revealed affirmation for sustained sanitation behaviour change on account of CLTS (Venkataramanan et al., 2018).

Role of Traditional Leaders in CLTS

Working with traditional leaders at all levels has been supportive of the CLTS process in small towns, since the genesis of the intervention (Tyndale-Biscoe at al., 2013). Traditional leaders have provided the various facets of the project and led the calls made in project communities to abandon OD. Tiwari et al. (2017) implemented CLTS in Zambia to eliminate OD in rural communities. Chiefs were regarded key agents of change in promoting CLTS and the accomplishment of ODF communities, and they were empowered to push CLTS and improve sanitation for their communities. During orientations prior to the implementation of CLTS in each village, chiefs were given data on sanitation access in their chieftaincy and were encouraged to set targets for universal

sanitation access in their communities. The likelihood of a community achieving 100% coverage of appropriate sanitation improved by 23% when chiefs were oriented and mobilised in CLTS, according to a survival regression. Similarly, they discovered a 30% rise in the number of people with appropriate sanitation after chieftaincy orientations using an interrupted time series.

CLTS uptake was greatly boosted because to the mobilisation and assistance of chiefs and elders. With enhanced CLTS expertise and authority in their chieftaincy, these community elders were able to actively monitor village sanitation development and follow-up with their headmen or headwomen. These crucial change agents are critical facilitators of public health objectives like OD reduction.

Factors Enhancing the Effectiveness of CLTS

Venkataramanan et al. (2018) discovered that 23% of the research looked at facilitator skills, whereas 40% looked at the triggering event's quality. It means that good facilitation and communication skills, will motivate community members to construct household latrines (Cameron & Shah, 2017). There is also a focus on the necessity for follow-up visits to CLTS implementation communities in order to ensure that the improvements made by CLTS are sustained. Cameron and Shah (2017) discovered that stronger facilitator charisma and frequency of follow-up visits had a beneficial impact on CLTS results. Furthermore, the presence of natural leaders is critical to the CLTS project's implementation and success. CLTS places a great emphasis on the participation of such dedicated community members: activists and enthusiasts who emerge and lead throughout CLTS procedures (Cameron & Shah, 2017).

In certain chosen areas in Bangladesh's Rajshahi and Naogaon districts, Abubakar (2018) discovered that the expense of constructing a latrine, the status of being contemporary, societal pressure, religious notions about privacy, health concerns, and awareness programmes were the primary variables influencing OD. Gender, education, family size, area, availability to drinking water, home features (roof and floor materials), household water treatment (HWT), and CLTS intervention were all variables impacting OD, according to research in Ghana and Ethiopia (Crocker et al., 2017). Now, considering Ghana's population, cultural variety, and economic prominence in Africa, how much do these elements impact OD practise there?

Conceptual Framework

Total sanitation refers to the belief that sanitation should include not just lavatories but also other hygienic practices such as keeping the surroundings clean, keeping animals confined, and providing a place to bathe and wash clothes (Tiwari et al., 2017). The principle of community involvement lies at the heart of this framework, with the ultimate goal of comprehensive cleanliness for the community. Community people who participate in analysing their sanitation status are active in identifying their sanitation difficulties, making decisions about the issue, planning, and executing solutions to the latter. It means that community people have been in charge of the CLTS programme from the beginning, including issue identification, planning, decision-making, and execution. The concept here is that when people of a community make choices about their concerns, they are more likely to be accountable and devoted to them (Thiessen, Jentoft, & Davis, 1992).

The PRECEDE- PROCEED Model is grounded on the notion that, intervention will be effective if that particular intervention come from the community members, well planned, based on facts and most important when the community members see the intervention to be feasible. In the same way, for CLTS to be successful, it needs to be well plan from stages to stages. The community members themselves have to realise that they are practicing OD and should come to agreement that they need to do something to stop the OD.

The conceptual frame work explained how health promotion and policy regulation organization will be used to build capacity and empower community members to take collective decision towards change behaviour on OD and take action to attained ODF. Further, with change in life style, a sanitized community will be attained which will lead to total sanitation and for that matter, quality of life.

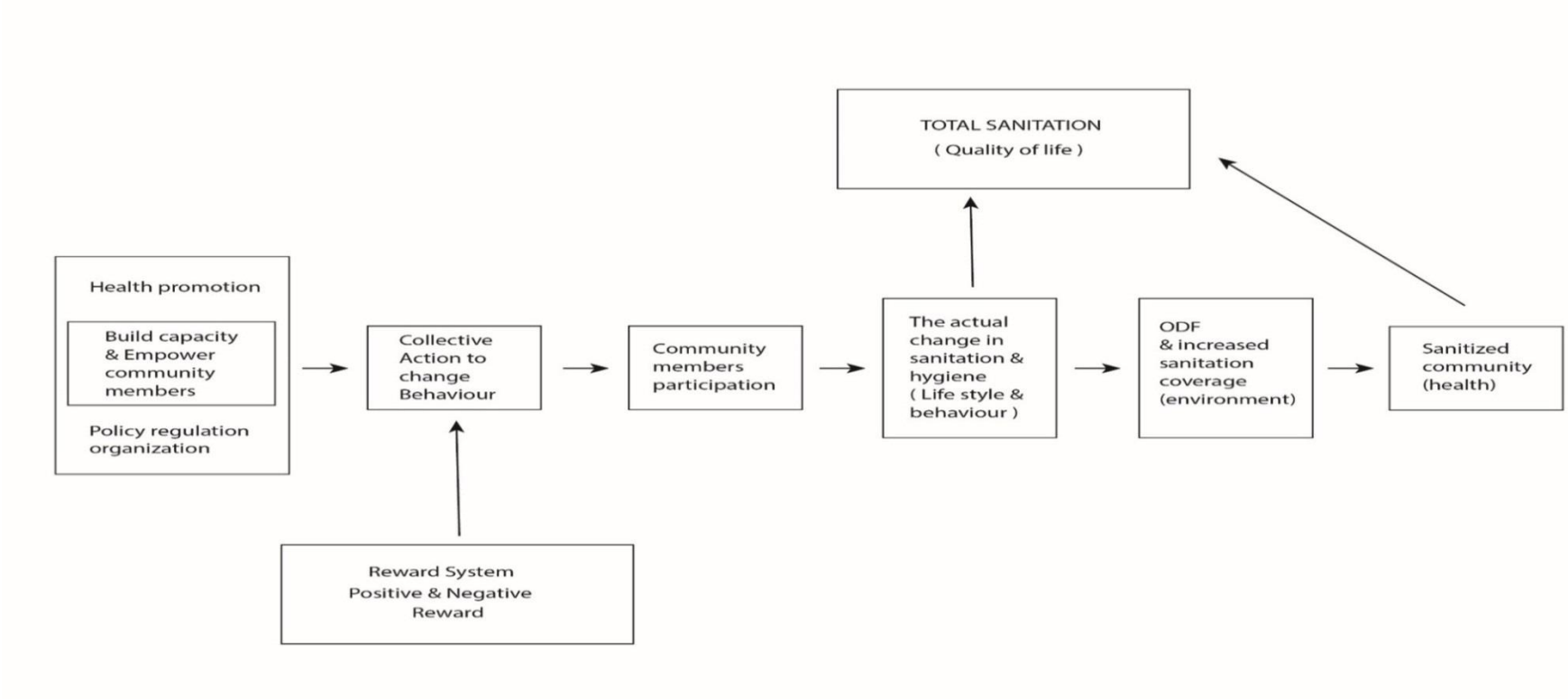

Figure 2: Conceptual Framework

Source: Adapted from PRECEDE- PORCEED Model (Green 2015)

Summary

Poor sanitation caused by OD has negative health and social repercussions for individuals, families, and communities, including diarrhoea and cholera, among other things. The continued use of share latrines by over half of Ghana's population (56.7 percent) has hampered the country's attempts to meet the MDGs (UNICEF /WHO, 2017), because shared latrines do not meet the JMP criteria of improved sanitation. That is, CLTS becomes a vehicle for eliminating OD in communities and improving sanitation and attendant health indicators.

There are few studies that paid attention to the effectiveness of CLTS and related approaches and impact of the internal factors, especially natural leaders, teachers, and local government. Latrine ownership and the use of latrines were noted to have been mostly concentrated on in most studies. To assess the success of CLTS treatments, a larger variety of outcome indicators must be assessed, including changes in social status, cleanliness, and both positive and negative consequences of behaviour modification tactics.

People in the communities choose OD willingly or by compulsion. Personal preferences, attitudes, religious beliefs, family/cultural norms, social behaviours, and resource availability may all help to create better strategies to reduce OD. Meanwhile, the religious groups have almost been found to flown on the practice of OD, hence being seen as the basis for approval of ODF innovation. Again, there were little considerations in the previous research for understanding female motives for OD in order to treat OD and encourage latrine usage in a more gender equal way.

Construction of toilets, promoting behaviour change to boost toilet use, and updating facilities to create a greater quality of service are all significant

considerations in lowering OD. There is little evidence to support the use of children as agents of change, compared to the use of natural leaders for improving hygiene and sanitation behaviour (Bauza et al., 2019).

CHAPTER THREE

RESEARCH METHODS

The purpose of this study was to find out the factors influencing the limited achievement of CLTS implementation in Central Region. This chapter focuses on the research design, study area, population, sample and sampling procedures, instruments used for data collection, data collection procedures and data processing and analysis.

Research Design

The two basic approaches to research are quantitative and qualitative designs (Neuman, 2011; Polit & Beck, 2010). Quantitative research stresses objectivity and factual facts above the use of personal beliefs and ideals, which qualitative research does sometimes (Polit & Beck, 2010). According to Neuman (2011) and Sarantacus (2005), the purpose of quantitative research is to identify rules that explain, project, or regulate people or groups of persons, as well as lead to quantifiable information. Qualitative research, on the other hand, gathers and analyses subjective data on human experiences, thoughts, feelings, and intentions. Qualitative research aims to understand human behaviour and the causes behind it once again (Creswell, 2014). Qualitative research is generally exploratory and aims to provide a clear, full, and thorough explanation of the study issue. The qualitative approach, in contrast to the quantitative approach, is best employed when there is little or no information on the event or idea under investigation (Creswell, 2007).

