GHANA INSTITUTE OF JOURNALISM (GIJ)

SOCIAL AND BEHAVIOURAL CHANGE COMMUNICATION STRATEGIES IN TACKLING SANITATION CHALLENGES IN ACCRA: EVALUATION OF ACCRA METROPOLITAN ASSEMBLY'S STRATEGIES

BY

DIAMOND HEYNNOR

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Dissertation submitted to the School of Graduate Studies, Ghana Institute of Journalism (GIJ) in partial fulfilment of the requirements for the award of Master of Art degree in Development communication.

DECEMBER 2021

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation 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: 21/10/2021

Name: Diamond Heymor

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the Ghana Institute of Journalism (GIJ).

Supervisor's Signature..... Date: 21/10/2021

Name: Kodwo Jones Anson Bonsu

DEDICATION

I dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have I soared. I also dedicate this work to my wife: Edith Anima Darko who has encouraged me all the way and whose encouragement has made sure that I give it all it takes to finish that which I have started. To my mother Chief Superintendent (Rtd.) Elizabeth Ami Alormatu, who has been so supportive and my bedrock God richly bless you mother. I will like to dedicate this to all the seasoned lecturers of Ghana Institute of journalism (GIJ) especially to Dr. Kodwo Jonas Anson Boateng, who dedicated his time from his busy schedule, and had been nicely my supporter until my research was fully finished, he had encouraged me attentively with his fullest and truest attention to accomplish my work with truthful self-confidence God bless you

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ABSTRACT

The problem of sanitation is a major point of discourse in Ghana and its urban cities. This study ascertains the role of Social and Behavioural Change Communication (SBCC) strategies in tackling sanitation challenges in Accra Metropolitan Assembly. A descriptive survey design with a mixed method approach was used for the study. A sample of 230 respondents from the population, made up of 210 households and enterprises, 5 officials of AMA, 5 officials of the private waste management companies, 5 communication and 5 waste management officers were used for the study. The data for the study was collected using questionnaires and interviews, supported with secondary data obtained from documentary reviews. Thematic and content analysis was used to analyse the interviews and documents, while descriptive statistics were used to analyse the questionnaire. The study found that SBCC tactics included advocacy, social mobilization, and behaviour change communication. Also, promoting SWM and sanitation was done at marketplaces, schools, and churches. In addition, the government employed print and video media to educate the population. The SBCC strategies employed to address sanitation were largely effective but nonetheless constrained by certain factors in the aspects of logistics, financing, miseducation and political lack of will.

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LIST OF ABBREVIATIONS

AMA	Accra Metropolitan Assembly
BCC	Behaviour Change Communication
CSOs	Civil Society Organizations
CWSA	Community Water and Sanitation Agency
DOI	Diffusion of Innovation
GAMA	Greater Accra Metropolitan Area
GWCL	Ghana Water Company Limited
IEC	Information, Education and Communication
LSHTM	London School of Hygiene and Tropical Medicine
MMDAs	Metropolitan, Municipal and District Assemblies
MoI	Ministry of Information
MSWR	Ministry of Sanitation and Water Resources
MTDP	Medium-Term Development Plan
RBV	Resource-Based Theory
SBCC	Social and Behavioural Change Communication
SCI	Sense of Community Index
SEM	Socio-Ecological Model
SOC	Sense of Community
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations Children's Fund
VIP	Ventilated Improved Pit Latrine
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of The Study

Sanitation and hygiene promotion are still the two most effective interventions for controlling endemic diarrhoea (Laxminarayan, Chow & Shahid-Salles, 2006) and sanitation and hygiene related diseases. However, the issue of sanitation and waste management is a major concern faced by many developing countries confronting rapid urbanisation (Songsore, 2003). Rapid urban growth has far surpassed the capacity of metropolitan and municipal governments in many of these development countries to provide basic amenities, including proper sanitation. The weak institutions of local governments and lack of transparency and accountability in the local government have further aggravated this situation (Hardoy, Hardoy, Pandiella, & Urquiza, 2005). The scenario, in most instances, is one of the overflowing trash bins in these cities, particularly impoverished neighbourhoods, in which animals and inhabitants stroll, indiscriminate waste disposal, overcrowded public urinals and toilets, blocked rains and a general sense of an unsafe environment.

Like many Sub-Saharan African countries, Ghana is undergoing rapid urbanization in its metropolitan centres. The explosive growth of Accra has outpaced national and municipal governments' ability for satisfactorily addressing urban environmental issues, in the context of globalization, marketing, structural adjustment, and a resultant development roll-back. Increasing density and the rise of slums or predominantly disadvantaged areas, with inadequate infrastructure and services, have followed this growth.

A key challenge facing the city of Accra is sanitation and waste management. The Medium-Term Development Plan (MTDP), 2006–2009, of Accra's local government, namely the Accra Metropolitan Assembly (AMA), has described the current state of sanitation in Accra as very unsatisfactory and characterized by choked drains, indiscriminate waste disposal and uncollected refuse in central waste containers (AMA, 2006). In Accra, slums are situated within and around the city's current boundaries where peri-urban areas were absorbed by the city's expansion. Slum areas are characterised by high population density and lack of basic services worsening sanitation management issues. The vast majority of urban residents rely on shared sanitation facilities that can be either compound-house toilets or public toilets.

There is no doubt these sanitation and waste management challenges must be addressed if the city aspires to maintain its place as the center of the nation's development and as a capital hub for West Africa's projected development. Efforts to address these challenges are nonetheless ineffective especially considering the lack of prioritisation of sanitation issues both at local and national level. From lack of prioritisation to insufficient demand and limited supply, barriers to developing pro-poor sanitation services remain significant. Whiles strategies have often been funding related and waste management technologies, the role of Social and Behavioural Change Communication (SBCC) strategies can be employed, considering its effectiveness in many social intervention cases (McKee, Becker-Benton, & Bockh, 2014; Clark, Spencer, Shrestha, Ferguson, Oakes, & Gupta, 2017; Ngwu, 2017).

Effective communication is needed to inform, educate and drive behavioural change toward sanitation such as personal hygiene and solid waste management (Curtis,

Dreibelbis, Sidibe, Cardosi, Sara, Bonell ... & Aunger, 2020). Behaviour Change Communication (BCC) has its origins in behaviour change theories and models that have evolved over several decades, and as a result, numerous learning theories drive behaviour change interventions (McKee et al., 2014). The different theories and models serve as the foundation for developing effective tactics. Instead of depending on a single theory or model, BCC practitioners employ a combination of ideas and practical procedures based on field realities (McKee et al., 2014). Social and behaviour change communication (SBCC) also involves the use of communication to change behaviours, including service utilization, by positively influencing knowledge, attitudes and social norms (Health Communication Capacity and Communication, 2015). An angle to addressing Accra's sanitation and waste management problem can be the use of SBCC strategies.

It is crucial in sending a message across and driving social and behaviour change especially in the areas of water, sanitation and hygiene (Whitmarsh Lorenzoni & O'Neill, 2012; Ngigi & Busolo, 2018; De Buck, Van Remoortel, Hannes, Govender, Naidoo, Avau ... & Young, 2017). Also, a coordinated response to the public health epidemic requires effective communication (Haider, 2015). However, an ineffective communication results in misunderstanding, distortion, inaction, wrong action, confusion, lack of teamwork, and low morale among others (Thuy, 2019). With an appraisal of SBCC strategies and an outlook of the sanitation challenge in Accra, the big question is how the former can be employed to address the later, and what progress has been made based on current levels of adoption.

1.2 Statement of The Problem

Ghana's approach to waste management seems to regard waste as a problem that can be resolved with just funds and logistics. This explains why stakeholders in the waste sector regard the scarcity of funds and logistics as the greatest obstacles to waste management in the country. No doubt, money and equipment are essential for the day-to-day organisation of waste management activities, but the human element is also critically important for the success of municipal waste management projects. The application of SBCC strategies to the management of waste and sanitation in Accra, is a key strategy to be evaluated. This is because it is not clear whether the state and local government pays any attention to the menace of sanitation or that, measures implemented simply continue to fail.

Sanitation communication is ineffective and does not receive the needed attention due to the low budgetary allocation, logistics and stakeholder engagement among others by the government, sanitation Ministry, civil society organizations (CSOs) and non-governmental organisations (NGOs) in the sector (Mensah & Sabater, 2019; Ministry of Finance and Economy Planning, 2018; Abalo, Agyemang, Atio, Ofosu-Bosompem, Peprah & Ampomah-Sarpong, 2017).

In terms of academic overtures, studies on communication strategies in the sanitation industry have received less attention in developing countries such as Ghana (Sriram & Maheswari, 2013; Pattanayak, Blitstein, Yang, Patil, Jones, Poulos & Dickinson, 2006). This is troubling especially when sanitation challenges remain one of the main environmental challenges of the developing world (Nhapi, 2015; Kumwenda, 2019; Kamara, Galukande, Maeda, Luboga & Renzaho, 2017). There is therefore, the need to

ascertain the communication strategies, challenges and opportunities in the sanitation industry; particularly, when human activities create these challenges and their associated effect such as environmental degradation, public health, high morbidity and mortality rate, unemployment, poverty to mention a few (Wolfgang, Veronique, Bernard, Arsène & Houenou, 2013; Mara, Lane, Scott & Trouba, 2010; Mmom & Mmom, 2011; Van Minh & Hung, 2011; Owusu, 2010, Elysia & Wihadanto, 2020).

1.3 Objectives of The Study

The main objective is to ascertain the role of Social and Behavioural Change Communication (SBCC) strategies in tackling sanitation challenges in Accra Metropolitan Assembly and the specific objectives are to:

i. Identify the SBCC strategies adopted to promote personal hygiene and solid waste management in Accra Metropolitan Assembly
ii. Assess the effectiveness of these SBCC strategies in militating problems of personal hygiene and solid waste management in Accra Metropolitan Assembly.
iii. Discuss the challenges faced in using SBCC strategies to address personal hygiene and solid waste management in Accra Metropolitan Assembly.

1.4 Research Questions

i. What are the SBCC strategies adopted to promote personal hygiene and solid waste management in Accra Metropolitan Assembly
ii. How effective are these SBCC strategies in militating problems of personal hygiene and solid waste management in Accra Metropolitan Assembly?
iii. What challenges curtail the use of SBCC strategies to address personal hygiene and solid waste management in Accra Metropolitan Assembly?

1.5 Justification of The Study

The finding will serve as reference and contribute to existing literature on communication, sanitation communication, social and behavioural change among others. This is because there is an inadequate theoretical and empirical works on SBCC and sanitation promotion in the Ghanaian context as studies on the topic have predominating been carried out in advanced and formalized economies and on issues such as nutrition, maternal and neonatal health, malaria, HIV/AIDS, etc. This study addresses the research gap using data from developing economy, Ghana.

It would also help policymakers like the Ministry of Information (MoI), Ministry of Sanitation and Water Resources (MSWR), Ghana Water Company Limited (GWCL), Community Water and Sanitation Agency (CWSA), MMDAs, waste management companies etc to formulate and implement policies and programmes on environmental and sanitation communication to promote personal hygiene and solid waste management. The findings will help MMDA, communication experts and waste management companies formulate and implement strategic environmental and sanitation communication plans to guide sanitation promotion investments, training, monitoring and evaluation, and adapting new innovative digital technologies and solutions. The findings indicate a need for collaboration between individuals, community, regulators and policy-makers to take advantage and maximize sanitation promotion outcomes for the benefit of individuals and the wider society in terms of job creation, reduction in sanitation and health cost, programmes and interventions development, among others.

1.6 Scope of the Study

The study focused on communication strategies, approaches and activities adopted and could be adopted to promote personal hygiene and solid waste management. The study also focused on the government agencies, local authorities, NGOs, staff of the private waste management companies and waste management professionals. The study focused on water and solid waste because of the interlinkage between them. Focus was on solid waste because it constitutes the largest form of waste generated in Ghana and the Metropolis. Emphasis was placed on the monitoring and evaluation guidelines of SBCC to help guide the study. The guidelines suggested monitoring implementation, coverage, quality, SBCC process, and objectives against outcomes. For this study, assessment meant the comparison of outcomes against objectives, evaluation of implementation, coverage, quality, and process. The knowledge, attitude and practices of target population of sanitation promotion will be considered.

1.7 Research Methodology

The study is a mixed method study which used primary data from structured interviews and questionnaires, and secondary data from official reports. The study population are households, businesses, officials of AMA; staff of the private waste management companies, communication and waste management professionals operating in AMA, communication and waste management professionals. A sample of 230 respondents made up of 210 households and enterprises, 5 officials of AMA, 5 officials of the private waste management companies, 5 communication and 5 waste management professionals. Questionnaire were administered to households and enterprises while interviews were administered to the Assembly and company officials, and

professionals. Descriptive statistics were used to analyse the questionnaires while thematic analysis was used for the interviews.

1.8 Limitations of The Study

A limitation was the unwillingness of some respondent to participate in the study because of confidentiality and anonymity concerns. These were addressed through consent forms to assure then of confidentiality, anonymity and that the data were used for academic purposes. Another limitation was financial and time constraint to combine work, academic and research activities. This was addressed by proper time management. The study focused on the selected respondents and Accra Metropolis and therefore, not representative of the entire sanitation industry and Ghana as a whole.

1.9 Organization of The Study

The dissertation was organized into five chapters. Chapter One serves as an introduction to the rest of the study. It establishes the study's background and outlines the research issue. Moreover, it examines the relevance and contribution of the research, while also presenting the aims and questions of the study. A description of the study methodology is provided, as well as the delimitation and limitations. It concludes with an outline of the research.

Chapter Two follows the introductory chapter. It provides an overview of the existing literature on the subject of the research. It starts with a review of the fundamental concepts that serve as the foundation for the research. The themes of social and behavioural change communication, sanitation, and the challenges associated with it are all covered. This is followed by a discussion of the theories that will be used to

guide the research. A review of empirical studies on the subject is then presented, followed by a conclusion that summarises the chapter's main points and conclusions.

The methodology is explained in detail in Chapter Three. It contains explanations of the details of the study settings as well as decisions made to aid in addressing the research problem. It starts with the research design and progresses to include the research approach, population, sampling technique, data collection method, data analysis, ethical issues, and study area profile.

Results and discussion are presented in Chapter Four. It provides and examines the results of the research in the context of the existing literature, and the Chapter Five contains a summary, conclusion, and recommendation of the study, as well as suggestions for future studies.

