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DISSERTATION TITLE: ASSESSING THE ROLE OF COMMUNICATION IN ENVIRONMENTAL SANITATION MANAGEMENT IN DEVELOPING COUNTRIES

BY

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DECLARATION

I declare that, this piece of literature is entirely my original work; as such it has not been submitted either in part or whole for the award of a degree at the Ghana Institute of Journalism or any other Institution. In situations necessary, due acknowledgement, attributions and references were made.

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SUPERVISOR'S DECLARATION

I hereby declare that this term paper is the work of Tabitha Sackey as partial fulfilment of requirement for the award of a Master of Arts Degree in Public Relations. The work was supervised by me in accordance with the guidelines laid down by the Ghana Institute of Journalism.

DR. RICHARD BOATENG

(SUPERVISOR)

Date: …… Signature: ……

DEDICATION

This piece of literature is dedicated to the Almighty God, the creator of Heaven and Earth, from whom I derived my strength throughout all this period. He who gave me hope when there was none and always carry me on eagle wings to this height, beyond my understanding.

I also dedicate this work to my Late Mother Mrs. Elizabeth A.T. Frimpong for her advice and support, emotionally, spiritually and physically.

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ABSTRACT

Developing countries are bedevilled with a myriad of social, economic, political, and development challenges. One of such challenges is the issue of sanitation, and the management of environmental sanitation. In order to curb this phenomenon, there is the need for an integrative approach by governments, non-state institutions, as well as individuals concerned with environmental sanitation. But, communication is pivotal in all such processes in dealing with environmental sanitation management in these developing countries. This qualitative study therefore, examined the role communication in, environmental sanitation management. It became evident from the findings of this study that, in developing countries, environmental sanitation management remains a phenomenal challenge for most governments. This situation is attributed to a number of human social, cultural, political and economic behavioural actions, inadequate financial resource and investment, and lack of infrastructure and human capital to deal with the sanitation menace in these developing countries. This situation, comes with its implications in varied forms, which consequently affect the plights of people living in these regions and retards development. With this revelations, there is the need for developing countries to marshal out integrated approaches, mostly, community centred, with communication as a pivotal element in solving the canker bedevilling developing countries in environmental sanitation management for sustainable development.

CHAPTER ONE

INTRODUCTION

1.1 Overview of the Study

Many developing countries are bedevilled with a myriad of social, economic, political, and development challenges. Socially, one challenge that is characteristic of many developing countries, in the issue of sanitation. In many of these developing countries' cities, rapid urban growth has far outpaced metropolitan and municipal authorities' capacity to provide basic services including adequate sanitation (Mensah, 2010). Besides the low-income feature, the developing countries exhibit several characteristics, including the phenomenon of poor environmental sanitation (Mensah, 2020). Despite being universally recognised as a critical development issue; environmental sanitation management remains a challenge in developing countries. According to Mensah (2020), environmental sanitation in developing countries has taken a centre stage in contemporary development debates due to the poor state of affairs with respect to its management in those countries.

Van Minh and Hung (2011), has also observed that, while about 99 percent of people living in industrialized countries have access to improved sanitation, only a little above half (53 percent) of the population in developing countries have such access. Recognising the global health and livelihood implications of inadequate access to water and sanitation for human and community development, the United Nations (UN) included water and sanitation in the Sustainable Development Goals (SDGs). Goal six of the SDGs seeks to ensure availability and sustainable management of water and sanitation for all (UN, 2017). The World Health Organisation (WHO, 2014); WHO/United Nations Children's Fund (UNICEF, 2015) has noted that, achieving this goal calls for effective ESM strategies in all communities in the world, especially in developing countries where the sanitation situation is most unacceptable. Poor

environmental sanitation practices exhibited in the disposal of solid waste, wastewater and excreta, cleaning of drainage including personal, household and community hygiene significantly contribute to infant and child mortality (Mmon and Mmon, 2011). About 827,000 people in low- and middle-income countries (developing countries) die as a result of inadequate water, sanitation, and hygiene each year, representing 60 percent of total diarrhoeal deaths (WHO, 2019), with poor sanitation believed to be the main cause in some 432 000 of these deaths.