This study, however, adopted the qualitative phenomenological survey design since is it suitable to assist the researcher meet the objectives of the study. According to Creswell (2013), phenomenology is an approach to qualitative

research which emphasises the collective values of lived experience within a certain group of people. Phenomenological approach was used because it eliminates biases and preconceived assumptions about human experiences, emotions and reactions to a specific scenario (Creswell & Poth, 2016). Moreover, it will give the researcher insights into the viewpoints of the individuals and also explore the understandings, of those individuals who have actually experienced the situation of interest. Phenomenological survey will best help to evaluate, describe and understand the factors affecting the limited success of CLTS implementation in Central Region. Thus, qualitative research methodologies may be used to create detailed and relevant assessments of a problem. As a result, the participants are free to choose what is appropriate for them (Flick, 2011). There are drawbacks to these benefits. According to Silverman (2010), qualitative research methods occasionally overlook contextual sensitivity in favour of focusing on meaning and experiences.

Study Area

The study area is Central Region, with population of 2,201,863; growth rate of 2.1% per year and 19% sanitation coverage (Ghana Statistical Service, 2010). The region is bordered on the north by Ashanti and the Eastern Region, on the west by the Western Region, on the east by the Greater Accra Region, and on the south by the Gulf of Geinea (Ghana Statistical Service,). The region is the country's second most densely populated one, with a density of 162 people per square kilometer. The Region boasts of the best schools in the country. Also, there are about 32 major festivals in the region, notable among them are Aboakyer, Fetu afahye and Bakatue (Issah, 2019). Agriculture: cocoa, pineapple, grain farming, fishing are the main economic activities of the people.

Other activities include manufacturing, wholesale / retail trading and petty trading (Issah, 2019).

Population

According to Creswell (2007), a population is a group of people, topics, or events that share observable characteristics and are of interest to the principal investigator. This indicates that a population may be any size and that it has at least one (and in some cases multiple) distinguishing qualities that distinguish it from other populations. In addition to the above, the study's population consists of 13 districts where CLTS is presently in use. However, the study focused on five districts where CLTS was first piloted and still being implemented. Also, facilitators, who are trained to facilitate the CLTS programme are part of the study. In addition, verification officers who certified and declare the community Open Defecation Free (ODF), were also part of this study. Finally, the heads of house hold or landlords in communities where CLTS is implemented also form part of the study. The 5 districts are Gomoa Central District (100 communities), Ajumako Enyan (145 communities), Abura Asebu Kwamankese (231 communities), Assin South (176 communities) and Assikuma Odoben Brakwa (460 communities) all comprising 1,110 communities in the Central Region of Ghana (Issah, 2019). These communities are mostly farming communities with few artisans and traders (Ghana Statistical Service, 2010).

The second population who were facilitators were made up of Environmental Health Officers and Community Development officers from the various districts who are trained to guide the facilitation of the CLTS implementation. The study also involved the verification officers made up of

the Regional environmental health officer (REHO), Community Water and Sanitation Agency (CWSA), Department of Community Development, R-SHEP, WASH focal person (RCC), CLTS focal person (EHSD), M&E focal person (EHSD), Regional planning officer and independent verifiers. These people certified and declared the communities ODF by the virtue of the protocols that constitute ODF status. The last sets of population involved the heads of households or landlords in the communities. The heads of the households or landlords were part of the study because they are the final implementers or were the ones who construct the latrine for their homes.

Sampling Procedure

In research, a sample is a representative sample of a population (Kadam & Bhalerao, 2010; Sarantacus, 2005). A sample is therefore a subset of a population (Frey, Botan, & Kreps, 2000). As a result, the sample size refers to the number of people who took part in a study (Kadam & Bhalerao, 2010). Purposive sampling is the method of carefully selecting participants based on their importance in the participation of the study (Polit & Beck, 2008). The population for the research comprised 13 districts in the Central Region. However, this study purposely selected five districts out of which 10 communities were sampled. One ODF and one failed community. Also, two facilitators each from the five selected districts making 10 facilitators and five independent verification officers were also conveniently sampled. Furthermore, with an average of 4 households per community, 40 household heads or landlords were randomly selected. These sample sizes were influenced by Creswell (1998), who state that 5-25 sample size is appropriate for phenomenological research.

Data were collected from three categories of respondents: household heads, facilitators and verification officers. With household heads, the background characteristics focused on sex, age, educational background, occupation, household size and household income. Concerning facilitators and verification officers, the focus was on sex, age, educational qualification, years of service and rank or profession. The following tables (Table 1 – 3) summaries the results on respondents' background characteristics.

Data Collection Instruments

Semi-structured, in-depth, one-on-one interviews are the most popular approaches for eliciting rich, thorough, and first-person responses to the phenomena under investigation in qualitative research (Pietkiewicz, 2014; Smith, 2014). In order to elicit in-depth replies from the participants, a self-developed semi-structured interview guide was employed. The interview guide was developed to collect data from three different populations; facilitators, household heads or landlords and verification officers. Interview guide (1) was for the facilitators; interview guide (2) for landlords and interview guide (3) was for verification officers.

The Interview guide (1) was made up of 34 items consisting of three sections: Sections A, B and C. Section A comprised of items 1-9. This section focused on eliciting response on demographic data such as what is your age, gender, education, number of working years as an environmental health officer and current rank. Section B also comprised items 10-24, which collected information on CLTS protocols such as "tell me how the communities were selected, the steps you took in community entering, how you identified OD spots and how the baseline data was collected. These helps to determining the

knowledge of the facilitators on CLTS implementation. Section C comprised of items 25-34 and it collect information on challenges in CLTS implementation. Participants responded to questions like support from district assembly, difficulty in accessing the communities in terms of road network and availability of resources using five-point Likert scale of Strongly Agreed (5) to Strongly Disagreed (1).

Interview guide (2) was a 23-item consist of three sections: A, B and C. Sections A comprised of items 1-7 which collect information on age, sex, educational background, occupation, income and the number of persons in a household. Section B also comprised of items 8-16 which collected information on latrine acquisition such as; Do you have a latrine; Reasons for not building latrine; Whether there are plans in place to have one; What motivated you to build the toilet etc. Section C also comprised of items 17-23 which also collect information on cultural, social norms and taboos that may affect the implementation of CLTS. Using four (4) point Likert scale of Very Cordial 4 to Very Bad 1, participants responded to questions like the relationship between the chief and the community members, the relationship between the chief and elders and the relationship between the community members and the religious bodies.

Interview guide (3) was a 10 -items in sections A and B. Section A comprised of items 1-5 which collect information on age, sex, educational background, profession and number of years on CLTS programme. Section B comprised of items 6-10 which explored information on expectations and challenges of CLTS in Central Region. Participants responded to questions like; what is your level of involvement in the CLTS programme? What is your

general impression about the CLTS programme in Central Region? How can we improve CLTS to end open defecation?

Data Collection Procedures

Three interview guides that employ face-to-face interaction was used to elicit response from participants. This enables study participants to comment on their experiences while also allowing the researcher to divert replies when they are inappropriate (Creswell, 2014). The Institutional Review Board (IRB) at UCC was consulted for ethical approval (UCCIRB/ CES/2020/40) before interviewing the participants utilising the interview guide.

An introductory letter from the HPER Department, and a permission letter from the Central Regional Environmental Health Officer enabled the researcher to seek the necessary permissions for the data collection. A verbal permission was sought from the participants after giving a description and explaining the study's intent and concepts to them. The participants were also assured of their confidentiality and voluntary participation in the study. Each participant completed an informed consent form before being engaged. The instruments were reviewed first by two Environmental Health Officers and three MPhil Health Education students and then by the supervisors.

The interview was conducted by the researcher with the help of two research assistants who were national service personnel. The interview was one on one with the participants who agreed to be interviewed. Each interview lasted for about 20-25 minutes. The facilitators and the verification officer were interviewed in their various offices whiles the household members were interviewed in the various homes. During the interview, all homeowners talked in the local dialect (Twi), whereas the rest of the participants spoke in English.

Using the participants' agreement, each interview was recorded with an audio recorder. The interviewers took careful note of nonverbal signs in their field notes.

Data Processing and Analysis

Along with data collection, data processing was done. The recorded interview was listened to many times to acquaint ourselves with the material provided, and then a verbatim transcription was done the next day. The data collected from the participants was analysed using a thematic analysis method. Thematic analysis is a technique for detecting, analysing, and reporting data patterns (themes) (Braun & Clarke, 2006). Thematic analysis, according to Braun and Clarke (2006), is divided into six stages: familiarising oneself with the data, creating initial codes, examining themes, defining and labelling themes, and producing the report.

Every interview was meticulously listened to and transcribed or documented. All the transcriptions were done by the researcher. The interviews done in English were transcribed verbatim, where as those done in the local dialect (Twi) were translated to English by one of the research assistants, before being transcribed. The research assistant is an Environmental Health Officer who has experience in the CLTS implementation. Moreover, he is a masters' degree student who has some amount of qualitative research experience and has been involved in translation of interview scripts. Three hours was used for each transcription.

The transcribed interview was reviewed numerous times to familiarise myself with the facts, observations, and impressions. Coding was used to arrange the data in a useful fashion. Each portion of the data that was relevant

to the study topic was coded in this way. To answer the particular research questions, the data was analysed according to the research questions. Each transcribed data (transcript) was coded independently, with sub-themes naming codes from many transcripts that referred to the same thing. As a consequence, each study topic received its own treatment. The sub-themes that suggested a specific notion were then grouped together to form themes. The majority of codes were linked to only one sub-theme, but some were linked to many. Codes that were repeated within a sub-theme were removed. Across the six (6) overall goals, there were 18 themes. Participants' quotes were utilised in the study's results report to support sub-themes.

CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of this study was to find out the factors influencing the limited achievement of CLTS implementation in Central Region. The results and discussions are presented in this chapter.