1.10 Summary

The chapter explains the fundamental concepts and examines the background of the research, specifies its research focus, and gives the research framework as well as the aims of this research endeavour. It discusses the significance of empirical inquiry, as well as the possible contribution it may make, and concludes with a description of the outline of the research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews theories, concepts, empirical literatures and conceptual framework that relate to social and behavioural change communication (SBCC), communication and sanitation. It starts with theoretical review, followed by the concepts; empirical studies and ends with conceptual framework.

2.1 Definition of Key Concepts

This section discusses the key concepts of the study. The concepts are Social Behaviour Change Communication (SBCC), sanitation and communication.

2.1.1 Social and Behavioural Change Communication (SBCC)

Social Behaviour Change Communication (SBCC) is the systematic application of interactive, theory-based, and research-driven processes and strategies to effect change at individual, community, and social levels (IHBP, 2013). SBCC is a process of interactively communicating with individuals, institutions, communities and societies as part of an overall programme of information dissemination, motivation, problem solving and planning. SBCC uses a variety of communication channels to drive and sustain positive behaviour among individuals, communities and societies. SBCC employs a systematic process that includes formative research and behaviour analysis; communication planning, implementation and monitoring; creating an environment that supports desired outcomes; and evaluation (SBC^3, 2021).

SBCC is a framework that addresses both social change and behaviour change. Social change includes changes in social order and institutions, social behaviours and norms

while behaviour change includes changes in human behaviour. Social change and behaviour change need to be addressed for public health and sanitation communications to be successful. This is because human behaviour is at the root of most health and development programming. However, addressing individual behaviour alone is often not enough to achieve sustainable health and sanitation outcome change (USAID/GH/HIDN/CSHGP, 2014). This is supported by the assertion that SBCC) initiatives use mass media to promote behaviours that enhance long-term health and sanitation outcomes (FHI 360, 2002; Fishbein & Capella, 2006). It is more successful to use communications to alter specific behaviours than behavioural categories (Fishbein & Capella, 2006).

SBCC examines challenges from multiple sides by analyzing personal, societal, and environmental factors in order to find an effective way to achieve sustainable change. SBCC also employs strategies that influence the physical, socio-economic, and cultural environment to facilitate healthy norms and choices and remove barriers to them. SBCC uses a range of communication approaches, such as mass media, social media, digital communication, community-level activities, interpersonal communication and advocacy to influence social norms and behaviours (USAID/GH/HIDN/CSHGP, 2014; Awantang, Helland, Velu & Gurman, 2021).

Core Elements of SBCC

The three core elements of SBCC: communication, social change and behaviour change. Communication as an element is used to understand the needs, drives and preferences of the target audience in order to conceptualise tailored messages and approaches across communication channels. Social change helps achieve shifts in the

definition and perception of issues, encourage participation and changes in policies, social attitudes and behaviour. Behaviour change are interventions and efforts to bring about desired human action in an easy and feasible way while protecting and improving outcomes (USAID/GH/HIDN/CSHGP, 2014; Awantang, Helland, Velu & Gurman, 2021).

When it comes to communication methods originally designed for social change, the design, implementation, and assessment processes have tended to be less participatory (Khadka, 2000). “External” agencies and resources oversee and manage these methods, while “internal” agencies own and drive them”. Although there was some disagreement, the overall opinion was that communication should concentrate on individual and societal levels of change (Figuero, Kincaid, Rani & Lewis, 2002). In order for communication to bring about the required change, it is said that the environment should also be included in the transformation process so that the people's behaviour may be accommodated and sustained.

Characteristics of SBCC

SBCC has three characteristics. Firstly, SBCC is a strategically planned, researched and evidence-based process that aimed at changing the social conditions and individual behaviours. The SBCC process includes five steps: understanding the situation; focusing and designing strategy; creating interventions and materials; implementing and monitoring; and evaluating and replanning. The process allows programme staff, communities, and other key stakeholders to approach a problem from various angles to define key determinants (both positive and negative) of behaviours and to plan and implement a well-planned, comprehensive set of interventions that focuses on these

determinants at multiple levels to achieve a health and sanitation objectives (USAID/GH/HIDN/CSHGP, 2014).

Secondly, SBCC applies a comprehensive, socio-ecological model (SEM) to identify effective tipping points for change by examining individual knowledge, motivation, and other behaviour change communication concepts; and social, cultural, and gender norms, skills, physical and economic access, and legislation that contribute to an enabling environment. A socio-ecological model (SEM) examines layers of influence to provide insight on the causes of problems (e.g., tobacco use among youth) in order to find possibilities for change. The model helps us to look at ways in which personal and environmental factors are inter-related and how they influence each other (USAID/GH/HIDN/CSHGP, 2014).

The socio-ecological model (SEM) has two parts; levels of analysis and cross-cutting factors. Levels of analysis are the rings of the model. They represent both domains of influence as well as the people involved in each level. Cross-cutting factors in the triangle influence each of the actors and structures in the rings. The levels of analysis (represented by the rings) are the individual most affected by the issue (or self), direct influencers on the individual (represented by two rings): the interpersonal: partners, family, and peers the community: organizations, service structures, providers, as well as products available (John, 2020).

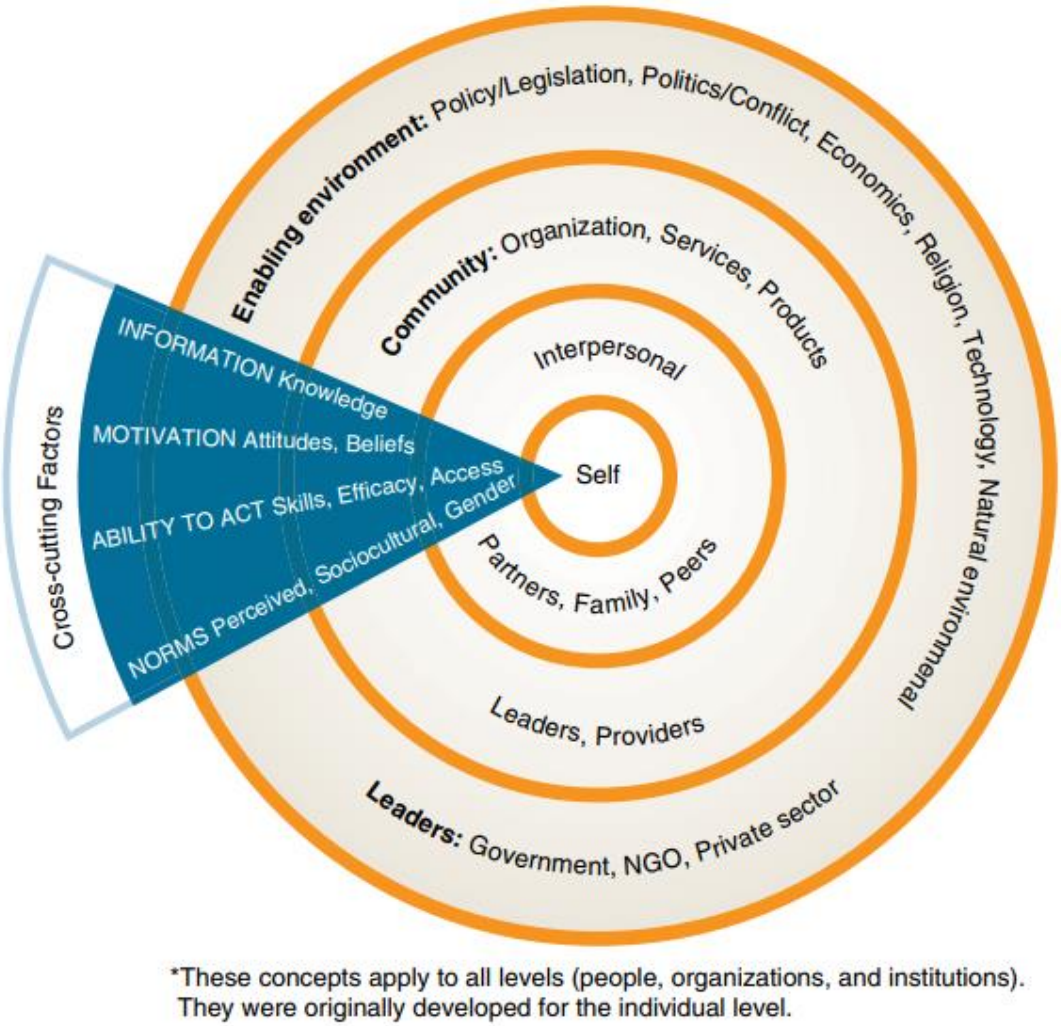

Figure 2.1: Socio-Ecological Model for Change

Source: Adapted from McKee, Manoncourt, Chin and Carnegie (2000).

Finally, SBCC operates through three key strategies: advocacy, social and community mobilization, and behaviour change communication (BCC). These are discussed below.

2.1.2 SBCC Strategies

Social and Behaviour Change Communication Strategies (SBCC) are advocacy, social mobilization, and behaviour change communication. Advocacy is used to generate active support, raise resources and secure political and social leadership commitment

that create an enabling environment for lasting desired behaviour change. It seeks to changes laws, policies, regulations (government and private) through support of government decision makers, policymakers, private sector decision makers, donors, NGO, CSOs etc (IHBP, 2013; USAID/GH/HIDN/CSHGP, 2014).

Social mobilisation is a continuous process that engages and motivates the community to raise awareness and demand for a particular development objective. Social and community mobilization is used to change behaviours and social norms, and generate wider participation, coalition-building, and local ownership among groups, associations, and networks that are influential among the specific target audience. It engages the target audience and creates an enabling environment for the desired behaviour(s) generally through commitment and participation of professional or civic associations, groups, clubs, social and business organizations or networks, religious groups or associations, community groups or associations, political groups or associations, non-governmental organizations, private sector entities, communities and individuals, crowdsourcing - petition or pledge website (e.g., Change.org) among others (IHBP, 2013; USAID/GH/HIDN/CSHGP, 2014).

SBCC uses BCC to change knowledge, attitudes, beliefs, and practices of specific target audience and change social norms. BCC reaches and engages the target audience through interpersonal communication (one-on-one); interpersonal communication (small group); and mass media (such as social media (Facebook, Instagram, YouTube), digital media (mobile ads, Google ads, SMS), broadcast media (TV, radio), mass media print (newspaper, magazine), out-of-home (billboards, bus shelter ads, bus ads, sidewalk ads, etc.) (IHBP, 2013; USAID/GH/HIDN/CSHGP, 2014).

Depending on the situation to be addressed, SBCC may employ one or more of the strategies or even a combination of all these strategies. In some situations, advocacy or social mobilization for policy change may support stronger and more immediate permanent change than campaigns that target individual behaviours (John, 2020).

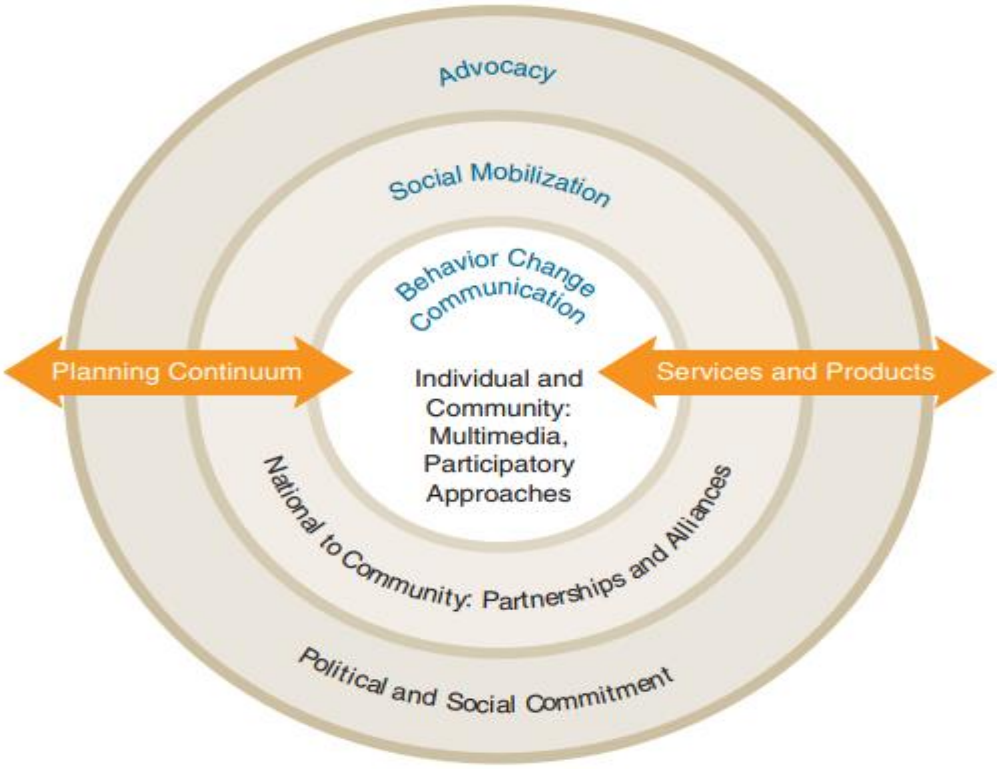

Figure 2.2: Three key strategies of SBCC

Source: Adapted from McKee (1992)

2.1.3 Communication for Social Change

As a process of public and private discourse for social change, communication for social change allows individuals to identify themselves as well as what they want and how they may achieve it. It makes use of dialogue to arrive at a common understanding of problems, make decisions, and put those decisions into action in the community. Communication helps people who will be most impacted by choices made to make

better judgments (Figuero et al, 2002). Social change encourages individuals to make good changes in their lives, according to their own definitions of change. Communication for social change, on the other hand, encourages a communication strategy that encourages effective community involvement, especially from society's most poor and excluded groups. Traditionally powerful people will no longer have influence over media, messaging, tools, or communication content as a result of this change in power. Community members who use these abilities will be empowered to control their own communication processes for the betterment of the group as a whole. It is in the process of communal development before the production of messages and products like a radio program, a video documentary or a booklet that social actors, who are also communicators, take part. Communication is a multi-step process that includes messages and the distribution of those messages. People may identify barriers and create communication structures, policies, procedures and media or other communication instruments to assist them in achieving the objectives they have themselves stated and defined via the dialogue process of communication for social change. It encourages community members to engage in discussion, debate, and negotiation. It also encourages in-depth reflection, group decision-making, and group action (Mato, 2002).

The Communication for Social Change Model focuses on the relationship between collective action and conversation as a participatory form of communication. The model tries to combine the two development communication paradigms that often conflict with one another by includes individual behavioural results as well as societal change outcomes. Studying communications for social change, it was found that a

number of change processes may lead to the formation of a community, including externally produced change, individual behaviour modification, social influence, and community discussion and collective action.