On the other hand, improved environmental condition affects positively a wide range of development indicators. Thus, environmental sanitation is a channel to improved quality of life of the individuals and a contributor to their social, economic and physical development (Olowoporoku, 2013). Numerous studies have shown that the incidence of many diseases is reduced when people have access to, and make regular use of adequate sanitary installations (Aremu, 2012; Mohammed 2011; Mmon and Mmon 2011; Nwankwo, 2011; Luthi, 2012; Acheampong, 2010; FMHE 2009; Harvey, 2008; WHO and UNICEF, 2008; Amadi and Iwuala, 2005; FRN, 2005; WHO, 2005; Mensah, 2002). The importance of environmental sanitation is reflected not only in the United Nation's endorsement of sanitation as a human right but also its inclusion in the Sustainable Development Goals (SDGs) in 2015. Goal 6.2 of the SDGs enjoins global leaders to ensure universal access to adequate clean water, equitable sanitation and hygiene by 2030 (Hutton and Chase, 2016; UN, 2018).

However, it has been realised (Mensah, 2019; Prüss-Ustün et al., 2019) that the environmental sanitation Goal of the SDGs cannot be achieved, especially in the developing countries, without recourse to a sound and practicable environmental sanitation management framework which can be translated it into practice. In order to achieve such practicable sound environmental

sanitation, there is the need for behavioural and attitudinal change, as has been shown by Nanan and White (2002), that behaviour intervention related to water, sanitation, and hygiene among mothers and children will result in positive increase between baseline and post-intervention surveys. This behavioural and attitudinal change is strongly associated with communication. Therefore, this paper would be concerned with the role of communication in environmental sanitation management in developing countries.

1.2 Problem Statement

While several promotional methods are available for environmental sanitation management, the three main ones relate to the management of education, regulation, and infrastructure, thus, physical sanitation facilities (Abalo, 2016; Gebremariam and Tsehaye, 2019; McConville, 2010). In the view of Owusu Sekyere, Bagah, and Quansah (2015), educating the masses on environmental sanitation management raises their consciousness on environmental sanitation. Such education in environmental sanitation management, mostly, is driven towards behavioural and attitudinal change through various communication approaches and strategies. Abalo, 2016; Gebremariam and Tsehaye, 2019; McConville, 2010) see creating awareness through sensitisation on sanitation issues as central to solving the environmental sanitation management challenges, because, such education enables the masses to know not only the importance of sanitation but also what should be done to improve sanitation for environmental sustainability, improved health and sustainable community development. Meanwhile, Mmon and Mmon (2011) has underscored that environmental sanitation comprises both a change in behaviour and facilities to form a hygienic environment.

In fact, issues related to environmental sanitation practices have been explored by many researchers. For instance, there are studies on environmental sanitation as an exercise

(Adejumo, 2013; Afon and Faniran 2013; Aluko and Agbola 2007; Nwachukwu 2008), health effects of environmental sanitation (Mmon and Mmon, 2011; Harvey, 2008), community participation in environmental sanitation (Ekong, 2013; Daramola, 2012; Luithi 2012; UNEP, 2005), environmental sanitation management (Acheampong, 2010) and environmental sanitation education (Anijah et al, 2013; Aremu, 2012). These studies have focused on issues about provision and deficiencies of facilities and services as well as legislation. However, it is observed that, there are inadequate studies on sanitation management, and most importantly, researches on sanitation management are often silent on the role of communication, although it plays a critical role in sanitation education and awareness creation, as well as, behavioural change. This paper would, therefore, assess, through the use of secondary data, the role of communication in environmental sanitation management.

1.3 Research Objective

This paper would have a general objective, out of which would stem, specific objectives.

1.3.1 General Objective

The primary goal of this study is to assess the role of communication in environmental sanitation management, in developing countries, particularly, West Africa, including the control of community water supplies, excreta, and wastewater disposal, refuse disposal, control of disease vectors, provision of washing facilities for personal and domestic hygiene. By so doing, it would provide insight on the importance of communication and how it could be effectively incorporated in environmental sanitation management strategies.