Table 1: Background characteristics of household heads

Background characteristic	Frequency
Sex	
Male	11
Female	7
Age (in years)	
25 – 35	3
36 – 45	6
46 – 55	4
56 – 65	3
66 +	2
Level of education	
No education	3
Primary	2
Middle/JHS	12
SHS	1
Occupation	
Unemployed	2
Farming	13
Trading	1
Maison	2
Household size	
3 – 5	8
6 – 9	7
10+	3
Household income	
Can't tell	2
100-200	10
300-400	6

Source: Fieldwork, 2020

Table 2: Background characteristics of facilitators

Respondents	Background characteristics				
	Sex	Age (in years)	Educational qualification	Years of service	Rank
Res. 1	Male	35	Diploma	8	Environmental Health Officer Grade 1
Res. 2	Female	31	Certificate	4	Environmental Health Assistant
Res. 3	Male	30	Certificate	4	Environmental Health Assistant
Res. 4	Male	33	Certificate	4	Environmental Health Assistant
Res. 5	Female	34	Degree	9	Assistant Environmental Health Analyst
Res. 6	Female	32	Certificate	4	Environmental Health Assistant
Res. 7	Male	35	Degree	8	Community Development Officer
Res. 8	Male	36	Degree	13	Principal Environmental Health Assistant
Res. 9	Male	35	Certificate	9	Principal Environmental Health Assistant
Res. 10	Male	31	Certificate	4	Environmental Health Assistant

Source: Fieldwork, 2020

Table 3: Background characteristics of verification officers

Respondents	Background characteristics				
	Sex	Age (in years)	Educational qualification	Profession	Years of service (with CLTS program)
Verification Officer 1	Male	47	Masters	Humanitarian worker	7 years
Verification Officer 2	Male	43	Masters	Public Administrator	7 years
Verification Officer 3	Male	34	Diploma	Environmental Health Officer	8 years
Verification Officer 4	Male	43	PhD	Lecturer	3 years

Source: Fieldwork, 2020

Research Question One: How Does the Knowledge of the Facilitators on CLTS Implementation Affect its Implementation in the Central Region?

This research question seeks to measure the depth of knowledge possessed by facilitators concerning the CLTS implementation and protocols. Ten facilitators involved in the implementation of the CLTS project in the Central Region were interviewed. Using thematic content analysis, two themes emerged: knowledge about CLTS implementation process (pre-triggering, triggering, post-triggering); and knowledge about the conduct of facilitators during implementation.

Theme one: Knowledge about CLTS implementation process

The respondents were found to have some appreciable level of knowledge about the importance of the CLTS implementation process, including pre-triggering and triggering, that may lead to the successful

implementation of the project and improving sanitation of the communities. For instance, 95% of the facilitators interviewed responded in the affirmative that pre-triggering is key, it helps in the success of CLTS i.e. constructing of improved latrines, handwashing facility and utilizing them to eliminate or reduce OD. Also, all of them indicated that triggering is one of the main steps in CLTS implementation, to increase community action towards the implementation and success of the project. One explained:

"All communities are not equal so you need to vary your approaches for triggering to be successful." (F1, male, 35yrs)

Many of the facilitators questioned, on the other hand, appear to be unaware of the necessity of post-triggering in CLTS implementation, which will result in the necessary transformation to eliminate OD in project communities. Unfortunately, four of the facilitators (40%) were of the view that post-triggering is not always necessary for the successful implementation of the CLTS project. A facilitator said:

"I strongly agreed that post triggering is not always necessary."

(F2, male, 30yrs)

Theme two: Knowledge about the conduct of facilitators

The analysis revealed that majority of the facilitators have high level of knowledge about the "dos and don'ts" of facilitation that promotes the CLTS implementation. For example, they do not have to promote the construction and the use of particular latrine designs in the project communities, but the use of appropriate available community materials. Seven out of the 10 which constitute about 70% of facilitators interviewed disagreed that it is good to prescribe a latrine to the community members in CLTS implementation. They explained

that facilitation does not mean imposition, rather helping community members to make their own choice. A facilitator indicated:

"Sometimes, looking at the available materials they [the community members] *have, you can suggest options to them."* (F2, female, 31yrs) However, ambivalent results were found concerning the issue of "forcing" community members to build latrines. Thus, while some facilitators were of the notion that the community members must not be forced to build the latrines, others indicated that under certain circumstances (for example, when some community members are not cooperating), community members can be forced. A facilitator indicated:

"When few of the community members are not cooperating, you need to force them." (F1, male, 35yrs)

These results show a mix of knowledge of facilitators on CLTS project implementation protocols. For example, facilitators were very much aware about the steps involved in implementing the project, as well as, the "dos and don'ts" of facilitation. This is in tandem with what Kar and Chambers (2008) stipulated in the CLTS handbook. This may be because all facilitators in the CLTS project were taken through training before their engagement in the implementation of the project. Indeed, Ntow (2012) indicated that CLTS facilitators are taken through training at various levels. In a CLTS pilot project In the Northern Region of Ghana, Ntow (2012), explained after training of facilitators at different levels, a refresher training is also organized for them which leads to harmonization of approaches and skills.

However, some facilitators unfortunately thought community members could be and should be forced in constructing their latrines, a position that

negates their facilitation roles in the project. These facilitators may be thinking so because they still see their roles in the project implementation as local environmental sanitation law enforcers rather than facilitators.

Research Question Two: What Behavioural Approaches are Used in Implementing CLTS Programme in Central Region?

The second research question of the study was to describe the behavioural approaches used in the implementation of the CLTS programme. 10 facilitators and four verification officers were interviewed. Using content analysis, three themes emerged being: training and technical facilitation, community participation and reinforcement/reward.

Theme 1: Training and technical facilitation

The importance of the facilitators' skills has been identified as an important determinant of CLTS success in many communities from different countries. In fact, the way and manner in which facilitators go about their work can either 'make' or 'unmake' the project. The facilitators interviewed indicated that they had to be tactful in their approaches, especially in their communication, so as to win the support of all community members and their leaders. One facilitator expressed:

"We are always strategic in our communication. Every community with how they do things therefore, we learn to adapt. All we do is to, as much as possible, get every community member on board, to accept our message." (F7, male, 35yrs). A different facilitator added: *"The fact that one approach was successful in one community doesn't necessarily mean it will be successful in another community. That is why we* [the facilitators] *are trained to be sensitive and strategic in our approaches."* (F6, female, 32yrs)

A verification officer corroborated this: *"The facilitators are taken through thorough training so as to equip them with skills necessary for the success of the project. In communicating the same message, different approaches may have to be used in different communities because of cultural differences. So, the facilitators are trained to know all these so that they can adopt the most suitable approach in every community."* (VO4, male, 43yrs)

The facilitators and verification officers again made it clear that, in most cases, the community members need technical support on how best to construct the latrines. A verification officer explained: *"Sometimes, the community members may need technical assistance on how to construct latrine that will best suit them and also last longer based on materials that are available. In this way, both the facilitators and verification officers give some form of technical assistance to the community members. Facilitator and verification officers also do give technical assistant in inform of health education on latrine usage, hand washing with soap and on general environmental sanitation for the community to become a sanitized one.* (VO3, male, 34yrs) A facilitator retorted: *"Most of the times, they* [the community members] *need assistance or education on how they can construct durable latrines. Given the materials they have and the nature of the land, we guide them on the best possible way to construct the latrines."* (F5, female, 34yrs)

Theme 2: Community participation

The findings of the study highlight the contributions of community leaders, natural leaders and the entire community members towards the successful implementation of the CLTS project. To ensure that community leaders accept the project and actively participate, proper community entry steps

were undertaken. This was what a facilitator said: *"We first met with the chiefs and the elders of the communities, introduced ourselves and briefed them on the project and offer that they organise the whole community for us on an agreed date."* (F1, male, 35yrs). In expressing a similar view, another facilitator indicated: *"We first met with the chiefs and elders and briefed them on the project. They then organise the whole community for you to meet them."* (F8, male, 36yrs) Another facilitator added: *"After meeting the chiefs and elders, they then organised the whole community for you when they accept the project and are willing to participate."* (F4, male, 33yrs).

It became evident that in communities where the chiefs and opinion leaders are supportive of the project, community members also respond in a positive manner. For example, a facilitator observed: *"The community members are very responsive. They are all trying to do something. Even those who don't have enough money have started* [building latrines] *hoping that they'll get some support to complete… I think their massive support is because their leaders are also involved in the project."* (F9, male, 35yrs)

On the other hand, when community leaders do not show support for the project, the community members also become adamant towards it. A facilitator lamented: *"The opinion leaders in the community are not supportive at all. It is difficult to get them for a meeting because they are always attending to their own businesses. Because of that, the community members are also not showing any seriousness towards the project."* (F6, female, 32yrs) Another facilitator indicated: *"The chief in the community doesn't help a lot. He has given his approval for the project to be carried in the community but he has left everything on us. Sometimes, we just need him to encourage the community members to*

accept the project but he expects us [the facilitators] *to do all that. It has made our work very difficult."* (F7, male, 35yrs)

The facilitators also indicated that natural leaders have played significant roles in the implementation of the CLTS project. The facilitators described the natural leaders as persons interested in and enthusiastic about the project. Not discounting the important role natural leaders' play towards the success of the project, some facilitators indicated that they face challenges working with the natural leaders. The most cited challenges were that the natural leaders want to be paid, some withdraw in the course of the project and that, it is difficult getting them during the farming season. A facilitator affirms:

"The challenges working with them [the natural leaders] *are that some withdraw while the project is ongoing because they feel they are not getting any benefits, i.e. monetary. Some also said the community members have been insulting them for providing information to the facilitators."* (F2, female, 31yrs) Another respondent: *"There are no challenges identifying them* [natural leaders] *but rather working with them. Some of them think that they should be paid because they do follow-ups on community members in the absence of the facilitators."* (F1, male, 35yrs) Another facilitator added: *"Most of them want to be paid and some withdraw because their own community members insult them whenever they* [the natural leaders] *approach them* [the community members] *on the latrine construction."* (F6, female, 32yrs)