2.1.4 Sanitation

The World Health Organization (WHO) describes sanitation as a set of hygienically sanitary methods for collecting human excreta, urine and waste waters in both the communities and humans (WHO, 2010). Sanitation refers to the safe management of human excreta and greywater. It also refers to the principles and practices relating to the collection, removal, or disposal of human excreta, refuse and wastewater. It also the provision of facilities and services for the safe disposal of human excreta, maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal. It includes hardware (facilities) and software (rules, regulations, hygiene) (WHO, 2015; Peal, Evans, Ahilan... & Veses, 2020).

Though the definition of sanitation may differ, it is important to have a definite description of what constitutes sanitation as it will help in the effective management and promotion of sanitation to help safeguard the health and wellbeing of the individuals and the environment. To ensure the safeguarding of the environment and society, countries have a standard code for definition, classification and treatment of sanitation (Muzenda, 2014). An example of such policies in Ghana is National Environmental Sanitation Policy. The operational definition of sanitation in this study is the process whereby people demand, affect and sustains hygienic and healthy environment for themselves through prevention of human contact with excreta as well as the treatment and proper disposal of solid and liquid wastes.

The objectives of sanitation are to protect and promote health, and protect against environment pollution. It protects and promotes health by keeping disease carrying waste and insects away from people, toilets and homes; breaking the spread of diseases; preventing the spread of waterborne diseases; and improving the health and quality of life. It protects the environment against pollution by keeping disease carrying waste and insects away from the environment; preventing environmental pollution (air, soil and emission); and prevent contamination of water resources (surface and ground water) (Muanda, n.d).

Methods of sanitation are aimed at decreasing the transmission of disease through effective management of wastewater, excreta and other waste, proper water and food handling and reducing disease sources and causes (Lukkumanul, 2019). Sanitation is a system to increase and maintain healthy life and environment. It also aims to ensure that people have ample clean water to wash and drink (Huuhtanen & Laukkanen, 2009; Johannessen, Rosemarin, Thomalla, Swartling, Stenström & Vulturius, 2014; Cronin, Badloe, Torlesse & Nandy, 2015).

2.1.5 Classification and Types of Sanitation

Sanitation is classified and grouped into various categories to facilitate its management. It is classified according to its origin, quality, composition, and environmental impact. In terms of source, sanitation is classified as personal and public. “Personal sanitation work consists of jobs such as handling menstrual waste, cleaning household toilets, and managing household garbage (segregation). Public sanitation work involves garbage collection from households across a municipal area, dumping the city’s garbage in zonal dumping sites, sweeping of roads, cleaning drains, school, community and public

toilets, sewer lines, sewage treatment plants, septic tanks, and cleaning faecal matter from railway tracks, platforms, train toilets and platform toilets (PRIA, 2019, p.4)".

In terms of quality, sanitation is classified into improved and unimproved by the UN and stakeholders in the water, sanitation and hygiene (WASH) sector. Improved sanitation refers to the management of human faeces at the household level. World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) through the Joint Monitoring Programme (JMP) (2010) define 'improved sanitation' as a 'sewer system, septic tank or pit latrine, ventilated improved pit latrine (VIP), composting latrine or pit latrine with a slab that is not shared with other households (Massa, Kilamile, Safari... & Mubyazi, 2017)'. Unimproved sanitation refers to the opposite of improved sanitation. That is the shared and management of human faeces at the household level. In terms of composition, sanitation is classified as human excreta and greywater or human excreta, greywater and refuse. Sanitation is classified and group differently in countries across the world. Therefore, the country-specific method should be used.

The types of sanitation include basic sanitation, onsite sanitation, food sanitation, housing sanitation, environmental sanitation and ecological sanitation (Lukkumanul, 2019). Some of the types of sanitation are defined below. Basic sanitation is described as having access to facilities for the safe disposal of human waste (faeces and urine), as well as having the ability to maintain hygienic conditions, through services such as garbage collection, industrial/hazardous waste management, and wastewater treatment and disposal (CDC, 2017). Off-site sanitation is a sanitation system in which excreta (referred to as wastewater) is collected and transported away from the plot where they

are generated. An off-site sanitation system relies on a sewer technology for transport. On-site sanitation is a sanitation technology or system in which excreta (referred to as faecal sludge) is collected and stored and emptied from or treated on the plot where they are generated (WHO, 2018).

Food sanitation is the practice of following certain rules and procedures to prevent the food contamination, keeping it safe to eat. Many jurisdictions around the world have specific food sanitation laws, along with lists of regulations created by public health agencies. The practice of food sanitation is recommended at every step of the supply chain within the food industry, from workers in crop fields to waiters at restaurants. The term “food sanitation” typically refers to rules and procedures within the food industry, whether during production, packaging, transporting or serving (Djukic, Moracanin, Milijasevic, Babic, Memisi & Mandic, 2016).

Environmental sanitation is the control of all those factors in man's physical environment which exercise or may exercise a deleterious effect on his physical, mental or social well-being (Pandve 2008). It includes human excreta control, managing solid waste and wastewater, and pest and vector control (Onyango & Uwase, 2017). It aims to protect and promote human health and well-being by providing a clean environment and breaking the cycle of disease. It takes a broader look at the community and addresses different, but interconnected, aspects, including human and animal excreta management, solid waste management, vector control, domestic wastewater management and stormwater drainage (CAWST, 2015). The study focused on environmental sanitation. Environmental sanitation is the control of environmental factors that form links in disease transmission. This category includes solid waste

management, water and wastewater treatment, industrial waste treatment and noise and pollution control (Lukkumanul, 2019).

2.1.6 Sanitation Challenges in Ghana

Financial constraints on the part of individuals, communities and public agencies affect sanitation management in Ghana. this is because on the individual level, some individual or household lack sanitation systems, equipment and services due to poverty or low-income. For example, a household lacks improved sanitation facilities such as toilets, handwashing stations, sewer systems etc. On the community level, some communities lack public toilets, dustbins, dumpsites etc. This is usually the case for public agencies such as Ministries, MMDAs. This is due to low budget allocation to the agency which in turn affects agency's allocation to sanitation and waste management. For example, AMA lacks public sanitary facilities, workers, equipment etc due to low revenue and budget allocation (Moe & Rheingans, 2006; Lüthi, McConville & Kvarnström, 2010; Andersson, Dickin & Rosemarin, 2016; Kamara, Galukande, Maeda, Luboga & Renzaho, 2017).

Weak institutional capacity and lack of human resources affect sanitation management in Ghana. This is because public agencies such as AMA do not have strong systems, capacity and human resource to ensure proper sanitation in its jurisdiction as suggested in national laws and the Assembly by-law. For example, regular sanitary inspector visits and public education are not done due to these constraints (Moe & Rheingans, 2006; Lüthi, McConville & Kvarnström, 2010; Andersson, Dickin & Rosemarin, 2016; Kamara, Galukande, Maeda, Luboga & Renzaho, 2017).

Unplanned settlement plays a role in affecting sanitation and waste management in Ghana. This is because communities spring up in some parts of the country with lack or inadequate land and spatial planning. This communities lack basic infrastructure and amenities such as water, electricity, waste and sanitation management services and infrastructure such as gutters, drains, waste collection etc. This then pose a challenge to sanitation in the community. For example, Boadi and Kuitunen (2004) indicated that middle- and high-income areas have proper waste home collection services whereas low-income areas have poor or lack home collection services. This leads to indiscriminate disposal of waste in surface drains, canals and streams, creating unsanitary and unsightly environments since low-income areas form the largest population in a city or country (Moe & Rheingans, 2006; Lüthi, McConville & Kvarnström, 2010; Andersson, Dickin & Rosemarin, 2016; Kamara, Galukande, Maeda, Luboga & Renzaho, 2017).

Ineffective and inefficient sanitation and waste management services in terms of collection and disposal of waste negatively affect sanitation management. This is because this can lead to negative environmental, health and socioeconomic implications, including outbreak of diseases, air and water pollution, increase health expenditure, depletion of ozone layer, global warming, land pollution, blockage of drainage and sewerage system to mention a few (Owusu, 2010; Yoada, Chirawurah & Adongo, 2014; Alam & Ahmade, 2013).

Due to lack and poor collection and disposal practices such as irregular service delivery, poor communal attitudes, inefficient and ineffective waste management services, one third to one half of the waste generated in developing countries such as Ghana end up

on illegal dumpsites, street corners, open space and waste lands (UNCHS, 2001; Boadi & Kuitunen, 2004; and Puopiel & Owusu-Ansah, 2014). It is estimated that about 83% of the population in the Greater Accra Metropolitan Area (GAMA) dump their refuse in either authorized or unauthorized sites in their neighbourhood due to poor handling of solid waste and this creates unsanitary conditions in the community (Benneh, Songsore, Nabila, Amuzu, Tutu, Yangyuoru & McGranahan, 1993). Lack of community or public involvement in the creation and implantation of sanitation and waste management policies, strategies and programmes create lack of public ownership and commitment which in turn leads to poor sanitation.

Water is also a basic requirement for the human body and necessary for hygiene and sanitation. However, environmental degradation, improper waste management etc contaminate water resources, thereby leading to poor sanitation. This when left unattended leads to a viscous cycle as poor sanitation leads to water contamination. In many parts of the world, the main source of water contamination is due to sewage and human waste. Water shortage or scarcity, inadequate water resource, poor water distribution systems, poor or lack of water treatment systems, poor water quality etc affect proper sanitation efforts of individuals, communities and countries (Moe & Rheingans, 2006).

Negative sanitation culture, beliefs, attitudes and habits of a society or inherited by a people negative affect their behaviour and actions towards water, sanitation and hygiene. For example, the attitude of people towards open defaecation at the seaside; littering, dumping of refuse into gutters when it rains etc. In Uganda it is a taboo using

cesspits for fear of sorcerers using the excreta to inflict pains on individuals. In urban and rural India, it is a belief that women are forced to defaecate in the open due to lack of access to toilets (WHO/UNICEF/JMP, 2010). A review of what influences open defaecation and toilet ownership in rural households within the global environment by O'Connell (2014) identified several factors including knowledge, enforcement of rules or regulations, values, intention to build toilets, roles and decision-making, and beliefs and attitudes to be responsible for open defaecation in both rural and urban settings. Studies also revealed that in some ethnic culture, traditional beliefs such as a father-in-law and daughter-in-law cannot use the same toilet, has also compelled many people to go for open defaecation options (O'Connell, 2014; Adjibolosoo, 2017) Also, low sanitation awareness also affects the sanitation behaviour of the people. There is, therefore, the need for a strong social and behavioural change among the people and other stakeholders to help improve the sanitation behaviour of the people.

2.1.7 Sanitation Challenges in AMA

Waste management is a multifarious issue that has engaged the attention of successive governments, local authorities and development partners in recent years. Accordingly, its delivery is without problems and challenges. The poor attitude of citizens in complementing the efforts of local government units hampers the effective delivery of waste management (Samwine et. al. 2017; Yaoda et. al. 2014; Egyin 2011; Abaitey 2011). Financial constraints undermine health officials' efforts to invest in medical supplies and equipment (Aikins 2014, Addaney & Oppong 2015). Moreover, the inadequate provision of storage equipment including dustbins and skips compels citizens to dump waste in open spaces and unapproved sites in the Accra Metropolises

(Ontoaneyin 2014; Puopiel 2010; Boadi & Kuitunen 2003). Moreover, political interference in the operations of private waste companies has also compounded the sanitation challenges in the AMA (Aweso, 2013). Amadu (2010) also reports that inadequate logistics hamper the efforts of officials of the AMA.

In the Accra Metropolitan area, there were many communities, which were unplanned and were occupied by squatters and illegal settlements. Accra has witnessed many fast-growing, low-income communities with no infrastructure for waste disposal. Waste washed into drainage ways and was hypothesized to cause increase flooding (Sam, 2009). Eight main drains flood frequently affected over thousand people within the Accra metropolitan area. This was common in neighbourhoods such as Kaneshie, Mataheko, Sukura, Nima, Tesano, Mukose, Mpamprom Stream, Chemu Stream and Dzorwulu (Amoako & Frimpong Boamah, 2015). The relative impact was human suffering, disease epidemic, poor community health, stress, and disruption of commercial activities and normal community activities. Clearly, the existing systems could not cope with the ever-increasing volume of solid waste being generated in Ghana. Therefore, the public disposed of rubbish indiscriminately especially in watercourses and drainage channels and often through burning. Huge piles of refuse and overflowing refuse containers are seen throughout the urban centres particularly near markets and squatter settlements (Doris, 2014).

Furthermore, flooding in Accra has become an annual phenomenon (Amoako & Frimpong Boamah, 2015). Experts had been grappling with ways and means of containing the floods to save lives and property. Over the past decade beginning in 1995, floods had claimed several lives, and destroyed public infrastructure and

property. Inadequate capacities of some critical culverts, insufficient stream channel capacity and obstruction of flows by buildings across natural stream courses and deposition of garbage into the streams also gave rise to flooding. In Accra as in most urban centres in Ghana, provision of infrastructural facilities had substantially lagged behind the rapid rate of housing development. Inadequate storm water drainage was one of the most serious problems facing Accra (Amoako & Frimpong Boamah, 2015). Flooding in low-lying areas, erosion of steep slope areas, and pollution of streams by waste discharges, was identified as the major environmental problems facing the city. These problems were interrelated in that, flooding was caused by insufficient carrying capacities of the respective streams, brought about by the accumulation of silt resulting in erosion and blockages caused by solid waste deposited in the streams (Amoako & Frimpong Boamah, 2015). One of the principal flooding types in Greater Accra Metropolitan Assembly was due to the rate and dynamics of urbanization. In Accra, low-lying areas were subjected to severe perennial flooding, which was generally attributed to inadequately sized culverts, and blockage of the major drains by accumulated silt caused by years of neglect and lack of maintenance. There was also the effect of tidal variations on rivers and streams leading to flooding (Atanga, 2020).

The AMA is a heavy cosmopolitan area with different demographics occupying the various sections of the city. The residents are mostly literate owing to the exposure of majority of them to education. However, there is a valid argument to be made for high illiteracy rates. The demographics of the residents have influenced their behaviours and approach to sanitation. For instance, it can be observed that vendors hardly disinfect water storage reservoirs, and the surroundings of vendors are not kept clean, broken

pipes cause contamination of pipe water supply to homes and there is general poor personal hygiene of some vendors. The use of unsanitary defecation methods is also evident and public toilets are not entirely clean. Few households refuse are bins with tight fitting lids, while most place refuse in polythene sacs, and uncovered bins. Some heap refuse at a designated corner of the house for days, and in some cases, bins are not emptied regularly. Even worse, household waste is thrown into gutters or open spaces.