1.3.2 Specific Objectives

Guided by the broad objective for this study, this paper would seek to specific achieve the following objectives:

1. To ascertain the state of environmental sanitation management in developing countries.
2. Examine the challenges associated with environmental sanitation management in developing countries.
3. Assess the role of communication in environmental sanitation management.

1.4 Research Questions

1. What is the state of environmental sanitation management in West Africa?
2. Which challenges confront West Africa regarding environmental sanitation management?
3. What role does communication play in environmental sanitation management?

1.5 Scope of the Study

This study would be limited to review secondary literature on the role of communication environmental sanitation management, using various publications of local and international bodies and their subsidiary organisations, research reports prepared by scholars, and universities in different fields but related to the topic under consideration, as well as books, theses, journals, websites and public records, and historical documents.

1.6 Significance of the Study

As the development of environmental sanitation services continuous to gain more relevance in government policies and programmes and more funds are being channelled towards this effort there is the need for more information on the environment sanitation management to be accessed in developing countries, where sanitation remain, a major development challenge, particularly in West Africa. This study would examine the environmental sanitation management, and environmental sanitation management in West Africa, as well as, the role of

communication in environmental sanitation management, thereby, serving, as a reference material for students and researchers alike, in the environmental and sanitation value chain, as well as organisations (including, NGOs) and policy makers, and policy think-tanks in their various endeavours.

Again, the results of the findings from this literature piece would help inform the communication activities of the environmental sanitation awareness and management programmes of the countries in the sub-region, to achieve its goal of improved environmental practices through better water and sanitation services utilisation.

1.7 Organisation of the Study

The study will be composed of four (4) chapters as outlined below:

Chapter 1 will be the introductory chapter of the study which would comprise a background of the study, problem statement, research objectives, research questions, scope, and significance of the study.

Chapter 2 will be dedicated to the literature review, which would include an introduction, conceptual review and empirical review.

Chapter 3 will be the study's methodology which would include a brief introduction and describe the procedure for the collection of secondary and its analysis thereof.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In the preceding chapter, an overview of the study was provided, serving as a foundation for the topic under consideration, "The role of communication in environmental sanitation management in developing countries," to be explored further. This chapter of the research would be dedicated to the appraisal and synthesising of previous work related to the topic, which would then provide the basis for summarising the major findings from previous works, draw inferences thereof, and also put forward recommendations for further studies. the review would be done under two broad themes; Conceptual Review, which would explain some concepts on the topic, and Empirical Review, which would provide a critical review of themes on the objectives for this study.

2.2 Conceptual Review

2.2.1 Environment

The term environment is derived from the French word "Environ" which means "surrounding". Our surrounding includes biotic factors like human beings, plants, animals, microbes, etc. and abiotic factors such as light, air, water, soil, etc. The environment can be defined as the surroundings or conditions in which a person, animal, or plant lives or operates (Josh, 2015). The term environment also refers to all elements of the physical and biological world, as well as the interactions between them (Josh, 2015). To Kalavathy (2004) the environment is a complex of many variables, which surrounds man as well as the living organisms, including water, air, and land and the interrelationships which exist among and between water, air and land and human beings and other living creatures such as plants, animals and micro-organisms. Kalavathy (2004) furthers that, the environment consists of an inseparable whole system

constituted by physical, chemical, biological, social, and cultural elements, which are interlinked individually and collectively in myriad ways.

The environment comprises of all the biotic, abiotic, natural, and human components defining the form and survival of each in a given system at a given time or over a period of time. Besides, Josh (2015) explicates that, the environment is the total of conditions that surrounds us at a given point of time and space. Thus, the environment is the total of conditions in which an organism has to survive or maintain its life process, and influences the growth and development of a living organism. In other words, the environment refers to those surroundings that surround living beings from all sides and affect their lives altogether. The natural environment consists of four interlinking systems namely, the atmosphere, hydrosphere, lithosphere, and biosphere. The lithosphere which refers to all of the rocks of the earth, including the planet's mantle and crust (the two outermost layers); the hydrosphere, which is composed of all of the water on or near the planet's surface. This includes oceans, rivers, and lakes, as well as underground aquifers and the moisture in the atmosphere (Rosenberg, 2017).