Theme 3: Reinforcement/Reward

One important component of the CLTS project is the rewarding of communities that attained ODF. This is a reinforcement measures which has the ability to cause a spill-over effect. Both verification officers and facilitators

indicated the importance of this to the success of the project. Thus, the findings highlight that where there was no reward for ODF communities, the successful implementation of the project is challenged. According to a verification officer:

"The communities which have attained ODF are supposed to be celebrated to serve as a motivation to them and nearby communities. But where the communities achieve ODF and are not rewarded, it becomes difficult to sustain the project in those communities or encourage other communities to embrace the project." (VO1, male, 47yrs) Another verification officer added: *"It is in the CLTS handbook that ODF communities must be rewarded in the form of a celebration. This is to serve as a motivation to them and other communities. It also encourages the facilitators to work hard because their efforts have been recognized."* (VO2, male, 43yrs)

However, some of the facilitators lamented that ODF communities are not being celebrated. *"The communities were promised that when they attain ODF status, they will be celebrated and be given some tools as a reward but not done.* (F10, male, 31yrs) Another facilitator lamented: *"I don't know what is wrong but the ODF communities are not being rewarded. So far, only one community has been celebrated (to the best of my knowledge). Meanwhile, a lot of communities have been declared ODF and need to be rewarded for them to move from just ODF to a sanitized community."* (F4, male, 33yrs)

Some facilitators indicated that non-celebration of ODF communities is a key challenge to the successful implementation of CLTS in different communities. A facilitator cried:

"The communities were promised that when they attain ODF status, they will be celebrated and be given some tools as a reward, but till today (the

time of taken the data), *no ODF community has been celebrated. This demoralises us as facilitators."* (F5, female, 34yrs) Another facilitator indicated: *"The non-celebration of the ODF communities which could serve as a motivation for the failed communities is not helping us as facilitators."* (F6, female, 32yrs). Another facilitator believed that: *"The celebration is a reward system for communities who are doing very well in their sanitation issues. When a community is rewarded by even giving them a sign post indicating that this is a clean and neat community or even sending another project to that community for attaining ODF, it will go a long way to motivate other communities to take up the challenge."* (F3, male, 30yrs)

The verification officers supported this position and retorted: *"When ODF communities are identified and celebrated, it will serve as a motivation factor to other communities to also be identified and rewarded as clean communities."* (VO2, male, 43yrs)

Some verification officers further indicated that the non-celebration of ODF communities is due to negligence on the part of District Assemblies. A verification officer indicated: *"The celebration of ODF communities is an aspect of CLTS but the Assemblies are neglecting it. The celebration of ODF communities need to be initiated by the district where these communities are located. The region only comes to support the district but the District Assemblies never plan for the celebration of their ODF communities."* (VO4, male, 43yrs) Another verification officer lamented: *"the celebration needs to be initiated at the district level before the regional can take it up but the District Assemblies are not forth coming in terms of the celebration. The regional*

minister instituted the district-based award so it is left with the districts to also institute the community-based award. (VO1, male, 47yrs)

The findings reveal that reward (in the form of celebrating ODF communities and giving certificate) is an important tool being used to ensure that community members change their sanitation behaviours, construct, own and use the latrines for the success of the CLTS project. However, the project implementers rarely celebrate ODF communities.

The findings unraveled that training and technical facilitation, community participation and reward are three important behavioural change approaches adopted in the implementation of the CLTS project. This is because these approaches have potential to cause both individual and community behaviour change, leading to adoption of improved and the success of the CLTS project. for instance, technical support is often cited as an enabler in projects that provided guidance directly to communities on latrine construction or trained masons to improve toilet design (Evans et al., 2009; Kalimuthu 2008; Magala & Roberts, 2009). In fact, community members frequently expressed a desire for more guidance from implementers on how to construct a high-quality latrine in order to avoid costly maintenance and repairs that could lead to reversion to OD, and where such supports are available, individuals and communities are more accepting of sanitation improvement programme (Magala & Roberts, 2009; Mwanzia & Misati, 2013).

Technical facilitation may come with naming and shaming where the sanitation of a community is dangerous or refuse to improve after multiple attempts to improve. However, this behaviour change approach must be done in a culturally sensitive manner. For example, a practitioner from Zimbabwe

emphasized the need to be culturally insensitive during facilitation by not being afraid to use bold terminology (Chimhowa, 2010).

The successful implementation of the CLTS project largely depends on the acceptance of the project by community members and their willingness to change to the desired sanitation behaviour, i.e. construction, and use of improved latrine. Thus, it is proper, and that facilitators took proper steps to enter the communities (ie first meeting with the chief and elders to solicit their approval and support for the project). This is consistent with what Kar and Chambers (2008) stipulated that the chiefs and other important persons must be contacted during the pre-triggering stage of CLTS. The approach used to solicit the support of community leaders and subsequently, community members is again similar to what Bediako (2016) reported. Bediako revealed that the implementers of the programme first contacted the chiefs and his elders, some religious and other opinion leaders in the community before the programme was actually (Bediako, 2016). In such manner, project implementers accord community leaders and their members respect which promotes building of trust, engagement and yield total community participation for improved sanitation for the community.

CLTS places a major emphasis on the participation of natural leaders and dedicated community members. Natural leaders "are activists and enthusiasts who emerge and take the lead during CLTS processes" (Kar & Chambers, 2008, p. 5). According to Kar and Chambers (2008), it is best to select 2-4 natural leaders per a community to champion the project (Crocker et al., 2016a) observed that when such motivated community people were selected and trained, CLTS success was much higher than when CLTS was implemented

without such particular training and involvement of natural leaders in rural communities in Ghana. Accordingly, because the natural leaders are from the communities and live there, they serve as promoters of the programme and motivation to the other community members. This could explain why some communities failed to attained ODF their natural leaders withdrew from the programme as a result of lack of motivation.

According to Kar and Chambers (2008), when a community or bigger unit achieves ODF status, a celebration is held to recognize the achievement as well as to inspire passion and commitment among those involved. It is critical that community members be encouraged to show a sign or animation depicting their achievement once 100% sanitation has been accomplished This will boost their self-esteem, as well as pique the interest of visitors to the village who may want to replicate it at home. This will increase their sense of pride and also serve to awaken interest among visitors to the village who may be interested in replicating back home. It is therefore problematic that celebration of success of ODF communities is rarely done. However, failing to reward and properly celebrate communities that attained ODF is demotivating both that community and others on the same path towards improvement in sanitation. Therefore, it is important that ODF communities are rewarded and provided reinforcement to promote improve sanitation. This could mean that, the non-celebrations of ODF communities in Central Region, is one major factor of the limited achievement of ODF in the region.

Behavioural change approaches adopted in CLTS implementation in Central Region included training and technical facilitation, community participation, and reinforcement or reward. Thus, it is very essential that these

approaches be given priority and implemented with every conscious effort to improve upon the implementation outcomes, because environmental sanitation is largely a behavioural health outcome.

Research Question Three: What Challenges Inhibit CLTS Implementation in the Central Region?

This research question sought to explore the challenges associated with the implementation of the CLTS programme in the Central Region. 10 facilitators and four verification officers were interviewed, and using content analysis seven themes emerged. These themes were project time frame being too short, transportation, cultural beliefs and norms, insurance for facilitators, inadequacy of funds and other logistics, lack of commitment of district assemblies and the problem of synergy.

Theme one: Project time frame too short

Some facilitators consider the three months period for the project implementation as too short and thus, inhibits the successful implementation of the project. In response to a question about the challenges faced in implementing the project a facilitator simply said:

"The timeframe of the project is not helping." (F5, female, 34yrs). According to another facilitator: *"The timeline of the project is too short. Everybody is supposed to construct improved latrine in three months. Some are willing but may not be able to finish within the time and after the three months, there are no funds to follow up to encourage those people who could not finished within the three-month period to also finish their construction."* (F6, female, 32yrs)

A different facilitator added: *"Sometimes, we have to help the community members both financially and provide labour ourselves because of*

the timeline of the project so that you can meet the timeline which is within three months." (F4, male, 33yrs)

In addition to the short time frame implementing the project, the time (season) the project was implemented was not favourable for the communities since most of them are farming communities. For instance, a facilitator complained: *"Most of the projects come during farming seasons and it makes it difficult to execute the project successfully since the communities are farming communities."* (F10, male, 31yrs) Thus, during rainy and farming season where many of the community members are working on their farms, it is will be difficult for both the facilitators and the community members to meet that timeline of three months in constructing improved latrines.

Theme two: Politics

The results further revealed that some community members, because of their political affiliation, did not accept the project. In the exact words of one facilitator:

"The community members attached so much politics to the project. Some think we are making their government unpopular by asking the households to build their own latrines." (F2, female, 31yrs)

Some facilitators also feel that because of promises made to the communities by political figures that they will provide the communities with communal latrines, some of the community members do not want to accept the project which they have to provide their own latrines. A facilitator fumed:

"Politicians are promising them [the communities] *that they* [politicians] *will construct latrines for them which they* [politicians] *are not even doing."* (F5, female, 34yrs)

Perhaps, some community members are waiting for these politicians to fulfil their promises and thus, do not want to spend their own resources in constructing latrines. A verification officer also stressed the issue of how politics is affecting successful execution of the project. He indicated:

"Supporters of political parties think that it is the responsibility of the government to provide communities and individual households with toilet facilities. Therefore, those who are not supported feel that government is depriving them of their right." (VO2, male, 43yrs)

Theme three: Cultural beliefs and norms

The beliefs, traditions and norms also pose a great challenge to the implantation of the CLTS project in the Central Region. Specifically, some communities have taboos which prohibit the construction of toilet facilities at some parts of the community. A facilitator explained:

"They have community norm that no latrine should be constructed at the right side of the community because that is where their gods are. Therefore, people living at that side of the community cannot construct household latrines." (F5, female, 34yrs) Moreover, gender roles in the communities becomes another challenge affecting household latrine construction. In some communities, women perceive that it is the duty of men to provide toilet facilities for the household, and thus, the females failed to take active part in the project. A facilitator reiterated: *"Women think that latrine construction is the work of the men in the house so they are not helping even though some have the capacity of helping their husbands to construct the latrines."* (F5, female, 34yrs)