These challenges are further exasperated by the lack of awareness and education on sanitation, and perhaps the absence of much more effective options. As a result, even those who are more aware end up engaging in unsafe sanitation practices. The role of the media leaves much to be desired as media platforms are more political instead of focusing on environmental issues.

2.2 Theoretical Review

This study is underpinned by Diffusion of Innovation (DOI) theory. DOI seeks to explain how, why, and at what rate ideas and technologies are taken up in a population. It acknowledges that behaviour change arises through contact with populations' internal and external forces (Rogers, 2003). Diffusion refers to a macro-level process by which innovations are introduced into a society through diverse communication channels over a period of time. Rogers (2003) defines diffusion as the process by which an innovation is communicated through specific channels over time among members of a social system. The theory believes that the media and interpersonal contacts have a way of providing information which could influence opinion and judgment.

The four stages of innovation, according to Rogers, include invention, diffusion or communication; through the social system, time and consequences. Information flows

through a process or network like the opinion leaders whose roles may determine the extent that the innovation will be adopted. The rate of diffusion and the degree of saturation are degrees of adoption of change in a particular community. Rishante (2011) notes that diffusion outlines certain factors which have been consistently found useful by researchers in trying to understand the diffusion process as it relates to development efforts. These factors are: (i) the characteristics of the innovation and the degree of novelty associated with it; (ii) the rate of diffusion is influenced by individual differences among potential adopters; (iii) the features of the social system; and (iv) the existing diffusion channels or networks in the particular community.

The diffusion of new ideas and ideologies for advocacy and mass mobilization; are usually targeted at non-specific, anonymous and heterogeneous audiences as in the mass media (Rishante, 2011). The theory acknowledges the mandatory role of opinion leaders, the influence of the mass media and interpersonal reinforcement of mass media messages in the individual's adoption of the decision-making process. Eze (2010) explains that the more complex the health behaviour being advocated, the longer it takes to be accepted; and the more inconsistent a practice is to current practices, beliefs and norms; the longer it takes for the people to accept.

Diffusion of innovation theory provides a useful framework for studying the adoption process. Diffusion studies have found that the way targeted adopters perceive the attributes of an innovation is critical and that these perceptions account for 49–87% of the variance in whether or not they adopt (Rogers, 1995). Abdullahi, Gbaje and Mohammed (2015) noted that perceived attributes of innovation include: (i) Relative advantage (the degree to which an innovation is perceived as better than the idea it

supersedes). The higher the perceived position, the more likely the change will be adopted. (ii) Compatibility (the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters. If the innovation is perceived as an extreme change, then it will not be compatible with past experiences and is less likely to be adopted. (iii) Complexity (the degree to which an innovation is perceived as relatively difficult to understand and use). Changes that are perceived as complex are less likely to be adopted. (iv) Observability (the degree to which the results of an innovation are visible to others). If the observed effects are perceived to be small or non-existent, then the likelihood of adoption is reduced. (v) Trialability (the degree to which an innovation may be experimented with on a limited basis). This may include trying out parts of a plan or having the opportunity to watch others using a new program. Trialability is positively related to the likelihood of adoption.

The relevance of the theory to the study refers to how sanitation behaviour changes messages seek to communicate information that will promote sanitation. The change may be immediate or long-term behaviour change. Nwosu (2008) asserts that intensive, well-organised, and implemented advocacy campaigns are needed for the expected results to be achieved. The flow of advocacy impacts can range from information or awareness creation, knowledge change, opinion change, attitudinal change, to behaviour, actions or practice adoption or amendment.

2.3 Empirical Studies

Puri (2017) argued that there can be no denying the importance of the information, education and communication (IEC) in transforming people's attitudes. The public must

understand the waste basics, the role of different stakeholders and the awareness of waste strategies in composting and recycling, so that they can feel motivated and encouraged to make their quality change. It brings empowerment to education and knowledge. The right approach for communication is the key. This can be achieved by TV advertisements, radios, waste books, portals, seminars for training and awareness, art and music contests.

In support of Puri, Fitzpatrick-Lewis, Yost, Ciliska and Krishnaratne (2010) indicate that a multi-media approach is more successful than a single media approach. Likewise, written content providing a variety of forms of details (i.e., text and diagrams) is more successful than just a single style like all text. They also suggest that personal risk perceptions, previous personal experience with risks, information sources and trust sources have an impact on factors influencing reaction to risk communications. It is not best to deliver a single message method. The most effective means of reaching the public are risk communication strategies incorporating the need of the target audience(s) with a multi-faceted delivery method.

In a study of the role of public communication in decision making for waste management infrastructure, Kirkman and Voulvoulis (2017) shows that public communication plays an essential part in waste management infrastructure delivery. Early in the decision-making process, public views must be taken into account, and the public aware and involved. People are urgently needed not merely to consider the need for infrastructure, the nature of investment, need of infrastructure, costs and benefits and the technical implications and also to understand and understand them.

Zanoo (2017) in a study on mass media and environmental consciousness of urban dwellers in the Cape Coast Metropolis, asserted that numerous strategies of media companies could lead to the successful distribution of knowledge on the environment and sanitation. In certain cases, FM and TV stations used local dialects, mixed programs with tit bits, phone-in segment, social media and short codes became helpful ways of learning and getting input from listeners. This is because various divisions of the population in the metropolis vary in the way educational knowledge is obtained from the mass media. Despite mass media initiatives on environmental sanitation, much needs to be done, because the environmental awareness was still low. Up until environmental education being taken seriously by the Assembly, its efforts will not produce the anticipated effects.

Anderson (2019) conducted a study on how communication tools and strategies are utilised to influence attitudes toward improved sanitation practices and behaviour in the La community. The study used questionnaires and unstructured interviews. The study revealed that there is cooperation amongst relevant stakeholders in utilising communication tools such as social media, television, radio, and vans with sirens as strategic methods in addressing the sanitation crisis in the area. It indicated that the strategies have greatly improved on the waste management situation in the La community as they result in increase in awareness creation, lobbying for effective policies and legislation against poor sanitation conditions, as well as, assisting in capacity building for addressing sanitation crisis in the area. The study identified financial constraints, expertise personnel constraints, negative sanitation practices and

behaviour as some challenges confronting the various institutions and stakeholders in their cooperation to address the sanitation challenges in the La community of LaDMA.

Agba (2019) conducted a study on application of Social and Behaviour Change Communication (SBCC) education Strategies in the Management of Open Defecation in Cross River State using mixed methods, questionnaire, focus group discussion, simple percentage statistical tool and descriptive rhetorical analytical technique. The result exposed the constraints to the effective utilization of SBCC interventions in managing open defecation to include lack of its inclusion in government policies and inadequate funding of SBCC interventions.

Goodwin (2016) utilised a mixed method approach to produce evidence for the effects of previous participation and sense of community (SOC) on 69 change agents engaged in the High Five program. The study used baseline survey, Sense of Community Index (SCI) survey, Endline Evaluation of the High Five project, interview, ANOVA, descriptive statistics, bivariate and multivariate regression analyses. A simple one-way between groups ANOVA test revealed that the SCI scores were statistically different across the three project locations. The stepwise multiple regression analysis showed a small effect of previous participation by change agents on their subsequent participation in High Five community outreach activities, however SOC had no significant effect. A non-statistical comparison of SCI scores with changes in individual behaviour and health impact revealed that project locations where change agents with higher SCI scores were active also had higher rates of behaviour change and health impact. From the nine interviews of change agents, all responded that previous participation in similar programs was a factor in their High Five participation. 30 per cent of responses also

identified the perceived ability to change the community as a factor. The quantitative and qualitative results were triangulated to produce a richer understanding of the role of change agents. This research will help governments, non-profits and businesses to better understand how change agents influence social and behaviour change programs in communities and improve interventions aiming to address a range of public policy issues

William, Ilango and Harisha (2020) assessed the effectiveness of the communication strategies used in Swachh Bharat Mission in the state of Tamil Nadu, using a descriptive method of research design. The study identifies that interpersonal communication was more effective than any other communication techniques in bringing about behavioural change. This study found that the television is the primary source of entertainment and it also disseminates information on important issues. The study revealed that the respondents were not much interested in the 'Clean India' project of the government as they were not communicated to properly about the importance and need for it.

Adamu and Ali (2020) examined the application of health communication in urban health extension sanitation programme in Bahir Dar City, Ethiopia using mixed research methods, in-depth individual interviews, document analysis, observation and questionnaire. The findings show that health communication is not used as the basic ingredient of the sanitation programme. The finding reveals that the practice of health communication is dominated by top down or one way communication approach. As a result, the health communication practice is characterised by absence of active participation of the local community. The communication of the office is also characterised by lack of health education, infrequent sanitation communication

activities and poor practice of health communication. The local community perceives health communication as information dissemination about urban sanitation activities, not as a dialogical process. The study recommends mainstreaming health communication and active participation of the community in all the phases of sanitation programmes so that the city can become clean and comfortable for the urban dwellers and visitors.

Sriram and Maheswari (2013) analyzed the awareness level on sanitation and the effectiveness of the prevailing Information, Education and Communication (IEC) approach among rural Indians. Focus Group Discussion and Survey methods were used to analyze the awareness level and effectiveness of IEC among the rural people. The results show that awareness on sanitation is low. It also shows that possession of toilets in the households is minimum and usage of toilet is still lower than the possession. The finding indicates that the use of IEC by agencies to create sanitation/hygiene awareness has not been effective.

Mnisi (2011) assessed the water and sanitation problems in New Forest, South Africa using case study, questionnaires, literature review, site observation and telephone interview. The study found that there was water and sanitation problem. It also found that the community's access to water and sanitation is severely limited due to their socio-economic status, mostly poverty. The villager's access to water and sanitation is caused by lack of employment. Lack of participation is another socio-economic factor that deprives people from receiving water and sanitation services, people in this village are poorly informed on almost aspect of water and sanitation problems. Water and sanitation coverage is poor in this village due to infrastructure failure. The literature

search showed that there are also other factors contributing to water and sanitation problems, which includes lack of capital and funds by the government to provide access to water and sanitation. Water and sanitation coverage is poor in rural areas because of the scattered nature of settlements. The increasing population was also causing serious depletion in water's availability and this was also causing an impact on the environment and economy. Water availability is also limited by low or irregular rainfalls and again there is too much water available on the world surface, but most of this water is saltwater and only a small amount of freshwater is accessible. People use indigenous knowledge to survive water and sanitation problem. People in New Forest dig traditional hand dug wells to survive water problems and some access water from the community river. The community borehole also supply water to the villagers, but when water is not available people hire cars to collect water for them in areas where water is available. People in New Forest use pit latrine for sanitation. Pit latrines are considered as part of improved sanitation options. These facilities are cheap, easy to operate and no maintenance is required. Majority of the villagers do not own flushing toilets because of water shortage and some villagers do not have toilets at all; they share toilets with their neighbours. In conclusion the assessment of water and sanitation problem led to recommendations of mitigating these problems in the village of New Forest.

Saaka, Aryee, Ali and Masahudu (2017) conducted a study on the effect of social behaviour change communication (SBCC) package on knowledge of obstetric and new-born danger signs among mothers with children under 24 months of age. The study used a non-randomized controlled community-based intervention design with pre- and post-intervention household surveys in the intervention and comparison communities

of the East Mamprusi District in Ghana. The study population were selected using a two-stage cluster sampling procedure. The findings show that there was a significant contribution of social and behavioural change communication as an intervention to maternal knowledge in obstetric danger signs after adjusting for confounding factors such as antenatal and post-natal care attendance. Therefore, provision of information, education and communication targeting women on danger signs of pregnancy and childbirth and associated factors would be an important step towards attaining universal health coverage.

The empirical literature indicates that communication is essential in sanitation promotion, personal hygiene and solid waste management at the individual, community and national levels. However, little attention is studies have been done in Ghana and on the communication strategies. The current study seeks to fill the research gap.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the methods and techniques used to conduct the research. It describes the research design, population of study, sampling technique and sample size, data collection method, ethical considerations and data analysis.

3.1 Research Design

A research design is the procedures for collecting, analyzing, interpreting and reporting data in research studies (Creswell & Plano Clark, 2017). A descriptive survey design with a mixed method approach was used for the study to help the research describe and conduct a detailed analysis of the ascertain the communication strategies, challenges and opportunities in the sanitation industry in Accra Metropolitan Assembly without influencing the outcome. A descriptive survey design was used to describe, record, analyze and report current circumstances without having any impact on the study and its results (Oso & Onen, 2009; Mugenda & Mugenda, 2003).

3.2 Research Approach

Quantitative approach was used due to the numeric nature of the data to be collected and the use of statistical techniques for the analysis. Qualitative approach was used to assess and gather information on the opinion, knowledge and views of the respondents.

3.3 Population

The population of the study refers to all the elements that can take part in the study. The study population consists of households, businesses, officials of AMA, staff of the

private waste management companies, communication and waste management professionals.

The AMA is made up of ten (10) sub-metropolitan areas created by legislative instrument (L.I.) 1722(AMA, 2012). These sub-metropolitan areas are Ashiedu–Keteke, Osu-Klottey, Ayawaso East, Ayawaso Central, Ayawaso West, Ablekuma South, Ablekuma Central, Ablekuma North, Okai-Koi South, and Okai-Koi North. Among the functions, these sub-metros implement the policies of the Assembly and mobilize revenue. With regard to location and position, the area lies on longitude 050 35' North and latitude 00 06' West. AMA is bounded to the east by Ledzokuku-Krowor Municipal Assembly and to the north-east by the Ga-East Municipal Assembly. The north of AMA is bounded largely by the GaWest Municipal Assembly. The West and the south-western zone are bounded by the Ga–South Municipal Assembly, while the Gulf of Guinea borders the study area to the south.

The Odaw River is the main river that flows through the area, and main source of water supply is a refined one from river Densu. It lies within the coastal Savannah zone with low annual rainfall averaging 750 to 810 mm distributed over less than 80 days. The rainfall pattern of the area is bimodal with the major season falling between the months of March and June, and a minor rainy season around October. Mean temperatures from 240 C in August to 270 C in March. The area is the most urbanized area in Ghana. This is a result of the urban –biased development strategies adopted by policy makers since the colonial era. The concentration of industries, commerce, business activities, education political and administrative functions attract migrants from within and outside the country and this has made the area more urbanized. As a metropolitan and

coastal city, the predominant primary economic activity is fishing. Accra metropolitan area was chosen as the study area since it is believed to be the area that generate 2500tonnes per day, which is the highest amount of solid waste generated in Ghana (Waste Management Department, Accra Metropolitan Assembly, 2013).