The atmosphere is the body of gasses that surrounds our planet, held in place by earth's gravity, and the biosphere is composed of all living organisms: plants, animals and one-celled organisms alike (Rosenberg, 2017). All four spheres can be and often are present in a single location. For example, a piece of soil will contain minerals from the lithosphere. Additionally, there will be elements of the hydrosphere present as moisture within the soil, the biosphere as insects and plants, and even the atmosphere as pockets of air between soil pieces. The complete system is what makes up life as we know it on Earth (Rosenberg, 2017) Again, these four systems are in constant change and such changes are affected by human activities and vice versa (Kumarasamy et al., 2004).

2.2.2 Sanitation

Sanitation is defined as "the provision of facilities and services for the safe disposal of human urine and faeces (Water for South Sudan, WFSS, 2016). Sanitation (from the Latin sanitas, meaning health) refers to the maintenance and delivery of clean, hygienic conditions that help prevent disease through services such as drinking water supply, garbage collection, and safe disposal of human waste. It also refers to the hygienic means of promoting health through prevention of human contact with the hazards of wastes as well as the treatment and proper disposal of sewage wastewater. According to the U.S. National Library of Medicine sanitation is the development and establishment of environmental conditions favourable to the health of the public. Sanitation includes the appropriate disposal of human and industrial wastes and the protection of the water sources (Robson, 2020). WaterAid (2011) provides two meanings two sanitation, explaining that, in the narrow sense, sanitation refers to the safe disposal or re-use of human excreta, and in the broad sense, sanitation is the management of excreta, together with solid waste and stormwater management. WaterAid (2011) furthers that, in the wider context, sanitation includes not only physical systems but also the policies, legal and management frameworks and investments necessary to achieve hygiene and good health for all.

WFSS (2016) opines that, sanitation is important for all, because, it helps in maintaining good health and increase life-spans. Affirming this, Naughton, and Mihelcic (2017) explain that, sanitation is one of the most important aspects of community well-being because it protects human health, extends life spans, and is documented to provide benefits to the economy. Sanitation (e.g. toilets, latrines, mechanized wastewater treatment) is currently deployed as a way to contain and/or treat human excreta (and in some cases grey water) to protect human health and the environment (Naughton, and Mihelcic, 2017). The World Bank (2020) notes

that, improved sanitation leads to lower disease burden, improved nutrition, reduced stunting, improved quality of life, increased attendance of girls at school, healthier living environments, better environmental stewardship, increased job opportunities and wages, improved competitiveness of cities, and economic and social gains to society more broadly. More so, recent analysis by the World Bank (2020) shows that, ending open defecation can save children's lives by reducing disease transmission, stunting, and under-nutrition, which are important for childhood cognitive development and future economic productivity. As such, without adequate sanitation facilities, girls are more likely to drop out of school or are vulnerable to attacks while seeking privacy (World Bank, 2020).

Conversely, lack of sanitation also holds back economic growth, with the World Bank (2020) estimating that, poor sanitation costs billions to some countries, amounting to the equivalent of 6.3 per cent of Gross Domestic Product (GDP) in Bangladesh (2007), 6.4 per cent of GDP in India (2006), 7.2 per cent of GDP in Cambodia (2005), 2.4 per cent of GDP in Niger (2012), and 3.9 per cent of GDP in Pakistan (2006). The economic losses are mainly driven by premature deaths, the cost of health care treatment, lost time and productivity seeking treatment, and lost time and productivity finding access to sanitation facilities. Pollution resulting from improper disposal and treatment of wastewater and domestic faecal sludge also affects both water resources and ecosystems. At the same time, faecal sludge and wastewater can provide valuable resources (water, nutrients, soil conditioner, briquettes and energy) and economic opportunities, especially in urban areas and in water-scarce environments. The expositions above underscore the need to provide the requisite human, material and financial resources in ensuring good sanitary conditions for all in every country to improve human life and aid development.