Theme four: No insurance for facilitators

Protection of workers is essential for morale upliftment that normally translates into greater work input, output and outcomes. However, results revealed that there is no insurance package provided for the field facilitators. This throws another key challenge to the implementation of the CLTS programme. Some of the facilitators feel that there should be an insurance cover to protect their health and safety for travelling to and from the communities. A facilitator lamented:

"There are no insurance packages for us as facilitators. We most at times get involved in accident with the motorbike because of the poor nature of the road but nobody takes care of us. Even our hospital bills, we pay ourselves. I nearly lost one of my arms through one of such accidents and I'm still suffering till today but nothing was done for me." (F3, male, 30yrs)

Theme five: Inadequacy of funds and logistics

Availability of funds and other logistical constrains are important for the smooth and successful implementation of every project. Unfortunately, the facilitators lamented of the inadequacy of funds and other logistic Complaining about the inadequacy of logistics, a verification officer said:

"Sometimes, logistics like vehicles are not available for the verification team to move to the field." (VO1, male, 47yrs) Another verification officer added: *"Issues of funding from the central government down to the district level has always been a challenge."* (VO2, male, 43yrs)

Theme six: Lack of commitment from District Assemblies

High level of commitment is required of all stakeholders for any project or programme to be successfully implemented. Thus, in the absence of

commitment from one or more stake-holding individuals or institutions, the successful implementation of any project will be challenged. In the case of the CLTS project, lack of commitment from the District Assemblies was identified as a key challenge to its implementation. According to a verification officer:

"Most of the District Assemblies do not embrace the project as district base. They only see it as a donor project and for that matter fail to provide their quota to support the project." (VO2, male, 43yrs)

Because of lack of commitment to the project, district officers do not always follow the protocols but expect external verification officers to certify their work. Another verification officer complained:

"One major challenge is that when you go for verification, you realise that not all the protocols are followed but the district officers want you to put your integrity on the line and just certify the community which is not right." (VO1, male, 47yrs)

Some verification officers added that in addition to the district assemblies, facilitators and even the communities' lack commitment to the project.

One verification officer said:

"*There are other stakeholders and development partners who are implementing the CLTS in different forms, some provide full support whiles others provide subsidy and others are going purely with the CLTS concept which does not provide any form of support or subsidy.*'' (VO2, male, 43yrs)

Theme seven: Problem of synergy

Many similar and other versions of CLTS are ongoing in the region, with a number of variations with the mode of implementation and adopted

approaches. For example, while some partners offer subsidies to communities, others do not, a situation found to be challenging to the successful implementation of the project. A facilitator lamented:

"We face a lot of challenges with the implementers. Some of the implementers (NGOs) give subsidies while others are not giving subsidies. We are the same facilitators so when Community A is being supported and Community B is not supported, it creates problem for us." (F1, male, 35yrs)

According to one verification officer: *"Some of the development partners are giving full support, some subsidy while others do not give any support. The CLTS concept itself does not provide any form of support to the community members. The community members are to take up the responsibility by building their own household latrines. Because some donors are providing some form of support, it is affecting the project because they are using the same facilitators in the same districts. Community A will not understand why Community B is been supported while they are not. It will make it hard for the same facilitator to go and provide for Community B and tell Community A to build their own latrines."* (VO3, male 34yrs)

Another verification officer said: *"Some of the sanitation projects provide support to the community members, some also provide subsidy as against CLTS concept which requires the communities to construct their own latrines without any form of support. These projects are in the same district but different communities so if one community is been supported and you ask another to build their own latrines, they* [the community which is not supported] *will feel neglected and thus, reluctant to build the latrines themselves."* (VO1, male, 47yrs)

The findings show that the CLTS project in Central Region is bedeviled with many challenges including project time frame being too short, poor timing, transportations issues, politics, inadequacy of funds and other logistical constrains and lack of commitment from the District Assemblies and lack of synergy. In the present study, complaints about project time frame being too short featured prominently as challenges to the successful implementation of the CLTS project. The finding revealed that the facilitators in the present study think that three months period given for the construction of the improved latrines at a project community is too short. The finding contrasts that of Bediako (2016), which indicated that about 38% of respondents considered it as time consuming to allow for long duration for latrine building in rural communities. In fact, more than 13% of the participants in Bediako's study went on to suggest that there should be speeding-up of the CLTS process. However, Francis et al. (2017) found that respondents considered the time required to construct latrines as a challenge, in that they were more particular about investing their time in other ventures other than the construction of latrines. On the other hand, from the Northern Region of Ghana, Ntow (2012) found that the period dedicated to helping communities to attain and sustain ODF status in small towns require a longer period than was previously estimated. The author, suggested that the duration for implementing CLTS in small towns should range between 2 to 3 years to give ample time to facilitators to cause a behaviour change in the households to build, own and use the latrines. Also, the time of the project implementation must also be considered since most of these communities are farming communities.

The finding further revealed that politics play a role in the extent of uptake of CLTS project rural communities. For instance, politicians or government officials mount political platforms and promise community members KVIPs and public toilets. This, according to Bediako (2016), makes the community members think it is the responsibility of government to provide them with latrines so they do not make attempt to provide their own latrines, or a much reluctant to build their own even in such project like CLTS. Moreover, the social, cultural set up of the communities equally affect the success of the project. Specifically, it was found that socio-cultural beliefs such as "it is a taboo to construct latrines" at some parts of the community and that, it is the responsibility of men to provide latrines, hinder the implementation of the project. Some past studies also reported socio-cultural challenges. For example, Venkataramanan, Crocker, Karon and Bartram (2018) reported that in some communities, there is preference for OD due to the cultural or religious beliefs regarding such practices or latrine use.

Latrine sharing could be a taboo in some families (Bulaya et al. 2015; Lawrence et al., 2016; Mukherjee, Robiarto, Saputra, & Wartono, 2012). For example, in parts of Zambia, Lawrence and colleagues reported that there is the long-standing taboo that people should never use the same toilets as their in-laws, members of the opposite sex, or different generations within a family. This belief has produced a formidable barrier to house toilet construction and use in many communities (Lawrence et al., 2016). In some parts of northern Ghana, fear of being possessed by demons or losing your magical powers is an influential cultural belief which hinders people from using common household latrines and thus, resorting to OD (Dittmer, 2009).

Many of the facilitators fumed of the lack of insurance or risk allowance for their activities regarding the CLTS implementation. The CLTS implementation activities including facilitation involve travelling to remote communities where there are many bad and some unmotorable roads, Therefore, there are high occupational health and safety risk exposures associated with facilitators who then demand risk allowances or insurance package. Similarly, Bediako (2016), repeated that motivation is key to CLTS implementation, but Environmental Health Assistants and community development officers put their lives in danger by travelling to various villages for WASH operations on a regular basis, yet they are not compensated for their risk. As a result, they get demotivated and their morale plummets. Moreover, Danjin and Sawyerr (2019) mentioned that no incentive was available for natural leaders involved in the implementation of CLTS project in some Nigeria communities, an issue that posed challenge to the success of the project.

Successful implementation of projects requires adequate, proper and timely disbursement of funds. However, the current finding indicates that inadequate fund poses a major challenge to the successful implementation of CLTS. Inadequate money for monitoring and evaluating triggered and ODF communities, according to Godfrey, Hart, and Rosensweig (2010), is a difficulty for CLTS. Follow-up visits to communities, for example, are critical for tracking their progress toward ODF. Even after a community has achieved ODF, monitoring and assessment are still necessary for long-term sustainability, especially if an award ceremony is planned. These, on the other hand, require financial support. According to Plan Uganda (2011), because to insufficient financial assistance at the district level, maintaining support for triggered

communities until they become ODF is challenging. Facilitators voiced worry about the district's lack of logistical assistance (such as gasoline) for monitoring or follow-up operations with CLTS communities, according to Bediako (2016). Similarly, in a Nigerian study on the challenge of OD and CLTS, Danjin and Sawyerr (2019) reported inadequate follow-up and monitoring due to the lack of funds or delay in the release of the fund as a challenge to a successful implementation of CLTS in Nigeria. Bediako (2016) further cited fuels for vehicle and motor bikes not been readily available due to funding problems as a major challenge to effective monitoring in the CLTS project.

The finding again reports that the District Assemblies lack the commitment to support the project, because they view the project as that of the donors. This is in tandem with the findings of Sah and Negussie (2009), Bediako (2016), and Danjin and Sawyerr (2019). Actually, where there is lack of commitment from persons in positions of authority, successful implementation of projects is hampered. Danjin and Sawyerr (2019) captured it as weak political commitment to CLTS projects. The assemblies do not support the CLTS project financially because according to Bediako, sanitation issues are not of paramount interest to the districts. In fact, an Environmental Health Officer lamented *"the heads in the district such as the District Chief Executive and District Coordinating Director have not prioritised sanitation and as a result, they do not see the relevance of our work."*

The situation whereby some communities are provided with subsidies and others are not, is indeed, challenging. When subsidies are provided, community members do not internalize the project (thus, they do not own the project) (Karl as cited in (Wellington, Larbi & Appiah, 2011) which hampers

sustainability. Therefore, Kar, the pioneer of CLTS, proposed a total disregard to subsidy and promoted an approach that is entirely community-led, internalized by the people and would bring total sanitation to their communities. On this premise, the CLTS idea is defeated if subsidies are provided in some communities. In addition, assessment of the success of the project becomes a problem because the same approach was not employed to implement the project in all communities.

Research Question Four: How Do ODF Communities Differ from Failed Communities in Terms of Settings in Central Region?

The fourth research question was to find out how the settings of ODF communities differ from other communities which have not attained ODF status. Eighteen (18) household heads from both ODF and failed communities were interviewed. Using content analysis, three themes emerged: relationship with elders, attendance to community gatherings and existence of taboos and norms.