The Accra Metropolitan Area has an estimated population of 4.5 million residents. The 2010 Population and Housing Census indicate that AMA has a total population of 1,665,086 with 51.9% being female while 48.1% were male (GSS, 2012). The city generates between 2,000 and 2,500 tonnes of municipal solid waste (MSW) a day. The city has been demarcated into 11 waste collection zones which are allocated to private sector service providers on a franchise basis. The waste contractors haul the collected garbage directly to the final disposal sites due to the lack of transfer stations within the Accra metropolis.

3.4 Sampling Technique and Sample Size

A selected group of some elements from the totality of the population is known as the sample. A sample of 230 respondents from the population was used for the study. They are made up of 210 households and enterprises, 5 officials of AMA, 5 officials of the private waste management companies, 5 communication and 5 waste management professionals. Sampling is a procedure through which a relatively small number of persons or measurements of items or events are picked and analysed to find information about the whole population. Random sampling was used to select the households and enterprises because all household and businesses generate waste and are exposed to sanitation communication one way or another. Therefore, they are considered equally to use for the study. Purposive sampling was used for Assembly and company officials,

and professionals because of their role, knowledge and experience in formulating and disseminating sanitation communications, waste management and communication.

3.5 Data Collection Method

Primary and secondary data sources were used for the study. The primary data were obtained from the structured interviews and questionnaires administered to the respondents. The interviews were administered to the Assembly and company officials, and professionals whiles the questionnaire was administered to households and enterprises. The questionnaire has two (2) sections. The first section gathered demographic data while the second section gathered data on social and behavioural change communication (SBCC) and sanitation. The demographic data was on type, gender, age, marital status, employment, education, household and employee size, years of stay and operations was collected using multiple choice questions (MCQs). MCQs, dichotomous questions, Likert scale statements and open-ended questions were used to collect data for the second section. The dichotomous questions had the options yes and no while the Likert scale ranged from strongly disagree (1) to strongly agree (5). The interview guide was made up of ten (10) open-ended questions. The study instruments were in English. The secondary data were obtained from journals, official reports, articles, websites, communication publications (print and audio-visuals) on sanitation and waste management.

The questionnaire and interviews were carried out in person to offer the researcher with the opportunity to debrief the respondents on the study and sought their express consent. The brief also ensured that the respondents understood the study to provide accurate, valid and reliable responses. The interviews were recorded and transcribed. The

respondents were given two-weeks to fill the questionnaire after which follow-ups were made. A high response rate was achieved due to the follow-up. Literate respondents answered the questionnaire themselves while less educated respondents were asked the questions in their local dialect (Twi and Ga) to which they gave their responses.

3.6 Ethical Issues

Ethics refers to rules or principles that define what constitutes acceptable and unacceptable behaviour for people and organisations (Ambrose & Cross, 2019). Ethical clearance and introductory letters were obtained from the Institute and sent to the firms relevant to the study. The express permission of the respondents was obtained prior to their participation in the study. The respondents were briefed on the purpose of the study and were assured of anonymity, confidentiality and use of data for academic purposes only. The information gathered in the study was treated anonymous and confidential. To ensure the validity and reliability of the study instruments, the instruments were reviewed by the supervisor and experts in research and the subject matter. A pilot survey was also carried out on 50 respondents who did not participate in the actual study to ensure validity, reliability, question sensitivity, comprehensibility, and language appropriateness of the study instruments. The researcher did not receive funding from the respondents, any person or institution. The researcher has no competing interests. The works of other authors used for the study were duly acknowledged using APA referencing system as prescribed by the Institute.

3.7 Data Analysis

Thematic analysis and descriptive statistics such as frequencies, percentages mean, and standard deviation were used for the data analysis and presented using tables and

narrations. The thematic analysis is to the interviews as descriptive statistics are to the questionnaires.

3.8 Profile of Study Area

Accra Metropolitan Assembly (AMA) is one of the Two Hundred and Fifty-Four (254) Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana and among the Twenty-six (26) MMDAs in the Greater Accra Region. It was established in 1898 but has gone through several changes in terms of name, size and number of Sub-Metros. When Ghana returned to constitutional rule in 1993, it derived its legal basis from Local Government Act, 1993, (Act 462) which currently has been amended as the Local Governance Act, 2016 (ACT 936), and under Legislative Instrument (L.I) 2034. According to the 2010 Population and Housing Census, the total population of the Metropolis was 1,665,086 with females constituting 51.9% while males formed 48.1%. Using the Greater Accra Population growth rate of 3.1%, the 2018 population of Accra is estimated at 2,036,889. Accra has a daily influx of more than 2million people who commute to the City for various socio-economic activities. It is therefore estimated that Accra has a daily population of about 4million comprise of both residents and visitors. The vision of AMA is "A Smart, Sustainable, Resilient City" while its mission is "To improve the Quality of Life of People Living within the City of Accra by Providing Leadership and Opportunities for Social and Economic Development Whilst Maintaining a Clean, Attractive and Secured Environment (AMA, 2021)."

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter is a presentation and discussion of the findings of the study. The chapter has four (4) sections. The first section highlights the respondents' profile. The second to fourth section focuses on the study objectives.

4.1 Respondents' Profile

This section presents background of the participants. It shows the type, gender, age, marital status, employment, education, household and employee size, years of stay and operations.

Table 4.1: Profile of Respondents

Characteristics	Description	Frequency	Percentage (%)
Type of participant	Household	137	65
	Business	74	35
Gender	Male	92	44
	Female	118	56
Age	Below 20	82	39
	21 – 30	59	28
	31 – 40	48	23
	41+	21	10
Marital Status	Single	107	51
	Married	92	44
	Widowed	11	5

Employment	Formal	46	22
	Informal	97	46
	Unemployed	67	32
Education	Basic	29	14
	Secondary	50	24
	Tertiary	122	58
	Others	8	4
Household size	Below 4	87	41
	5 – 7	74	35
	8 – 10	34	16
	11+	15	7
Employee size	Below 4	65	31
	5 – 7	103	49
	8 – 10	29	14
	11+	13	6
Years of stay	Below 5	46	22
	6 – 10	71	34
	11 – 15	61	29
	16+	32	15
Years of operations	Below 5	55	26
	6 – 10	74	35
	11 – 15	58	28
	16+	23	11

Source: Field study (2021)

According to Table 4.1, 65% of participants were from households, while 35% were from companies. It also reveals that females constituted 56% of those questioned, while males constituted 44%. The researcher's objective to get an equal number of responses from each gender, as well as the respondents' availability and desire to participate in the study, all had an influence on the disparity between male and female respondents. This study revealed that women are most often the ones who handle issues pertaining to sanitation and waste in the area.

As shown in Table 4.1, 39% of participants are under the age of 20; 28% are between the ages of 21 and 30; 23% are between the ages of 31 and 40; and 10% are above the age of 40. It also reveals that single constituted 51% of those questioned; 44% are married while widowed constituted 5%. Table 4.1 shown that 46% of participants are informal workers; 32% are unemployed while 22% are formally employed.

According to the data in the table, 58% have received tertiary education, 24% have received secondary education, 14% have received basic education, and 4% have received other qualifications. 41% of the 137 homes questioned had 4 or less people; 35% had between 5 and 7 members; 16% had between 8 to 10 members; and 7% had 11 or more members. According to the survey's findings, of the 74 firms questioned, 49% had between 5 and 7 workers; 31% had 4 or less employees; 14% had between 8 and 10 employees; and 6% had 11 or more employees.

According to the data in the table, 34% of the households surveyed have lived in the community for between 6 and 10 years; 29% have lived in the community for between 11 and 15 years; 22% have lived in the community for 5 or less years; and 15% have lived in the community for 16 or more years. Approximately 35% of the have been in

operation in the community for between 6 and 10 years; 28% have been in operation for between 11 and 15 years; 26% have been in operation for 5 or less years; and 11% have been in operation for 16 or more years. Thus, 56% of families and 61% of enterprises have been in the town for at least six years. This shows that they have been living and working in their town long enough to have seen the sanitation promotion in the area and are thus competent to participate in the study.

4.2 SBCC Strategies to Promote Personal Hygiene and Solid Waste Management

The government of Ghana with its development partners and the AMA undertook the GAMA project with the objective to improve WASH services in the area by provided household and institutional toilets, expansion and rehabilitation of the water supply network and HH connections, improvement and expansion of sewerage collection/treatment, expanded and rehabilitated storm drainage infrastructures, improvements in operational efficiency, and support for project management including behavioral change and communication (BCC), monitoring and evaluation, and capacity building linked to the project. The SBCC strategies adopted are advocacy, social mobilization, and behaviour change communication (AMA, 2021).

This section discussed some SBCC strategies and interventions used by the AMA with GoG and DPs to tackle sanitation challenges and promote personal hygiene and solid waste management in its catchment area. This discussion is grouped into individual, community, institutional and national levels.

4.2.1 Individual Level

Public education at markets, schools, and churches, among other places, was utilised to raise awareness about sanitation concerns and to promote good personal hygiene and

solid waste management (SWM) in the catchment area. The campaigns made use of print and audio-visual media to educate the public on the need of utilising improved water sources, washing hands after using the toilet under running water, and ceasing open defecation (OD) along beaches, among other things. Individual and group engagement and education were also encouraged via the use of community durbars, which were facilitated by environmental officers. For example, the Sanitation Challenge and the GAMA initiative raised awareness and engagement in the community in order to educate them on good sanitation.

4.2.2 Community Level

In the area before various initiatives like as the GAMA project and the “One family, One bin” campaign, OD and access to better sanitation facilities and services such as toilets, waste disposal, and other services were inadequate. The GAMA project's hygiene and sanitation behaviour change campaign (BCC) targeted schools and homes as part of its outreach efforts. It assisted in educating students and their families on proper hygiene and sanitation practises, such as the usage of better sanitation facilities, handwashing techniques, and so on (Akotuah, 2019). During the COVID-19 pandemic, the project is doing out hygiene awareness activities and supplying handwashing stations to the public (The World Bank, 2021).

A major goal of the project was to finance critical elements that would help to improve wastewater collection, treatment, and disposal by building new facilities and rehabilitating existing ones as needed. The project was to finance critical elements that would help to improve wastewater collection, treatment, and disposal by building new facilities and rehabilitating existing ones as needed. The goal of this component was to

improve operational capabilities in the industry while also creating an environment that was conducive to private sector participation.

Community engagement in selecting eligible beneficiary communities as well as community ownership of the projects were the goals of the decentralisation strategy in order to guarantee that the projects would be protected in the long run. Rural water supply was planned and implemented with input from traditional authorities, opinion leaders, religious leaders, and women who were all involved and consulted throughout the process. They are also involved and encouraged to teach and influence their community on the need of using better water sources as well as the protection and preservation of natural resources, including water.

A representative from AMA said that

> "*Individuals and communities are engaged in the conception, development, and implementation of interventions, and the assembly makes use of audio-visual media to educate the public.*"

Some beneficiaries of the water supply system observed that,

> "*The community was included in the planning process, according to one source, although another said that the system was just installed without input, resulting in the water system being located far away from the neighbourhood."*

4.2.3 Institutional Level

The GAMA project provides technical support to the MSWR, MLRD, and MMDAs for the purposes of monitoring and ensuring compliance with sanitation services and operations, as well as for the purposes of ensuring their long-term sustainability. This included assistance with the construction of social accountability procedures that would

ensure that the services were properly administered and maintained, among other things. It was decided to organise capacity-building programmes for the project's many stakeholders.

4.2.4 National Level

To reform the sanitation and water sector, the government established the Ministry of Sanitation and Water Resources (MSWR), which is comprised of subsectors agencies such as the Water Resources Commission (WRC), Ghana Water Company Limited (GWCL), and Community Water and Sanitation Agency (CWSA) for the water sub-sector, and Schools of Hygiene (Accra, Ho and Tamale) for the sanitation sub-sector. CWSA was established to deal with rural water supply and development, whilst GWCL deals with urban water supply and development. The Government of Ghana, through the CWSA, facilitated WASH interventions to enhance access to water by establishing water supply infrastructure in rural and small communities, such as hand boreholes, mechanised boreholes, hand pumps, and standing pipes, among other things.

A political commitment and an enabling policy environment have been established by the Government of Ghana through the development and implementation of water, sanitation, and environmental laws; policies; programmes; strategies; and guidelines such as the National Water Policy, Rural Water Sector Guidelines, and others, to manage water sources and improve access to safe drinking water throughout the country. Water supply infrastructure development across the country, eradication of water-related diseases such as guinea worm infestation and cholera, the establishment of the WRC to ensure that all water resources are properly managed and utilised, and the abolishment of community contributions towards water supply infrastructure

development in 2009 to relieve communities of the burden and ensure the timely implementation of intervened projects were all examples of the government's commitment. The government used print and audio-visual media to educate the public on the importance of using improved water sources, and civil society organisations (CSOs) such as CONIWAS were involved in a variety of water-related programmes, policy formulation activities, and engagements, all of which were facilitated by the Government and development partners.

4.3 Effectiveness of SBCC Strategies in Militating Personal Hygiene and Solid Waste Management Problems

The GAMA project has received high project efficiency ratings as a result of the fact that it has significantly surpassed all of the objectives established. Additionally, the initiative has been very beneficial in the battle against the COVID-19 epidemic. The project called for the construction of 19,100 toilets, which was the total number of toilets that would be built. As of February 2020, the aim has been surpassed, with a total of more than 27,000 toilets completed, servicing more than 235,000 people.

As of February 2020, the project has built 27,000 toilets that served 235,000 people, exceeding the aim of 19,100 toilets set for the project. In a mid-term assessment, the project had surpassed its goal of supplying 50 institutional sanitation facilities by 150, resulting in an increase from 50 to 200 total sanitation facilities. As of February 2020, 403 toilet blocks have been installed in 260 schools as part of the project. Furthermore, the hygiene, sanitation, and clean water BCCs focused at all project recipients and other residents residing in the low-income urban communities (LIUCs) have reached more than 298,000 individuals, exceeding the target population of 250,000 people set by the

project. Employment opportunities for construction workers, decrease in flood losses owing to drainage improvements, and an improvement in the environment due to reduced open defecation and open dumping of human excreta are some of the other benefits that have accrued as a result of this project.