2.2.3 Environmental Sanitation

Environmental Sanitation is (a) the promotion of hygiene and, (b) the prevention of disease and other consequences of ill-health, relating to environmental factors (WHO, 2020). Environmental Sanitation covers two basic dimensions: environmental factors, which are environmental factors which impact on the infectious agents and transmission of disease. These include environmental factors: disposal of human excreta, sewage, household waste and other waste likely to contain infectious agents, water drainage, domestic water supply, and housing. The second dimension is sanitation practices, which are various hygienic practices of the communities, basic knowledge, skills and human behaviours as well as social and cultural factors concerning health, life-styles and environmental awareness. These include: Personal hygiene (washing, dressing, and eating), Household cleanliness (kitchen, bathroom and cleanliness), Community cleanliness (waste collection, and common places), environmental sanitation strongly depends on social and cultural practices and beliefs and these have to be considered when planning interventions.

Environmental sanitation comprises the disposal and treatment of human excreta, solid waste and wastewater, control of disease vectors, and provision of washing facilities for personal and domestic hygiene which work together to form a hygienic environment (Schertenleib, 2005). Environmental sanitation practices refer to residents' involvement in provision, utilization, and maintenance of environmental sanitation facilities and services and adherence to environmental legislation (Daramola, 2015). Adding to this, the Water Supply and Sanitation Collaborative Council have defined it as "Interventions to reduce people's exposure to disease by providing a clean environment in which to live, with measures to break the cycle of disease". In the view of Mmom et al., (2011), environmental sanitation comprises both a change in behaviour and facilities to form a hygienic environment.

To this end, Olowoporoku (2013) has underscored that, improved environmental condition affects positively a wide range of development indicators. Thus, environmental sanitation is a channel to improved quality of life of the individuals and a contributor to their social, economic and physical development. Again, numerous studies have shown that the incidence of many diseases is reduced when people have access to, and make regular use of adequate sanitary installations (Aremu, 2012; Mohammed 2011; Mmon and Mmon 2011; Nwankwo, 2011; Luthi, 2012; Acheampong, 2010; FMHE 2009; Harvey, 2008; WHO and UNICEF, 2008; Amadi and Iwuala, 2005; FRN, 2005; WHO, 2005; Mensah, 2002).

2.2.2 Environmental Sanitation Management

Considering all the components of environment, sanitation and management, one can deduce a definition of environmental sanitation management as the process of allocating resources to ensure a hygienic environment through service and infrastructure provision and proper disposal of waste (Acheampong, 2010). Environmental Sanitation Management means addressing the issue of environmental sanitation through an "integrated life-cycle approach," which involves strong controls from the generation of a hazardous waste to its storage, transport, treatment, reuse, recycling, recovery and final disposal. Thus, environmental sanitation management involves all the processes of handling waste of all forms, from its generation to its re-use or production, to improve health and human life. A large body of literature (Adubofour, 2010; Mensah, 2019; Mosler et al., 2018; Musoke et al., 2016; Santaboni, 2018; Whitley et al., 2019) suggests that the main conceptual issues in environmental sanitation management relate to stakeholders using various strategies and frameworks relating to environmental education, regulation and infrastructure for purposes of improving environmental sanitation. Mensah (2019) is of the view that, the key concepts distilled from explanation provided by Adubofour (2010); Mensah (2019); Mosler et al (2018); Musoke et al (2016); Santaboni (2018); Whitley

et al (2019) are; stakeholders, environmental education, regulation, infrastructure management, and frameworks, which cumulatively result in effective environmental sanitation management.

2.3 Empirical Review

2.3.1 Overview of the state of Environmental Sanitation Management in developing countries

In developing countries, about 80 per cent of illnesses are linked to poor water and sanitation conditions, with children being especially vulnerable (The Water Project, 2020). Furthermore, one out of every five deaths under the age of five worldwide is due to a water-related disease (The Water Project, 2020). However, water-related efforts in the developing world are often balkanised and not sufficiently integrated to ensure sustainable water services, inhibiting efforts to achieving access to clean and safe water by many, especially in developing countries. Snel and Smet (2006) point out that, it is now becoming evident that the most effective intervention against water and sanitation-related diseases is safe excreta disposal, particularly in low-income urban areas and densely populated rural areas, where the focus of environmental sanitation also includes solid waste management and storm water and wastewater disposal, which implies that, with increased effort in water and sanitation management the situation would change. Nevertheless, WaterAid (2019) remark that, inadequate sanitation is a leading cause of poverty in developing countries, largely because it causes premature mortality (with an estimated 1,800 child deaths per day due to unsafe water, sanitation and hygiene) and other impacts on health. The International Water Association (2019) also point out that, sanitation and water management in developing countries encompasses water supply and sanitation services and their interrelation with river basin management. Nonetheless, inefficient water management and lack of sanitation services are well known to be major challenges in most developing countries across Latin America, Africa and Asia. Despite immense efforts over the