Theme one: Relationship with leaders

The current findings revealed that in ODF communities, there is a cordial relationship between community members and their leaders or elders. On the contrary, in failed communities, no such cordiality exists between community member and their leaders. A household head from a failed community had this to say concerning the relationship between them and their leaders: *"The relationship between the elders and the community members is not all that good. The chief has sold all the land and we don't even have a place for refuse dump so the youth don't like him."* (HH1, female, 25yrs). On the other hand, all the household heads from ODF communities indicated that they do not have any problem with their leaders. According to some of them, everyone in

the community is treated equally so there is no problem among them. A household head from ODF community had this to say concerning the relationship between the community members and the elders:

"The relationship between the elders and the community members is very cordial. Male, female and children are all allowed to say their views during gatherings." (HH2, male, 59yrs).

Theme two: Attendance to community gatherings

It was also found that ODF and failed communities differ in terms of how community gatherings are been organised. While everyone (including women and children) is allowed to attend community gatherings in ODF communities, that was not the case with failed communities. In those communities, children are not permitted to attend gatherings while young women are not allowed to make contributions. One respondent indicated that:

"Children are not allowed to come to the gathering and for women, only the elderly are allowed to talk." (HH3, female, 25yrs) Similarly, another household head lamented: *"Children below 18 years are not allowed to gathering and young women are also not allowed to talk."* (HH4, male, 90yrs) A different respondent cried: *"Young women are not allowed to say anything as far as the development of the community is concerned."* (HH5, female, 25yrs).

Contrary to the above, respondents from ODF communities indicated that in their communities, all persons (irrespective of sex) are allowed to attend gatherings and make contributions. According to these respondents, there is no discrimination as to who could talk at a gathering and who cannot. In not too many words, a household head said: *"Everyone is allowed to talk at a*

gathering." (HH6, male, 65yrs). Another explained: *"Everyone is allowed to talk just that most of the times, children go to school before we meet."* (HH7, female, 50yrs). Thus, there is community spirit with which they work to build, own and use their latrines.

Theme three: Existence of taboos and norms

The result further indicates that the ODF communities have taboos, by-laws and norms against defecation in the open. However, many of these taboos, by-laws and norms do not exist in failed communities. Respondents from failed communities mentioned without any equivocation that there are no by-laws or norms in their communities against OD or sanitation in general. A respondent from an ODF community explained that:

"There is a norm that nobody should defecate around openly and also on our taboo days, we all come together to clean the community. Failure to participate attract a fine of 10 cedis." (HH8, male, 65yrs).

A head similarly expressed: *"There is a by-law that no one should defecate openly and also on every Tuesday, there is a communal labour where we all clean the community. Failure attracts a fine of 15 cedis for males and 10 cedis for females."* (HH9, male, 52yrs). This also makes the men more superior in directing the affairs on community matters. Another respondent saw it more as an agreement among the community members rather than a norm against insanitary practices. He rather thought of it as a community agreement: *"I don't know of any taboos or norms or by-laws related to sanitation in this community but we have agreed that nobody should defecate in the nearby bush."* (HH10, female, 50yrs).

The findings revealed a cordial relationship between community members and their leaders, inclusiveness in attendance to community gathering and decision making, and the existent of taboos, by-laws and norms in ODF attained communities, but not in the failed ones. It is not surprising that in communities which failed to attain ODF status, relationship between members and their leaders was poor. Leaders are often said to be agents of change, they lead their members towards the attainment of desired goals. However, when community members lose trust in their leaders or when for some reason(s), they are not in good relations with their leaders, the influence which their leaders exert on their members diminishes. Communities with influential leaders that support the goals of CLTS are more likely to produce favourable intervention outcomes (Harter, 2018), building and utilizing the latrines. Crocker et al. (2016a) and Crocker et al. (2016b) indicate that strong local leadership is supportive of CLTS outcomes. That is, where there is a trusted and respected community leadership, CLTS is very likely to be successful.

The findings further show that communities which went through verification and declared failed were not inclusive in organizing and taking decisions concerning CLTS implementation. This finding is in support of that of Oko-Williams, Lambongang and Bundle (2011) which found out that active participation of both men and women in project CLTS, as well as shared responsibility of managing the project activities are important due to their different roles and needs. Thus, CLTS is likely to fail if one gender is relegated in the planning and implementation of activities. In another vein, Aranda (2016) reported that CLTS meetings were mainly attended by women because they mostly remain at home, and are the main care takers of sanitation at the house.

That is, neglecting women and even children in the issues of sanitation is likely to result in failed attempt to solving such issues.

The emphasis of CLTS is mainly on the community. This stand is in contrast to behaviour change theories that advocate the focus on individual level behavioural change (Abraham & Michie, 2008; Dreibelbis et al., 2013). Thus, collective societal norms prescribe behaviour for community members and determine what is right or wrong. That is, individual's behaviour is not only influenced by their personal beliefs but also by collective norms. Therefore, while collective norms in one society could enhance the adoption of CLTS, those in another society may not. In other words, the set-up of a community greatly influences their sanitation behaviour, generally, and their adoption of CLTS, specifically.

The study revealed that in ODF communities, there are by-laws on sanitation which may deter people from putting up insanitary practices including the practice of OD. However, the application of these by-laws is absent in communities who failed to attain ODF status. This finding corroborates what Harter (2018) reported, that positive changes in social norms meditate the effects of CLTS on latrine construction at the individual level. Thus, where there are positive social norms, individuals are more likely to construct their own latrines and use such (which is the core of the CLTS program).

In fact, hierarchical pressure has a strong influence on behaviour. Traditional leaders, including chiefs and village headmen, have important cultural and legal influences in communities and play a major role in changing sanitation behaviours (Lawrence, et al., 2016). In the absence of these

authorities to legislate and enforce by-laws, community members may do things as they wish and thus, it is no wonder that in failed communities, there are no norms or taboos governing sanitation behaviour of community members.

Research Question Five: What are the Challenges Community Members Face in the Construction of the Improved Latrines from the CLTS Programme in Central Region?

The fifth research question sought to determine the challenges faced by community members in constructing improved latrines from the CLTS project. Eighteen household heads were interviewed. Using content analysis for data, two themes emerged i.e. financial challenges and unfavourable soil conditions.

Theme one: Financial challenges

Majority of household heads in failed communities indicated that they are not able to construct private latrines because of financial constraints. For instance, one household head said:

"I was not having money when they brought the project and now, they said the project has ended. I have built the toilet room and dug the pit waiting to be given the slab and the vent pipe but they are no more coming." (HH11, female, 75yrs). Another responded: *"My mother fell sick and I was taking care of her at a treatment center so I couldn't get money to complete the latrine."* (HH12, male, 43yrs). Another reiterated: *"The time they brought the project, my husband was not around and I couldn't get money for the digging of the hole and the building of the toilet room. My husband is waiting for the assembly to come and give us the support but they are no more coming."* (HH13, female, 25yrs).

The results also revealed that some community members actually started constructing their own latrines but had to abandon it due to financial challenges.

In the words of a household head: *"We started building the latrine but there is no money to complete so we left it like that. When we harvest cocoa this year, we will complete it."* (HH14, female, 40yrs).

Theme two: Unfavourable soil conditions

Another challenge faced by community members in constructing latrines for their households is unfavourable soil conditions. Specifically, some household heads complained that the water-logged nature of the soil is a hindrance to the construction of private latrines. A head lamented:

"The land is water-logged so when you dig a little pit, it is filled with water. It is preventing us from building the latrines. We don't even know what to do about the water situation." (HH15, male, 48yrs).

The successful implementation of the CLTS project is dependent on a lot of factors including not only the willingness of community members to build and use improved household latrines but also, their ability to afford materials to construct their own latrines. Community member's inability to afford their own latrines featured prominently among the challenges to the successful implementation of the CLTS project (Bediako, 2016). In the study of Bediako, about nine percent of community members said they cannot afford to build their own latrines. Similar challenges were reported by Francis et al. (2017); Odagiri et al. (2017) from rural Indonesia and Timor-Leste, respectively, and that the cost of constructing latrines could be a major deterrent to building latrines at household level. In fact, according to Francis and colleagues, the financial cost of constructing a toilet is the most cited barrier mentioned by representatives of households. Dittmer (2009) also identified same cost as challenge building proper sanitation household sanitation facilities among some residences from

the northern Ghana. The author highlighted that poverty is at the center of the barriers to constructing private latrines, and added that people who cannot afford chemical fertilisers encourage defecation in their fields, as it is a ready and cheap source of fertiliser hence, building latrines in these communities is perceived as depriving farmers of a useful – although hazardous.

This finding is similar to some previous studies of (Bediako, 2016; Dittmer, 2009; Ntow, 2012), that the nature of the land available to the households determines their extent of provision and use of such facilities like improved latrines. For instance, Bediako (2016) reported that the water-logged nature of soil was a key challenge which made it impossible for the successful implementation of the CLTS project. Also, in a pilot study of the implementation of CLTS in small towns in the Northern Region of Ghana, unfavourable soil condition was reported as a major challenge to the implementation of the project. The study concluded that most individuals seeking to construct household latrines were facing a daunting task as most parts of Karaga town sit on a massive stretch of rocks underneath the surface (Ntow, 2012). The same challenge was reported by a Zambian study where community members complained about the sandy nature of the soil (Lawrence et al., 2016). Lawrence et al. observed that some areas have sandy soil so digging a pit and putting logs on to build a very durable latrine was impossible. Moreover, it sometimes become more problematic when the rains start and water begin to flow into the latrine, a situation which normally collapses the latrines. In this such cases, adequate technical support in facilitating latrine construction (Malaga & Roberts, 2009) becomes very important to building affordable and durable improved household latrine to use. In fact, technical assistance from

CLTS implementers is an important element to the success of the programme. This is because it helps the community members to determine the soil condition and how best they can construct suitable latrines.

Research Question Six: How Do Socio-Economic, Cultural and Demographic Factors Affect CLTS Implementation in Central Region?

This research question sought to examine how socio-economic and demographic factors affect the implementation of CLTS in the Central Region. Eighteen household heads were interviewed, of which 8 (39%) did not have latrines at home. Majority of those who do not own latrines earn GHC200 or less in a month. In fact, only one of the eight household heads earn more than GHC200 monthly.