According to the results of the overall assessments, relevance is rated extremely high, efficacy is rated extremely high, and efficiency is rated extremely high as well. Due to the fact that two further ongoing sewerage expansion contracts must be finished before the project can be declared completely effective in terms of sanitation, the overall result of the project is rated acceptable in terms of sanitation. When it comes to water and sanitation interventions in Ghana, women accounted for 52% of those who received assistance. The task for water collection falls disproportionately on the shoulders of women in LIUCs. Women spend less time collecting water when they have access to clean water inside the boundaries of their own homes, enabling them to dedicate their leisure time to income-generating activities. Females are disproportionately impacted by the sickness burden resulting from water-borne illnesses because they must give up productive hours to care for sick family members, which includes time spent in hospitals that might have been spent in income-generating activities instead.

A number of institutional strengthening initiatives were carried out as part of the project. An important one of these was the creation of the ESICApps (Expanded Sanitary Inspections, Compliance Application), a mobile application for data collecting for Environmental Health and Sanitation operations, which was one of the most significant accomplishments. As part of the project, a handbook has been prepared to give technical advice and guidelines for the design, operation, and maintenance of bio-

digesters, which are utilised as residential toilets. This technology is used in more than 27,000 of the residential toilets that were built as part of the project. The booklet gives step-by-step instructions on everything from site selection to building to operation and maintenance. In addition to other development partners who are supporting this technology, the guide has been accepted and is being utilised by them as well.

The number of micro-enterprises that provide sanitation services was one of the project's intermediate outcomes indicators, which was tracked over time. For the building of the biodigester toilets, the project selected 12 micro-enterprises that were involved in the process. The personnel of the micro-enterprises received training to ensure that they are able to provide services that are satisfactory and meet the requirements that have been established. The participation of the micro-enterprises resulted in the creation of employment for the craftsmen who worked on the building of toilets, resulting in an increase in their family's income.

The project's contribution to the management of the COVID-19 epidemic has had a significant unforeseen consequence. Hygiene and handwashing promotion were carried out as part of the project, and handwashing booths were installed, which are crucial infrastructure for mitigating the spread of COVID 19. As a result of the enhanced access to water supply given inside houses/yards in the chosen LIUCs, beneficiaries were less likely to have to leave their homes in order to collect water for drinking, cooking, and other domestic activities, allowing for some social separation. Adequate water consumption was made possible by the availability of water inside the home and surrounding yards.

In contrast, as of April 2021, the “One family, One bin” initiative was considered to be unsatisfactory. As a result, of the estimated 77,960 households to be registered and handed a bin from January 2021 to December 2021, only 15,204 households have been registered, accounting for 25% of the total, and a total of 8562 bins have been distributed, accounting for 11% of the total, assuming that one bin was distributed per household. The performance of service providers throughout the time was also bad, as shown by the fact that, out of five (5) service providers, the maximum score was 52.14% and the lowest score was 35.12%, indicating unsatisfactory performance. In the performance review conducted from July to September 2018, the results revealed that none of the service providers achieved average performance (a performance between 65 and 75% on a scale of 1 to 10). (Ama, 2021b). Breakdown of their scores is as follows:

Table 4.2: Performance of Waste Management Companies

Sub-Metro	Waste Management Companies	%
Ablekuma South	Metropolitan & Allied Waste	41.1
	Libertt Waste	52.14
Ashiedu Keteke	Meskworld Limited	46.44
	Tropical Waste	35.12
Okaikoi South	J. Stanley Owusu & Co. Ltd	50.4

Source: AMA (2021)

4.4 Challenges Faced in Using SBCC Strategies to Address Personal Hygiene and Solid Waste Management

Upon reviewing the material and speaking with key officials from the different implementing agencies and beneficiaries, it was concluded that there are a number of obstacles that must be addressed in order for the SBCC Strategies to be successful in addressing sanitation concerns.

When it comes to sanitation interventions, it is particularly interesting because, while test results generally have a significant impact on disease risk, significant behavioural changes are also required in order for them to be effective, and these are typically found within households and frequently at the individual level. A change in mindset is required in order for an intervention to be successful, and this is the case with this intervention. Because of their cultural norms and behaviour, low-income earners have a traditional nature that makes it difficult for them to adopt new technology as a result of their traditional nature. It is tough to persuade individuals to alter their ways. Their actions and demeanour are causing alarm. It does not matter how effective the attempts to convince them to possess a toilet facility are; some individuals would prefer conduct open defecation than own a toilet facility.

An AMA sanitation official explained that:

> "*We are confronted with the issue of changing the attitude of the people. Some portions of the population defecate in the open, along the beaches, or along the coastline, which is considered unacceptable. So even if you supply them with a better toilet facility, they will still find an excuse based on cost or convenience to continue to use them. This represents a significant obstacle for the project."*

The likelihood of incorrect and ineffective content being carried over into a new program was mentioned as another challenge by the respondents. In addition, there is the issue of insufficient time and money being allotted because the decision to adapt was motivated by the desire to spend as little money as possible on the project.

According to the respondents, certain situations arise in which communication becomes overly centered on the materials as opposed to behaviour. This indicates that most of the focus, time, and resources are devoted to the development of materials (such as leaflets). Nonetheless, it is critical to recognize that, while visually appealing objects may aid in attracting someone's attention, they do not in and of themselves persuade people to change their behavior. Whatever the communication or facilitation methods are employed, the communicator or facilitator must take center stage. The delivery of the communication tool, as well as the participation of the audience, are both extremely important considerations.

The documentary examination also showed SBCC methods, as well as the fact that program administrators had difficulty reaching out to marginalized groups in the districts they served. When it comes to sanitation awareness, it is crucial to make sure that even the most vulnerable communities are reached. People might be marginalized for a variety of reasons, including their career, ethnicity, race, religion, geographical location, and financial resources. In addition to being less likely to get broad knowledge, marginalized individuals are also less likely to participate in decision-making that affects their well-being. When it comes to sanitation awareness campaigns, getting messages out to the public as quickly as possible is frequently the top goal, which may result in the marginalization of vulnerable groups.

Another observation of the SBCC strategies of the AMA revealed that, most of the strategies only focused on health. The most frequently cited motive for improved sanitation at the local level is still "health," yet this is rarely the primary reason for a person's behavior to change. Biran et al., (2009) reported that messages that are solely focused on germs and health are ineffective. From formative research studies conducted throughout the world, it has emerged that the most common motivations for households to invest in toilets are a combination of social, physical, and emotional drivers (pride, loss of face, convenience, and comfort, to name a few). The use of emotional drivers such as disgust, nurture, and connection to motivate people to wash their hands has been demonstrated in recent research, including studies conducted by the London School of Hygiene and Tropical Medicine (LSHTM) (Greenland, 2017).

Another challenge is that SBCC strategies focus on addressing an excessive number of behaviors and audiences at once. Many hygiene and sanitation promotion programs seek to address an excessive number of behaviors and audiences at once — for example, handwashing with soap, food hygiene, safe water handling, and bed net use. This may be too much for the audience especially in the case of the Accra Metropolitan Area.

Once again, the AMA is confronted with the issue of insufficient capacity. Even though hygiene and sanitation messages are specified centrally, there might be a loss of quality because of a lack of knowledge on the part of the agency's employees. Local innovation in hygiene and sanitation promotion messaging, as well as the translation of global and national insights into local knowledge, are required in order to achieve higher-quality results.

Finally, in BCC, there are gender norms and roles that are enforced. There is a tendency to focus primarily on women as the major party responsible for hygiene in the family, without taking into consideration the limited impact that women may have on male behavior if men are not also targeted for hygiene education and promotion. Support for appropriate hygiene behavior by all family members, particularly by the father, may have a significant impact on the behavior of the family. BCC strategies should be properly balanced to incorporate men in order to address this issue. Even though women will frequently be the primary caregivers, this should not result in a complete lack of communication addressed toward men and boys. To make matters worse, stereotypical images should be avoided, such as those that primarily feature women teaching youngsters how to wash their hands or girls cleaning the family toilet. It is preferable to counterbalance these pictures with images of males who are likewise leaders in hygiene, without going overboard with this.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes the major findings of the study, conclusions and the appropriate recommendations on the study. The purpose of the study was to ascertain the role of Social and Behavioural Change Communication (SBCC) strategies in tackling sanitation challenges in Accra Metropolitan Assembly. The following specific objectives were considered in order to achieve the main objective of the study.

i. Identify the SBCC strategies adopted to promote personal hygiene and solid waste management in Accra Metropolitan Assembly
ii. Assess the effectiveness of these SBCC strategies in militating problems of personal hygiene and solid waste management in Accra Metropolitan Assembly.
iii. Discuss the challenges faced in using SBCC strategies to address personal hygiene and solid waste management in Accra Metropolitan Assembly.

A descriptive survey design with mixed (quantitative and qualitative) approach were adopted for the study. The study used a sample of 230 purposively and randomly selected households and enterprises, AMA officials, private waste management company officials, communication and waste management professionals for the study. The study used questionnaires, interviews, descriptive statistics and document review for the research.

5.1 Summary

Men’s and women's availability and motivation to participate in the survey all had an impact on the gap between male and female responders. This study indicated that

women frequently deal with concerns of cleanliness and garbage in the neighbourhood. All ages and employment forms were represented in the study. Majority of the respondents had average education levels. For the objectives of the study, the findings are presented as follows:

5.1.1 SBCC Strategies

The findings showed advocacy, social mobilization, and behaviour change communication as the SBCC strategies adopted by stakeholders. On advocacy, it was found that AMA through its partnership with the government, development partners, raise funds to finance its sanitation promotions and interventions. The strategies adopted were classified under individual, community, institutional and national levels. SBCC strategies focused on educating residents of the district on proper hygiene and sanitation habits, such as handwashing and improved sanitation. Public education in markets, schools, churches, etc. was used to raise sanitation awareness and promote personal cleanliness and SWM. The GAMA initiative helped MSWR, MLRD, and MMDAs monitor and sustain sanitation services and operations. This included help for the creation of social accountability systems to ensure effective service operation and maintenance. The government employed print and audio-visual media to educate the people on the need for improved water supplies.

5.1.2 Effectiveness of SBCC

The project called for the construction of 19,100 toilets. By February 2020, over 27,000 toilets have been built, serving over 235,000 people. The project also created jobs and improved the environment by reducing open defecation and open disposal of human excreta. Overall, results are rated exceptionally high for relevance, efficacy, and

efficiency. Assuring family access to clean water frees up time for income-generating activities. Women are disproportionately affected by the sickness burden caused by water-borne infections due to needing to care for sick family members. The overall project outcome is good due to the two current sewerage extension contracts. An instruction manual for the construction, operation, and maintenance of bio-digesters for residential toilets was created. The number of micro-enterprises providing sanitation was one of the project's intermediate results. The project's role to managing the COVID-19 outbreak was unintended. It promoted cleanliness and handwashing and offered handwashing stalls, which are important to preventing transmission.

5.1.3 Challenges of SBCC

The findings show that on the individual level, irregular waste collection, high cost of waste disposal inadequate funding, attitude of citizenry ere found to be contributory factors. However, on the community and national level, high cost of waste disposal, rapid urbanization, increasing volumes of waste due to faster rate of generation, inadequate funding, lack of stakeholder engagement, human resource constraints, lack of engineered landfill sites for proper waste treatment, bad road network, high cost of operations as challenges militating against waste management.

5.2 Conclusion

It is concluded that stakeholders used advocacy, social mobilization, and behaviour change communication as SBCC techniques. On advocacy, AMA raises cash for its sanitation campaigns and interventions through partnerships with the government and development partners. Individual, communal, institutional, and national strategies were established. Disciplined handwashing and better sanitation were among the district's

SBCC measures. Public education at markets, schools, churches, etc. was employed to promote sanitation and SWM. GAMA assisted MSWR, MLRD, and MMDAs in monitoring and sustaining sanitation services. This included assisting in the development of social accountability systems to assure service delivery. The government used print and video media to inform the public about better water supply.

The plan called for 19,100 toilets. By February 2020, around 235,000 people will have used over 27,000 restrooms. The project also benefitted the environment by minimizing open defecation and waste disposal. Overall, results are highly relevant, effective, and efficient. Safe drinking water frees up time for income-generating pursuits. Water-borne diseases sicken women more than males because they must care for sick family members. It is a success thanks to the two current sewerage extension contracts. A guide for building, operating, and maintaining household bio-digesters was established. This was one of the project's intermediate results. A role in managing the COVID-19 epidemic was not planned, however it was equally effective in spreading awareness. It promoted cleanliness and handwashing, both of which help reduce transmission.

Individually, irregular waste collection, high waste disposal costs, and citizen attitudes were determined to be contributing causes. However, on a local and national level, high disposal costs, rapid urbanization, increasing waste volumes due to faster generation, lack of stakeholder engagement, human resource constraints, lack of engineered landfill sites for proper waste treatment, bad road network, high operational costs all work against waste management.

5.4 Recommendation

Due to the influence of economy on social change, it is recommended that government should ensure macroeconomic stability and adequate government spending in growth sectors such as construction and infrastructure to facilitate and promote economic activities and growth. It also recommended that government and DFIs conduct sound research before determining any initiating sanitation policies and sanitation promotion campaigns. It recommended that adequate budgetary allocations and appropriations are made to the MDAs and MMDAs responsible for the sanitation sector for infrastructure and social change interventions due to inadequate funding and sanitation infrastructure.

It is recommended that government partner with the private sector and others stakeholders such as community leaders, opinion leaders, schools, faith-based organizations, CSOs, NGOs etc to undertake sanitation interventions and promotions for social change. Especially, the schools to start sanitation social change from a very young age as children are more amendable to adopt new ideas, innovations than adults with deep seated social and behaviour norms and conduct.

It is also recommended that public education through mass media and interpersonal communication be provided to individuals and communities to drive social change. MMDAs should educate their constituents on their by-laws and sanctions should be enforced to serve as deterrent to others. Sanitation courts must also be established to immediately prosecute culprits so as to deter others.

5.5 Suggestions for Further Studies

Further studies can be conducted to ascertain the effect of mediating and moderating factors such as gender, age, income, education, specific communication channel, target

audience, language, etc on the study outcome. Further studies can be conducted on subsectors like water sanitation, open-defaecation, waste disposal among others. A comparative study can be conducted across two or more subsectors or countries. For example, Ghana and Nigeria, South Africa, United Kingdom etc. Further studies can be conducted into SBCC of segregation, reuse and recycling of plastic waste in Ghana using a large population.