last decade to improve the access to sustainable wastewater management and sanitation solutions in developing countries the situation is still grim and has hardly improved (International Water Association, 2019).

In sub-Saharan Africa for instance, 44 per cent of the population uses either shared or unimproved facilities, with an estimated 26 per cent practicing open defecation, while in Southern Asia, the proportion of the population using shared or unimproved facilities has declined to 18 per cent but open defecation remains the highest of any region 39 per cent (Fast Facts JMP,2013), a worry for fight for improved sanitation. Palfreman (2017) argues that, an explosion in urban migration and unplanned settlement, as well as a lack of urban planning to accommodate basic utility support infrastructure and services, has resulted in widespread environmental contamination and a very costly clean-up operation in most developing countries, particularly in sub-Saharan African cities. Palfreman (2017) furthers that, as little as 41 per cent of solid waste is collected in sub-Saharan African cities and 18 of the world's 50 worst dump sites are in Africa, making sanitation a major challenge in these region, with inadequate sanitation management solutions.

Again, Africa's urbanization processes are seen as both a challenge and an opportunity for sustainable development (Manteaw and Boachie, 2019). Manteaw and Boachie (2019) provides more information on the issue, explaining that, while these processes unfold differently in diverse countries across the continent, it has become increasingly apparent that surge urbanization, population growth and the lack of effective planning for an efficient waste management system have brought in its wake other challenges that have significant implications for public health and sustainable development. Likewise, a Mercer Quality of Living Survey City Sanitation rankings 2018 saw most African cities occupy the bottom

positions in the City Sanitation Rankings. In the report, 15 African cities, including Accra (Ghana), Abuja (Nigeria), Dar Es Salaam (Tanzania), Addis Ababa (Ethiopia), and Harare Zimbabwe were among the least ranked cities with respect to sanitation.

In Nigeria for example, Daramola and Olowoporoku (2016) have noted that adequate environmental sanitation practices have not been ensured. They are characterized by a lack of basic amenities and poor sanitation habits (Ademiluyi and Odugbesan 2008; Afon, 2006). Also, general access to environmental sanitation facilities and services by citizens remains very poor (Akpabio, 2012). Similarly, Issah (2018) acknowledges that, although urban sanitation access usually far exceeds rural access, it is widely known that the poor, unplanned, densely populated areas such as the communities of Gumbihini, Kukuo, and Vitting in Northern Ghana, are badly underserved. Their household density further, compounds the risk of contamination than sparsely populated rural areas. This is compounded by limited sanitation options and high demand is made worse by poverty and limited space, creating a major environmental sanitation challenge in these communities (Issah, 2018).

The above expositions paint a picture of the state of sanitation in many developing countries, indicating that, there is more to be desired in terms of having good sanitary conditions and an environment devoid of insanitary conditions in these regions. As noted by (Abalo et al, 2018) that, with increasing population growth resulting in urban sprawl, land availability and access have become a critical issue in urban waste management in most of Africa. Looking into the future, urban development urgently requires a sustainable environmental sanitation management solution, predominantly in developing countries.

2.3.2 Challenges that confront Environmental Sanitation Management in developing countries

According to Palfreman (2017), it is worthy of note that, by 2025, waste generation is expected to double, globally, with developing countries being no exemption. The United Nations Department of Economic and Social Affairs also predicts that between 2014 and 2050, the global urban population will rise from 3.9 billion to 6.4 billion, and that approximately 90 per cent of this population boom will take place in Asia and Africa, both of which as characterised as developing countries (Palfreman, 2017). Urbanization and development are directly linked to waste generation. At the start of the 20th century, the less than 15 percent of the global population residing in urban areas (some 220 million people) cumulatively produced less than 300,000 tons of waste per day. By the start of the second millennium this figure had grown tenfold, with 2.9 billion urbanites (49 per cent of the global populace) generating three million tons.