Concerning household size, the results are ambivalent. Respondents without latrines are spread across both small and large household sizes. Also, individuals with latrines at home are spread across both small and large household sizes. This gives the indication that household size may not necessarily be a factor which affects the implementation of CLTS in the Central Region. The level of education of the household heads shows that at least those with JHS level of education were those mostly having the latrines constructed at home. On the other hand, their counterparts with primary or no formal education constituted the majority of heads without latrines at home.

Latrine construction comes at a cost, therefore, the more financially resourced a household is the more likely to construct, own and use a latrine. This follows the basic economic principle that demand for a commodity (in this case a latrine) is affected by both the willingness and ability to afford. In fact, Odagiri et al. (2017) reported that the cost associated with latrine construction is a major determinant of latrine ownership and use. The study further reported

that being in the richest wealth quintile increased the likelihood of owning a latrine. That is, probably, households which earned less than GHC200 monthly are more concerned about their basic needs of food and shelter than they are concerned about private latrines. To them, it will be irrational to commit household resources into constructing latrines when there is not enough food to feed everyone in the household.

The finding further indicated that the number of occupants in a household does not necessarily determine whether the house would build and use an improved latrine. This is in supports of Crocker, Saywell and Bartram (2017) from Ethiopia and Ghana, who revealed on the sustainability of CLTS outcomes that household size was not a determinant of latrine ownership and usage. However, it may be argued that households which are small in size are more likely to build own and use improved latrines compared with the larger ones but the evidence gathered from the current study does not support this argument because respondents without latrines are spread across both small and large household sizes.

Moreover, it was found that the more educated the head of the household, the likely it is that such a household will build, own and use an improved latrine. This finding is consistent with reports from past studies (Alemu, Kumie, Medhin & Gasana, 2018; Rodgers, Ajono, Gyapong, Hagan, & Emerson, 2007; Zeleke, Gelaye & Mekonnen, 2019). For example, Zeleke, et al. found that household ownership and use of improved latrines increased with educational level of household head. Similarly, Alemu and colleagues found that persons with at least high school education were about two times more likely to own and use improved latrines compared with their counterparts

with no formal education. This finding could be explained by the fact that the better educated are more likely to understand and appreciate the dangers associated with insanitary practices. Osumanu, Kosoe and Ategeeng (2019) in their study on the determinants of open defecation in the Wa municipality of Ghana, reported that 65 percent of households with uneducated heads do not own home toilets and were likely to defecate openly. Furthermore, a home headed by an educated person has an 18.5 percent higher chance of not defecating openly than a household headed by an uneducated person (Osumanu et al., 2019). This is not surprising, given that educated household heads are aware of the dangers of open defecation and the need of having a toilet at home. Again, a higher level of education perhaps increases the earning potential of a household and its members, thereby expanding their capacity to construct a toilet facility (Paavola, 2008).

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to find the factors influencing the limited achievement of CLTS implementation in the Central Region. This chapter is composed of the summary, main findings, conclusions and recommendations.

Summary

Globally, poor environmental sanitation including the practice of OD is devastating because of the various health effects such as diarrheal diseases (cholera, yellow fever) it comes along with. It is for this reason that this study seeks to unveil the factors that is impeding the success of CLTS which would have help solve urban sanitation issues and prevent the spread of sanitation related diseases in the country. The findings of this study show a good knowledge of facilitators on CLTS project implementation protocols. For example, facilitators were very much aware about the steps involved in implementing the project, as well as, the "dos and don'ts" of facilitation. This may be because all facilitators in the CLTS project were taken through training before their engagement in the implementation of the project. The findings again reveal that reward (in the form of celebrating ODF communities and giving certificate) is an important tool that could be used to ensure that community members change their sanitation behaviours. Also, training and technical facilitation, community participation and reward are three important behavioural change approaches adopted in the implementation of the CLTS project. These approaches are used because they have the potential to cause both individual and community behaviour change, leading to the adoption of improved and the success of the CLTS project. The findings again show that the

CLTS project in Central Region is bedeviled with many challenges including project time frame being too short, poor timing, transportations issues, politics, inadequacy of funds and other logistical constrains and lack of commitment from the District Assemblies and lack of synergy. The findings revealed a cordial relationship between community members and their leaders, inclusiveness in attendance to community gathering and decision making, and the existent of taboos, by-laws and norms in ODF attained communities which very important in the success of the project but does not exist in the failed ones. The successful implementation of the CLTS project is dependent on a lot of factors including not only the willingness of community members to build and use improved household latrines but also, their ability to afford materials to construct their own latrines. Community member's inability to afford their own latrines featured prominently among the challenges to the successful implementation of the CLTS project. The finding further indicated that the number of occupants in a household does not necessarily determine whether the house would build and use an improved latrine. Moreover, it was found that the more educated the head of the household, the likely it is that such a household will build, own and use an improved latrine.

Key Findings

The following findings are based on the results:

1. Facilitators and members in the project communities were found to have some appreciable level of knowledge about the importance of the CLTS project and the implementation process, including pre-triggering, triggering and the "dos and don'ts" of facilitation that may lead to the

successful implementation of the project and improving sanitation of their communities.

2. The findings unraveled that training, technical facilitation and community participation are three important behavioural change approaches adopted in the implementation of the CLTS project in Central Region.
3. The key challenges to the success of the CLTS project are: project time frame being too short; issues about politics (political affiliation of CMs, promises by political leaders); beliefs, traditions and norms, inadequacy of funds and logistics, lack of commitment from the District Assemblies, non-celebration of ODF communities, The study also reveals that field facilitators are left venerable since they are not covered under any insurance package and most of the natural leaders want to be paid for organising the community members in attaining ODF and for that matter, most of them withdraw from the project.
4. The findings reveal that in ODF communities, there is a cordial relationship between community members and their leaders/elders, which does not exist in the failed communities. While everyone (including women and children) is allowed to attend community gatherings in ODF communities, that was not the case in failed communities. In ODF communities, there are norms and taboos regarding open defecation and sanitation whereas no such norms and taboos exist in failed communities.
5. The key challenges faced by community members in the constructed of improved latrines were financial constraints and unfavourable soil

conditions. Specifically, water-logged nature of the soil hindered the construction of improved latrines.

6. Income and educational level of household head also affect ownership and use of improved latrines.

Conclusions

The following conclusions were drawn based on the findings:

1. Non celebration of ODF communities and lack of commitment from the District Assemblies are impeding the success of CLTS in Central Region.
2. The situation whereby some communities are provided with subsidies and others are not, is indeed, challenge to the CLTS implementation.
3. Non availability of funds, logistics and lack of motivation inform of insurance package for the facilitators are also affecting the implementation negatively.
4. Culture practises and norms of the various communities are limiting the success of the CLTS implementing in Central Region.
5. Poverty is one major factor that is impeding the success of CLTS implementation in Central Region.
6. Partisan politics is influencing the success of CLTS negatively.

Recommendations

The following recommendations are made based on the findings:

1. It is recommended that a three months project duration to be extended to about a year to ensure proper environmental sanitation behaviour to be established among member communities so to construct their own latrines and be able to maintain them if they are broken later.

2. District assemblies are encouraged to institute effective reward systems so that communities that attain ODF status will be rewarded accordingly. This is believed will have a spill-over effect on other communities struggling to achieve ODF status.
3. It is recommended that appropriate coordination be done to align the various CLTS projects to the same implementation modalities. Thus, donors and implementers need to work together coordinate the projects similarly to avoid situations where some communities of similar nature are being giving subsides or aids while others are not giving anything.
4. The District Assemblies are also encouraged to own the CLTS project, invest into the project and equip the Environmental Health Officers to carry out the implementation as planned throughout all communities to attain sanitized status.

Suggestions for Future Research

1. Future studies could explore the sustainability of the latrine construction and usage in the CLTS communities.
2. There is the need to explore whether CLTS could be a panacea to solving rural sanitation challenges in the region.

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APPENDICES

APPENDIX A

Instruments for Data Collection

Introduction

This questionnaire has been designed to collect data on the factors affecting Community Led- Total Sanitation (CLTS) implementation in Central Region. This is in partial fulfilment for the award of Master of Philosophy in Health Education. This information is purely for academic purpose and therefore its confidentiality is highly guaranteed. You are therefore kindly requested to provide accurate answers to the following questions. Your co-operation and support will be appreciated thank you.

Interview Guide 1 for CLTS Facilitators

Section A: Demographic Characteristics of Respondents

1. Gender [ ] Male [ ] Female
2. What is your age (please specify)?.....years
3. Please indicate your level of education [ ] Certificate [ ] Diploma
   [ ] Graduate [ ] Post graduate
4. How long have you been serving as environmental health officer (please specify)?.....years
5. What is your current rank (please specify)?.....
6. How did you become a facilitator (please specify).....
7. How long have you been a CLTS facilitator?
   1-2 years [ ] 3-4 years [ ] 5-6 years [ ] 7 years and above [ ]
8. Tell me the number of communities you have triggered so far?
   1-5 Communities [ ] 6-10 Communities [ ] 11-15 Communities [ ] 16 and above [ ]

9. How many of your communities have attained ODF? ……

SECTION B: PROTOCOLS IN CLTS IMPLEMENTATION

10. Tell me how the communities were selected……..

11. Tell me the steps you took in your community entering ……

12. Tell me the various categories of person you interacted with in the community

Men only [ ] Women only [ ] Children only [ ]

Men and Women together [ ]

Men and children together [ ] Women and Children together [ ]

Men, Women and Children together [ ]

13. Tell me how you collected your baseline data of the communities? .....

14. Did you identify any open defecation spot in the community? ……..

15. How did you get to know the open defecation spots in the community?

16. How did you identify natural leaders in your communities? ……...

17. What are the challenges with identifying and working with natural leaders?

18. Tell me where natural leaders do not emerge, what do you do? ……

The following are protocols to be followed for a successful CLTS implementation. Please tell me how you agreed or disagreed to the following protocols.
SA= Strongly agreed, A= Agreed, NS= Not sure, D= Disagreed, SD= Strongly Disagreed

QUESTIONS	AS	A	NS	D	SD
. Pre-triggering helps in the success of CLTS.					
. Triggering is one of the main steps in CLST implementation.					