REFERENCES

Abalo, E. M., Agyemang, S., Atio, S., Ofosu-Bosompem, D., Peprah, P., & Ampomah-Sarpong, R. (2017). Environmental sanitation unleashed: Effectiveness and challenges of the National Sanitation Day as a community sanitation participatory approach in Aboabo, Ghana. *Cogent Environmental Science, 3*(1), 1405888.

Abraham, C., & Sheeran, P. (2005). The health belief model. *Predicting health behaviour, 2*, 28-80.

Accra Metropolitan Assembly (AMA). (2021b). *Performance report on solid waste contractors. First quarter January-April, 2021*. Accra: Ghana.

Accra Metropolitan Assembly (AMA). (2021a). *The Assembly*. Retrieved 18th May 2021 from https://ama.gov.gh/theassembly.php

Adamu, M. M., & Ali, A. C. (2020). The practice of health communication in urban sanitation. *The Journal of Development Communication, 31*(2), 46-65.

Adjibolosoo, S. V. K. (2017). *Behavioural and cultural factors that influence open defaecation among first cycle school pupils in the Eastern and Volta Regions of Ghana*. Unpublished Doctoral dissertation, University of Ghana.

Agba, J. U. (2019). Application of Social and Behaviour Change Communication Education Strategies in the Management of Open Defecation in Cross River State, Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS), 24*(7), 01-15

Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological bulletin, 82*(2), 261.

Akotuah, S. (2019). *Process Evaluation of the Implementation of the Greater Accra Metropolitan Area (GAMA) Household Toilet Project: A Case Study of La Dadekotopon Municipality (LaDMA), Accra* (Doctoral dissertation, University of Ghana).

Amoako, C., & Frimpong Boamah, E. (2015). The three-dimensional causes of flooding in Accra, Ghana. *International Journal of Urban Sustainable Development, 7*(1), 109-129.

Anderson, M. T. (2019). *Addressing Poor Sanitation in the La Community of the La Dade-Kotopon Municipality through Communication*. Unpublished doctoral dissertation, University of Ghana.

Andersson, K., Dickin, S., & Rosemarin, A. (2016). Towards "sustainable" sanitation: challenges and opportunities in urban areas. *Sustainability, 8*(12), 1289.

Atanga, R. A. (2020). The role of local community leaders in flood disaster risk management strategy making in Accra. *International journal of disaster risk reduction, 43*, 101358.

Awantang, G. N., Helland, A., Velu, S., & Gurman, T. (2021). Evaluating capacity strengthening for social and behavior change communication: a systematic review. *Health Promotion International, daab068*, 1–16. https://doi.org/10.1093/heapro/daab068

Baluchova, B., & Mamova, A. (2017). The role of implementation and communication of MANTRA Water, sanitation and hygiene program in improving public health in Odisha state (India). *Neuroendocrinology Letters, 38*(Suppl 1), 35-39.

Bish, A., & Michie, S. (2010). Demographic and attitudinal determinants of protective behaviors during a pandemic: A review. *British Journal of Health Psychology, 15*(4), 797–824.

Biran, A., Schmidt, W. P., Wright, R., Jones, T., Seshadri, M., Isaac, P., ... & Curtis, V. (2009). The effect of a soap promotion and hygiene education campaign on handwashing behaviour in rural India: a cluster randomised trial. *Tropical medicine & international health, 14*(10), 1303-1314.

Carpenter, C. J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health communication, 25*(8), 661-669.

Centre for Affordable Water and Sanitation Technology (CAWST). (2015). *Introduction to Environmental Sanitation*. Trainer Manual, August 2015. Canada: CAWST

Centers for Disease Control and Prevention (CDC) (2017, June 22). *Sanitation & Hygiene*. Retrieved August 15, 2021 from https://www.cdc.gov/healthywater/global/sanitation/index.html

Champion, V., & Skinner, C. S. (2008). The Health Belief Model. In: Glanz, K., Rimer, B., & Viswanath, K, (eds). *Health behavior and health education.* 4 (pp. 45–65). San Francisco, CA: Jossey-Bass.

Clark, C. J., Spencer, R. A., Shrestha, B., Ferguson, G., Oakes, J. M., & Gupta, J. (2017). Evaluating a multicomponent social behaviour change communication strategy to reduce intimate partner violence among married couples: study protocol for a cluster randomized trial in Nepal. *BMC Public Health, 17*(1), 1-14.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research*. (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Cronin, A. A., Badloe, C., Torlesse, H., & Nandy, R. K. (2015). Water, Sanitation and Hygiene: Moving the Policy Agenda Forward in the Post-2015 Asia. *Asia & the Pacific Policy Studies*, *2*(2), 227-233.

Cronin, P., Ryan, F., & Coughlan, M. (2008). *Undertaking a literature review: a step-by-step approach. British journal of nursing*, *17*(1), 38-43.

Curtis, V., Dreibelbis, R., Sidibe, M., Cardosi, J., Sara, J., Bonell, C., Mwambuli, K., Moulik, S. G., White, S., & Aunger, R. (2020). How to set up government-led national hygiene communication campaigns to combat COVID-19: a strategic blueprint. *BMJ global health*, *5*(8), e002780.

Daniel, I. O. A. (2013). Communication as Sociocultural Meaning Exchange. *International journal of applied linguistics and English literature*, *2*(5), 173-177.

De Buck, E., Van Remoortel, H., Hannes, K., Govender, T., Naidoo, S., Avau, B., ... & Young, T. (2017). Approaches to promote handwashing and sanitation behaviour change in low-and middle-income countries: a mixed method systematic review. *Campbell Systematic Reviews*, *13*(1), 1-447.

Doris, F. A. (2014). Water and Sanitation Challenges of Slum Dwellers in Ghana: The Case of Nima Women. *International Journal of Innovative Research and Development*, *3*(4), 468-71.

Djukic, D., Moracanin, S. V., Milijasevic, M., Babic, J., Memisi, N., & Mandic, L. (2016). Food safety and food sanitation. *Journal of Hygienic Engineering and Design*, *14*, 25-31.

Doswell, W. M., Braxter, B. J., Cha, E., & Kim, K. H. (2011). Testing the theory of reasoned action in explaining sexual behavior among African American young teen girls. *Journal of pediatric nursing, 26*(6), e45-e54.

Efron, S. E., & Ravid, R. (2018). *Writing the literature review: A Practical Guide*. New York, NY: Guilford Press

Elysia, V., & Wihadanto, A. (2020). The impact of poor sanitation on tourism development: A global review. *Indonesian Journal of Urban and Environmental Technology*, *3*(2), 220-231.

Fitzpatrick-Lewis, D., Yost, J., Ciliska, D., & Krishnaratne, S. (2010). Communication about environmental health risks: A systematic review. *Environmental health, 9*(1), 1-15.

Goodwin, N. J. (2016). *Effects of participation and sense of community on change agents in an Indonesian sanitation behaviour change communications program*. Unpublished doctoral dissertation, Faculty of Arts and Sciences, University of Sydney.

Greenland, K. (2017). Harnessing the power of emotional drivers to promote behaviour change–Authors' Reply. *The Lancet Global Health, 5*(3), e265.

Haider, M. (Ed.). (2005). *Global public health communication: Challenges, perspectives, and strategies*. Toronto: Jones & Bartlett Learning.

Hardoy, A., Hardoy, J., Pandiella, G., & Urquiza, G. (2005). Governance for water and sanitation services in low-income settlements: experiences with partnership-based management in Moreno, Buenos Aires. *Environment and Urbanization, 17*(1), 183-200.

Huuhtanen, S., & Laukkanen, A. (2009). *A guide to sanitation and hygiene in developing countries*. Updated version, 2. Global Dry Toilet Association of Finland, Tampere University of Applied Sciences

IHBP (2013). *Social and Behavior Change Communication (SBCC): Training for Information, Education, and Communication (IEC) Officers*. Facilitators Guide, September 2013. India: USAID India, FHI 360 & IHBP

Jesson, J., Matheson, L., & Lacey, F. M. (2011). *Doing your literature review: Traditional and systematic techniques*. Thousand Oaks, CA: SAGE

John, G. (2020). Social and behaviour change communication (SBCC) strategies and the fight against drug abuse in Calabar South Local Government Area, Cross River State. *International Journal of Advanced Mass Communication and Journalism, 1*(2), 01-10.

John, G., & Bassey, E. N. (2020). Advocacy as a core strategy of social and behaviour change communication interventions. *International Journal of Advanced Mass Communication and Journalism, 1*(2), 21-26.

Johannessen, Å., Rosemarin, A., Thomalla, F., Swartling, Å. G., Stenström, T. A., & Vulturius, G. (2014). Strategies for building resilience to hazards in water, sanitation and hygiene (WASH) systems: The role of public private partnerships. *International Journal of Disaster Risk Reduction, 10*, 102-115.

Kamara, J. K., Galukande, M., Maeda, F., Luboga, S., & Renzaho, A. (2017). Understanding the challenges of improving sanitation and hygiene outcomes in a community based intervention: A cross-sectional study in rural Tanzania. *International journal of environmental research and public health, 14*(6), 602.

Kirkman, R., & Voulvoulis, N. (2017). The role of public communication in decision making for waste management infrastructure. *Journal of environmental management, 203*, 640-647.

Kumwenda, S. (2019). Challenges to hygiene improvement in developing countries. In Potgieter, N., & Hoffman, A. N, T. (eds). *The relevance of hygiene to health in developing countries.* (Vol. 1, pp. 1-19). IntechOpen.

Laranjo, L. (2016). Social media and health behavior change. In Syed-Abdul, S., Gabarron, E., & Lau, A. Y.S. (eds). *Participatory health through social media* (pp. 83-111). Academic Press.

Laxminarayan, R., Chow, J., & Shahid-Salles, S. A. (2006). Intervention cost-effectiveness: overview of main messages. In Jamison, D. T., Breman, J. G., Measham, A. R., Alleyne, G., Claeson, M., Evans, D. B., ... & Musgrove, P. (Eds.). *Disease control priorities in developing countries*. (2nd ed.). Washington DC: World Bank.

Lukkumanul, H. S. (2019). Environmental health and sanitation. *International Journal of Trend in Scientific Research and Development (IJTSRD), 3*(3), 912-915.

Lüthi, C., McConville, J., & Kvarnström, E. (2010). Community-based approaches for addressing the urban sanitation challenges. *International Journal of Urban Sustainable Development, 1*(1-2), 49-63.

Mara, D., Lane, J., Scott, B., & Trouba, D. (2010). Sanitation and health. *PLoS Med, 7*(11), e1000363.

Massa, K., Kilamile, F., Safari, E., Seleman, A., Mwakitalima, A., Balengayabo, J. G., ... & Mubyazi, G. M. (2017). Contributing to the debate on categorising shared sanitation facilities as 'unimproved': An account based on field researchers' observations and householders' opinions in three regions, Tanzania. *PloS one, 12*(11), e0185875.

Matta, G., & Kumar, A. (2017). Health risk, water hygiene, science and communication. ESSENCE-*International Journal for Environmental Rehabilitation and Conservation, 1*, 179-186.

McKee, N. (1992). *Social mobilization and social marketing in developing communities: Lessons for Communicators*. Penang: Southbound.

McKee, N., Manoncourt, E., Yoon, C., & Carnegie, R. (eds) (2000). *Involving People, Evolving Behavior*. New York: UNICEF; Penang: Southbound

McKee, N., Becker-Benton, A., & Bockh, E. (2014). Social and behavior change communication. *The handbook of development communication and social change*, 278-297.

McQuail, D., & Windahl, S. (2015). *Communication models for the study of mass communications*. Routledge.

Mensah, J., & Sabater, A. (2019). Managing environmental sanitation in the catchment area of Benya Lagoon, Ghana: Education, regulation or infrastructure management as a matter of strategic priority?. *Cogent Social Sciences*, *5*(1), 1709347.

Mmom, P. C., & Mmom, C. F. (2011). Environmental sanitation and public health challenges in a rapidly growing city of the third world: the case of domestic waste and diarrhoea incidence in Greater Port Harcourt Metropolis, Nigeria. *Asian Journal of Medical Sciences, 3*(3), 115-120.

Mnisi, R. (2011). *An assessment of the water and sanitation problems in New Forest, Bushbuckridge Local Municipality, South Africa*. Unpublished masters dissertation, University of the Free State.

Moe, C. L., & Rheingans, R. D. (2006). Global challenges in water, sanitation and health. *Journal of water and health, 4*(Suppl 1), 41–57.

Mosler, H. J. (2012). A systematic approach to behavior change interventions for the water and sanitation sector in developing countries: a conceptual model, a review, and a guideline. *International journal of environmental health research, 22*(5), 431-449.

Muanda, C. (n.d). *Governance of Decentralized Sanitation: Objectives, classification and selection of sanitation*. South Africa: Unesco-IHE and CWSR (Centre for Water and Sanitation Research) – Cape Peninsula University of Technology

Naughton, C. & Mihelcic, J. (2017). Introduction to the Importance of Sanitation. In: Rose, J.B. & Jiménez-Cisneros, B. (eds). *Global Water Pathogens Project. Part 1 The Health Hazards of Excreta: Theory and Control* (pp. 3-11). Michigan State University, E. Lansing, MI, UNESCO

Nhapi, I. (2015). Challenges for water supply and sanitation in developing countries: Case studies from Zimbabwe. In: Grafton Q., Daniell K., Nauges, C., Rinaudo, J. D., & Chan N. (eds). *Understanding and managing urban water in transition* (pp. 91-119). Global Issues in Water Policy, 15, Dordrecht: Springer.

Ngigi, S., & Busolo, D. N. (2018). Behaviour change communication in health promotion: Appropriate practices and promising approaches. *International Journal of Innovative Research and Development*, *7*(9), 84-93.

Ngwu, U. I. (2017). The practice of open defecation in rural communities in Nigeria: a call for social and behaviour change communication intervention. *International Journal of Communication Research, 7*(3), 201-206.

O'Connell, K. (2014). *What influences open defecation and latrine ownership in rural households?: Findings from a Global Review*. Water and Sanitation Program: Working Paper 90044. Washington, DC: World Bank

Onyango, M. A., & Uwase, M. (2017). Humanitarian response to complex emergencies and natural disasters. *International Encyclopedia of Public Health*, 106–116.

Owusu, G. (2010). Social effects of poor sanitation and waste management on poor urban communities: A neighborhood-specific study of Sabon Zongo, Accra. *Journal of Urbanism*, *3*(2), 145-160.