Post triggering is not always necessary in CLTS implementation.					
Sometimes facilitators need to force the community members to build household latrines in CLTS implementation.					
It is good to prescribe a latrine as a facilitator to the community members in CLTS implementation.					
Triggering should be successful in all communities because all communities are equal in terms of settings					

SECTION C: Challenges in CLTS implementation

Please tell me how you agreed or disagreed to the following as challenges in CLTS implementation

SA= Strongly agreed, A= Agreed, NS= Not Sure, D= Disagreed, SD= Strongly Disagreed

QUESTION: The following are challenges to CLTS implementation	SA	A	NS	D	SD
Non-support from the District Assemblies.					
Difficulty in accessing the communities.					
Inadequate resources like motorbike.					
Untimely execution of the project.					

Lack of motivation on the side of implementers to the facilitators					
Poor attitude towards the project by community members.					
Low level of support by the chiefs and elders of the communities.					
Multiplicity of projects from different institutions in the community.					
Lack of collaborations among CLTS the stakeholders.					

34. What are the other challenges associated with your work in terms of:

ii Community norms .....

ii Cultural issues.....

iii Taboos. .....

Interview Guide 2 for Householders

Section A: Demographic Characteristics

1. Gender [ ] male [ ] female
2. What is your age? (Please specify).....years
3. Please indicate your level of education

   Primary school [ ] Middle school [ ] JHS [ ] SHS [ ] Tertiary [ ] No education [ ]
4. What is your main occupation (please specify) .....
5. How many are you in the household? (please specify).....
6. Tell me how many members of your household earn income? .....
7. What are your income levels? ₵1000-200 [ ] ₵300-400 [ ]

   ₵500-700 [ ] ₵1000 and above

SECTION B: Latrine Acquisition

8. Do have a latrine in your home? Yes [ ] No [ ] if yes, continue from question 10, if No, continue from question 15
9. Which type? (a) WC [ ] (b) KVIP [ ] (c) VIP [ ] (d) DIGNILOO [ ]

   (e) Any other please specified .....
10. Please give me reason for building the type in your home .....
11. Did you receive any support? [ ] Yes [ ] No
12. If yes to question 11, what form of support? .....
13. Tell me what motivated you to build the latrine? .....
14. What challenges do have in the use of the latrine built? .....
15. Those who do not have why don't you have a latrine in your home? ...

SECTION C: Socio Cultural and Social norms

16. Do you have any taboos, norms and bylaws related to sanitation in your community?

……

The under listed responses will help establish the relationship that exist between the stakeholders of CLTS in the community. Please indicate your agreement to the following answer questions.

VC= Very Cordial, C= Cordial, B= Bad, VB= Very Bad

Questions	VC	C	B	VB
What is the relationship between the community members and the chief?				
What is the relationship between the chief and the elders of the community?				
What is the relationship between the chief and other stakeholders in the community?				
What is the relationship between the unit committee members, and the community members?				
What is the relationship between the Assemblyman and the community members?				
What is the relationship between the religious bodies and the traditional authorities in the communities?				
How are women and children treated in the community?				

Interview Guide: 3 for Verification Officers

1. Gender male [ ] female [ ]

2. What is your age? (please specify) .....years

3. Please tell me your educational qualification.....

4. Please tell me your profession .....

5. Please how long have you been on CLTS programme in Central Region? .....

6. What is your level of involvement in the CLTS implementation? .....

7. How do other sanitation projects in the region affect the implementation of CLTS?

8. What are your general impressions about the CLTS programme in Central Region?

9. How can we improve CLTS to end open defecation? .....

10. To what extent do you think CLTS can solve the challenges of open defecation or general sanitation issues?

APPENDIX B

COVER LETTER

My name is Immaculate Adzimah, an M.Phil (Health Education) student at the Department of HPER, UCC. I am contacting you to participate in a

research study on: "**Evaluation of Factors Influencing the Limited Achievement of CLTS Implementation in Central Region".**

Your participation will be require in the following interview which will take 20-25 minutes of your time. You were selected among a poll of participants and your responses will be analyzed as a group. No information that will identify you is required.

For any information contact my supervisors **Dr. Edward Wilson Anash (0247703379) or Dr. Daniel Appak (0208587866)**

Yours Sincerely

.....

Immaculate Adzimah

(0246468557)

APPENDIX C

INFORMED CONSENT FORM

My name is Immaculate Adzimah, an M.Phil (Health Education) student at the Department of HPER, UCC. I am contacting you to participate in a research study on: **"Evaluation of Factors Influencing the Limited Achievement of CLTS Implementation in Central Region"**

Please complete the attached form before you respond to the survey.

I fully understand my participation in this study. I hereby willingly agree to participate.

Attendant Name.....

Signature.....

Date.....

APPENDIX D

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309/ 0244207814
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IORG #: IORG0009096

C/O Directorate of Research, Innovation and Consultancy

2ND SEPTEMBER, 2020

Ms. Immaculate Adzimah
Department of Health, Physical Education and Recreation
University of Cape Coast

Dear Ms. Adzimah,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2020/40)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol **Evaluation of Factors Affecting the Implementation of Community Led Total Station (CLTS) in Central Region, Ghana.** This approval is valid from 2nd September, 2020 to 1st September, 2021. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

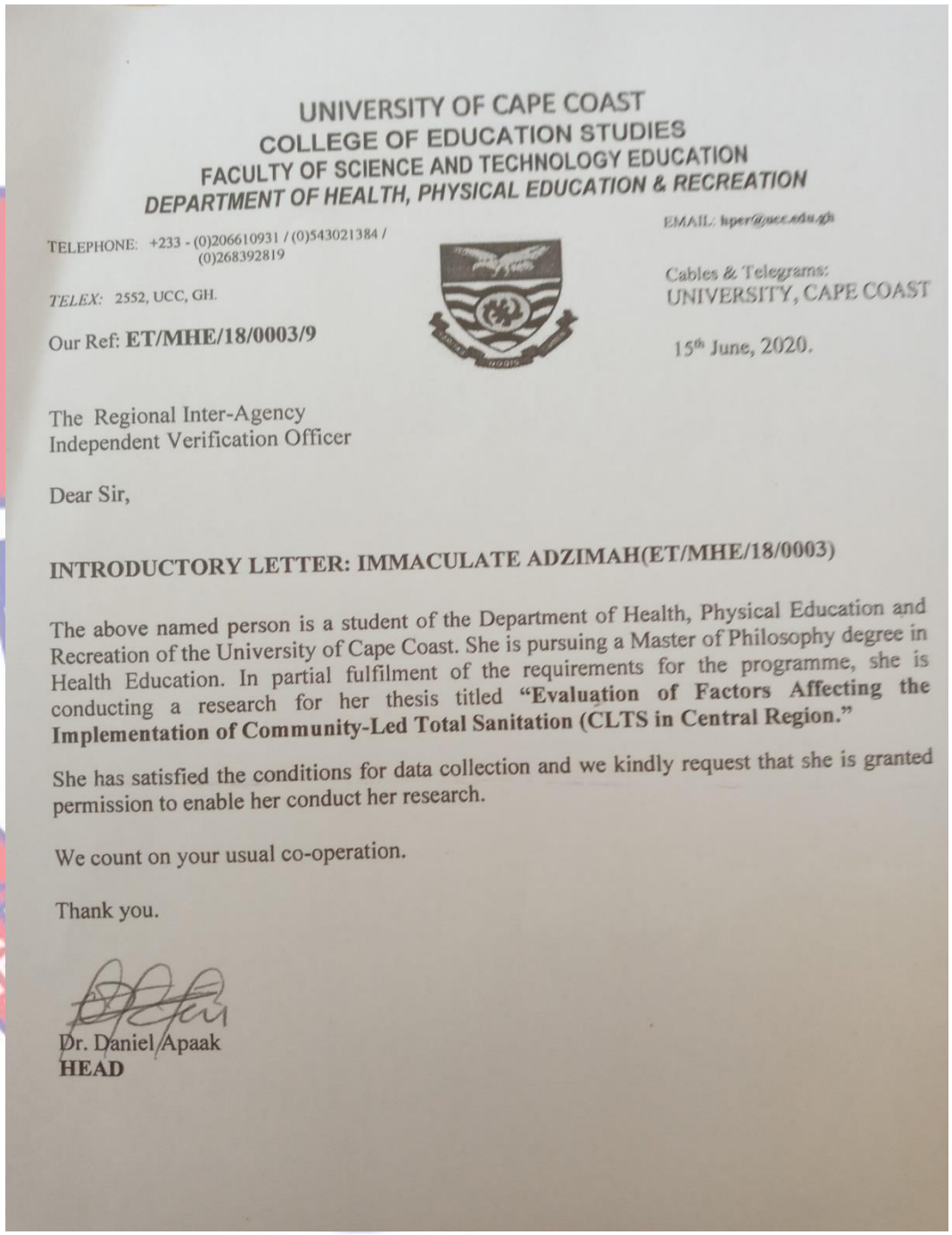
Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST

APPENDIX E

INTRODUCTORY LETTER



UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

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Cables & Telegrams:
UNIVERSITY, CAPE COAST

Our Ref: **ET/MHE/18/0003/9**

15th June, 2020.

The Regional Inter-Agency
Independent Verification Officer

Dear Sir,

INTRODUCTORY LETTER: IMMACULATE ADZIMAH(ET/MHE/18/0003)

The above named person is a student of the Department of Health, Physical Education and Recreation of the University of Cape Coast. She is pursuing a Master of Philosophy degree in Health Education. In partial fulfilment of the requirements for the programme, she is conducting a research for her thesis titled **"Evaluation of Factors Affecting the Implementation of Community-Led Total Sanitation (CLTS in Central Region."**

She has satisfied the conditions for data collection and we kindly request that she is granted permission to enable her conduct her research.

We count on your usual co-operation.

Thank you.

Dr. Daniel Apaak
HEAD