Pandve H. T. (2008). Environmental sanitation: An ignored issue in India. *Indian journal of occupational and environmental medicine, 12*(1), 40.

Pattanayak, S. K., Blitstein, J. L., Yang, J. C., Patil, S. R., Jones, K. M., Poulos, C., & Dickinson, K. L. (2006). *Evaluating information and communication strategies to promote latrine use and improve child health: Design and baseline findings from a community randomized trial in Bhadrak, Orissa*. Research Triangle Park, North Carolina: RTI Working Paper.

Peal, A., Evans, B., Ahilan, S., Ban, R., Blackett, I., Hawkins, P., ... & Veses, O. (2020). Estimating safely managed sanitation in urban areas; lessons learned from a global implementation of excreta-flow diagrams. *Frontiers in Environmental Science, 8*, 1-13.

PRIA (2019). *Lived Realities of Women Sanitation Workers in India: Insights from a Participatory Research Conducted in Three Cities of India*. New Delhi, India: Participatory Research in Asia (PRIA).

Puri, S. (2017). The role of information, education and communication (IEC) in sustainable solid waste management. *Open Access International Journal of Science and Engineering*, *2*(9), 102-6.

Saaka, M., Aryee, P., Ali, M., & Masahudu, A. R. (2017). The effect of social behavior change communication package on maternal knowledge in obstetric danger signs among mothers in East Mamprusi District of Ghana. *Globalization and health, 13*(1), 1-12

SBC^3 (Centre for Social and Behaviour Change Communication). (2021). *What is SBCC*. Retrieved August 15, 2021, from https://www.centreforsbcc.org/what-is-sbcc/

Seetharam, K. (2015). Challenges and opportunities for sanitation in developing countries. *Journal of Science Policy & Governance, 7*(1).

Simons-Morton, B., McLeroy, K., & Wendel, M. (2011). *Behavior theory in health promotion practice and research*. Jones & Bartlett Publishers.

Songsore, J. (2003). *Towards a better understanding of urban change: Urbanization, national development and inequality in Ghana*. Ghana Universities Press.

Sriram, A., & Maheswari, U. (2013). Integrated communication strategy for creating awareness on sanitation and hygiene behavior change. *International Journal of Communication and Health*, *14*, 1, 53-59.

Thuy, L. P. (2019). *Ineffective communication between direct manager, employee and low promotion satisfaction at Melcosa Vietnam Ltd*. Unpublished masters dissertation, University of Economics Ho Chi Minh City

United States Agency for International Development, Bureau for Global Health and Office of Health, Disease, and Nutrition (USAID/GH/HIDN/CSHGP). (2014). *Child Survival and Health Grants Program: Technical Reference Materials 2014, Social and Behavior Change*. USAID/GH/HIDN/CSHGP

Van Minh, H., & Hung, N. V. (2011). Economic aspects of sanitation in developing countries. *Environmental health insights, 5*, EHI-S8199.

Whitmarsh, L., Lorenzoni, I., & O'Neill, S. (2012). *Engaging the public with climate change: Behaviour change and communication*. Routledge.

Whittemore, R., & Knafl, K. (2005). The integrative review: updated methodology. *Journal of advanced nursing, 52*(5), 546-553.

William, S. M., Ilango, P., & Harisha, M. (2020). Development communication strategies for successful implementation of sanitation project. *JAC: A Journal of Composition Theory, 13*(5),376-385.

Wolfgang, Y. T., Veronique, M., Bernard, Y. O., Arsène, S. M. B., & Houenou, P. V. (2013). Effects of poor sanitation on public health: Case of Yopougon town (Abidjan). *African Journal of Environmental Science and Technology, 7*(3), 87-92.

World Health Organization (2015). *Sanitation safety planning: Manual for safe use and disposal of wastewater greywater and excreta*. Geneva, Switzerland: WHO.

World Health Organization (WHO) (2018). *Guidelines on sanitation and health*. Geneva, Switzerland: WHO.

World Health Organization and United Nations Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (WHO/UNICEF/JMP). (2010). *Progress on Sanitation and Drinking-water: 2010 Update*. WHO: Geneva, Switzerland and UNICEF: New York, USA.

Zanoo, A. M. A. (2017). *Mass media and environmental consciousness of urban dwellers in the Cape Coast Metropolis*. Unpublished doctoral dissertation, University of Cape Coast.

APPENDICES

APPENDIX A: QUESTIONNAIRE FOR HOUSEHOLDS AND BUSINESSES

Section A: Demographic Information

1. Type of Respondent

   Household [ ] Business [ ]

2. Gender:

   Male [ ] Female [ ]

3. Age:

   Below 20 [ ] 21 - 30 [ ] 31 - 40 [ ] 41 and above [ ]

4. Marital Status:

   Single [ ] Married [ ] Widowed [ ]

5. Marital Status:

   Formal [ ] Informal [ ] Unemployed [ ]

6. What is your highest level of education?

   Basic [ ] Secondary/ Vocational [ ] Tertiary [ ]

   Others. Please, specify……

7. Household/ Employee size

   Below 4 [ ] 5 - 7 [ ] 8 - 10 [ ] 11 and above [ ]

8. How long have you lived / worked in AMA?

   Less than 5 years [ ] Between 6 to 10 years [ ]

   Between 11 to 15 years [ ] 16 years and above [ ]

Section B: Social Behaviour Change Communication (SBCC) and Sanitation

Brand Awareness

1. How did you hear about Ghana Institute of Journalism before applying?

   I am alumnus [ ] Media advertisement [ ] Family and friends [ ]

   Friend [ ] GIJ Website [ ]

   Others. Please, specify……

2. Why did you choose Ghana Institute of Journalism?

   Parental Influence [ ] Dream University [ ] Location [ ]

   Programmes [ ] Smaller Class Size [ ]

   Others. Please, specify……

3. Which other university in Ghana would you have considered attending apart from Ghana Institute of Journalism?

   University of Ghana [ ] University of Cape Coast [ ]

   University of Education [ ] African University College of Communications[]

   Others. Please, specify……

Brand Association

4. Which word(s) best describes Ghana Institute of Journalism?

   Excellence [ ] High Quality [ ] High Standards [ ]

   Challenging [ ] World Class Education [ ] Distinction [ ]

   Others. Please, specify……

Brand Loyalty

5. Compared to other university brands, how best does GIJ satisfy your needs as student? On a scale of 1-5

   1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

6. Are you an active member in any of the clubs on campus?

   Yes [ ] No [ ]

7. Do you participate in GIJ Student Representative Council (SRC) activities?

   Yes [ ] No [ ]

8. Will you recommend GIJ to other prospective students?

   Yes [ ] No [ ]

9. If GIJ is to offer a professional programme will you pursue it?

   Yes [ ] No [ ]

Please tick (√) the appropriate responses as they may apply. (SA = Strong Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree)

Brand Loyalty	**SD**	**D**	**N**	**A**	**SA**
1. I really love GIJ					
2. I really talk about GIJ to others					
3. I consider myself loyal to GIJ					
4. GIJ satisfies my needs as a student					
5. I have a strong desire for the GIJ brand					

Perceived Quality

10. What is GIJ's greatest asset?

    Programmes [ ] Smaller class sizes [ ] Gender Balance [ ]

    Scholarship opportunities [ ] Study abroad opportunities [ ]

    Links with international community [ ] Lecturers [ ]

    Others. Please, specify……

Please tick (√) the appropriate responses as they may apply. (SA = Strong Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree)

Perceived Quality	**SD**	**D**	**N**	**A**	**SA**
1. GIJ is a credible brand.					
2. GIJ provides high quality world class education.					
3. GIJ has good lecturers.					
4. GIJ teaches me to be different.					
5. GIJ gives me a lot of exposure.					

Thank you for time

APPENDIX B: INTERVIEW GUIDE FOR PUBLIC OFFICALS

1. Please what is your position in your agency? ……
2. For how long have you been working with your agency? ……
3. Is the economic activities of households and businesses in the project area considered in the planning, execution and monitoring of transportation infrastructure?
4. How does road infrastructure affect economic activities of household and businesses in the project area?
5. How does road infrastructure investments affect household and business income in the project area?
6. How does road infrastructure investments affect the economic growth of Ghana?
7. How should road infrastructure investments affect the economic growth of Ghana?
8. How does investment in transportation infrastructures, specifically in road network affect economic change in the project area?k
9. L
10. What is the quantity of waste generated in a day in tons, in your area of jurisdiction, and how much of it are you able to collect?
11. ……..……
    ……..……
12. What is the composition of these wastes, in percentages? That is for plastics, glass, metal, wood, food waste etc.

13. ……..……

……..……

14. How is this waste collected? For instance is it collected by private waste collectors or you do the collection yourselves. And with what equipment?
15. ……..……

……..……

16. What is the Social Behaviour Change Communication (SBCC strategies are used)?
17. What are the WASH interventions
18. ……..……

……..……

19. What is the cost of the collection to the customer?
20. ……..……

……..……

21. How do you fund the purchase and maintenance of your vehicles and equipment?
22. ……..……

……..……

23. Do you have any facility for separating the waste before disposal?
24. ……..……

……..……

25. What problems or challenges do you encounter in the collection and disposal of the waste?

26. ……..……

……..……

27. What suggestion or recommendations would you like to make for proper waste generation, storage, collection and disposal?

28. ……..……

……..……

29. What are some of the benefits we can derive from proper waste management?

30. ……..……

……..……

31. What is your view on the call for governments to ban plastics in the country?

32. ……..……

……..……

33.

34.

35.

36.

Thank you for your co operation

APPENDIX B: INTERVIEW GUIDE FOR EXPERTS

1. Please what is your position in your agency? ……
2. For how long have you been working with your agency? ……
3. Is the economic activities of households and businesses in the project area considered in the planning, execution and monitoring of transportation infrastructure?
4. How does road infrastructure affect economic activities of household and businesses in the project area?
5. How does road infrastructure investments affect household and business income in the project area?
6. How does road infrastructure investments affect the economic growth of Ghana?
7. How should road infrastructure investments affect the economic growth of Ghana?
8. How does investment in transportation infrastructures, specifically in road network affect economic change in the project area?

Thank you for your co operation

B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: Increased access to improved sanitation facilities under the project	
Outcome Indicators	1. Number of people provided with access to improved sanitation facilities 2. Number of School Pupils provided with improved sanitation facilities 3. Direct project beneficiaries (number), of which female (percentage)
Intermediate Results Indicators	1. Number of improved latrines constructed under the project 2. Number of improved institutional sanitation facilities constructed 3. Number of people trained to improve hygiene behavior or sanitation practices 4. Number of micro-enterprises providing sanitation services
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	1. 27,242 improved house hold latrines constructed 2. 339 improved institutional sanitation facilities constructed 3. 155,330 people trained to improve hygiene behavior & sanitation practices 4. 12 micro-enterprises established and provided sanitation services
Objective/Outcome 2: Increased access to improved water sources under the project	
Outcome Indicators	1. Number of people provided with access to improved water sources
Intermediate Results Indicators	1. Number of improved water points constructed or rehabilitated 2. Number of new piped household water connections 3. Water distribution mains installed under the project (Km) 4. GWCL low-income unit established
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	1. 114 Improved community water points constructed or rehabilitated 2. 10,200 new piped household water connections provided 3. 83,000 piped household water connections rehabilitated 4. 281 Km water distribution mains installed 5. GWCL low-income unit established
Objective/Outcome 3: Volume of waste treated	
Outcome Indicators	1. Volume(mass) of BOD pollution load removed by treatment plant (Tones/year)

Objective/Outcome 3: Volume of waste treated	
Outcome Indicators	1. Volume(mass) of BOD pollution load removed by treatment plant (Tones/year)

Intermediate Results Indicators	1. Capacity of sludge treatment plants constructed or rehabilitated 2. People provided with access to septage emptying services or sewerage
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	1. 50m3/day increase in capacity of sludge treatment plants 2. 205,000 people provided with access to septage emptying services or sewerage

AMA one household, one bin

5.3.1 REGISTRATION OF CLIENTS AND SUPPLY OF STORAGE BINS JAN – APRIL 2021

SUB METRO/CONTRACTOR	EST. POPULATION 2020	EST. HOUSEHOLDS 2020	TARGET (85%)	REG. HOUSEHOLDS	% OF REGISTERED HOUSEHOLDS	WEIGHT (15%)	BINS SUPPLIED	% OF HOUSEHOLDS SUPPLIED WITH BINS	WEIGHT (15%)	TOTAL SCORE (30%)
METROPOLITAN WASTE AND ALLIED SERVICES ABLEKUMA SOUTH	125,182	33,833	28,758.03	1490	4.40398779	0.661	1686	4.983304	0.747	1.408
LIBERTY WASTE ABLEKUMA SOUTH	10834	2,928	2,488.89	872	29.7803212	4.467	2098	71.65036	10.748	18.983
MESKWORLD CO. LTD. ASHEIDU KETEKE 1	8,491	35,766	30,401.34	1929	5.39334729	0.809	942	2.633765	0.395	8.277
TROPICAL WASTE. ASHEIDU KETEKE 2	142,472	35,766	30,401.34	1345	3.76052468	0.564	1339	3.743749	0.562	12.562
J. STANLEY OWUSU & CO. LTD OKAIKOI SOUTH	152,421	37,934	32,243.85	15203	40.0775671	6.012	8561	22.56818	3.385	9.236
	439,400	146,228								

5.3.2 PERFORMANCE APPRAISAL OF SOLID WASTE CONTRACTORS JAN – APRIL 2021

S/NO.	SUB METRO/CONTRACTOR	REGISTERED HOUSEHOLDS	MARKS (15%)	BINS SUPPLIED	MARKS (15%)	TOTAL SCORE (30%)	MARKS (70%)	TOTAL MARKS (100%)	REMARKS
1	METROPOLITAN WASTE AND ALLIED SERVICES ABLEKUMA SOUTH	1490	0.66	1686	0.75	1.41	38	**41.11**	Unsatisfactory performance.
2	ABLEKUMA SOUTH LIBERTY	872	4.40	2098	10.74	15.14	37	**52.14**	Unsatisfactory performance.
3	MESKWORLD CO. LTD. ASHEIDU KETEKE 1	1929	0.81	942	2.63	3.44	43	**46.44**	Unsatisfactory performance.
4	TROPICAL WASTE. ASHEIDU KETEKE 2	1345	0.56	1339	0.56	1.12	34	**35.12**	Unsatisfactory performance.
5	J. STANLEY OWUSU & CO. LTD OKAIKOI SOUTH	15203	6.01	8561	3.39	9.4	41	**50.4**	Unsatisfactory performance.