Perhaps, more worrying, however, are projections for "peak waste" - the time the world can expect waste generation to plateau (Palfreman, 2017). The Organisation for Economic Co-operation and Development (OECD) projects that, OECD nations will reach "peak waste" by 2050 and that nations in Asia and the Pacific will follow around 2075. In sub-Saharan Africa, however - the continent with the lowest proportion of urbanites, but highest urban growth rates - peak waste will not be reached until after the start of the next century (Palfreman, 2017). Aside from contravening key principles of Sustainable Development Goal 12, which commits to ensuring sustainable consumption and production patterns, booming waste generation will have direct impacts on water, sanitation, and hygiene (WASH), which requires prudent and urgent environmental sanitation management to avert any associated calamities of urbanisation and its attendant sanitation disasters. The implication is that, life-supporting systems of the bio-

sphere are being threatened due to deforestation, destruction of habitats, overuse of energy resources and environmental pollution (Ramachandra and Nagarathna2005).

Sanitation is the cause of many other development challenges, as poor sanitation impacts public health, education, and the environment, and other economic activities. Against this background, the Sustainable Development Goal target 6.2 calls for adequate and equitable sanitation for all (WHO, 2019). The target is tracked with the indicator of "safely managed sanitation services," such as the use of an improved type of sanitation facility that is not shared with other households and from which the excreta produced are either safely treated on site, or transported and treated off-site (WHO, 2019). The challenge is that, poor sanitation and the consequent poor management of sanitation services and practice is linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid and polio and exacerbates stunting (WHO, 2019). Moreover, WHO (2019) highlights that, poor sanitation reduces human well-being, social and economic development due to impacts such as anxiety, risk of sexual assault, and lost educational opportunities, and also contributes to malnutrition.

Contrariwise, the benefits of improved sanitation extend well beyond reducing the risk of just diarrhoea. The other benefits of improved sanitation include, reduction in the spread of intestinal worms, schistosomiasis and trachoma (which are neglected tropical diseases that cause suffering for millions), and the reduction the severity and impact of malnutrition (WHO, 2019). Also, improved sanitation results in the promotion of dignity and boosting safety, particularly among women and girls, promotion of school attendance among girls through the provision of separate sanitary facilities; and potential recovery of water, renewable energy and nutrients from faecal waste (WHO, 2019).

One challenge that has been identified as a barrier to environmental sanitation management in developing countries is lack of information. Tearfund (2007) notes that, environmental sanitation management problems may be caused in many developing countries by lack of recent, reliable information on the condition of existing sanitation and hygiene infrastructure, including whether or not it is actually functioning. Adding that, official statistics on sanitation coverage are often inconsistent or even hopelessly inflated. It is observed in many developing countries that, often times, lack of information hinders the achievement of environmental sanitation management goals and programmes, particularly, implementation of such programmes and activities. This is mostly borne out of the lack of awareness by the people, as a result of lack of information. It is that, sometimes, the people do not have access to such information because of the medium which carries the information or lack of understanding of hygiene and environmental sanitation other considerations.

One case in point is drawn from Ethiopia, where the Open University (2016) noted that, many people in have limited knowledge and understanding of the good hygiene practices that reduce the health risks from poor sanitation and waste management. The Health Extension Programme (HEP) was established by the Ethiopian government in 2004 to address this problem within the broader aim of creating a healthy society and providing accessible health care at community level. Initially the HEP focused on rural communities but this has since been extended to pastoral areas and, in 2010, to urban communities. An important part of the programme is to improve hygiene and environmental sanitation and give people information about good health and hygiene practices (Federal Ministry of Health, 2007). Creating a healthy society also depends on improvements to sanitation and waste management and as an urban WASH worker you will be supporting this activity.

Another limiting factor commonly evoked with respect to environmental sanitation management in developing countries is lack of financial resources and investment. Both water and sanitation have been losing out to other sectoral interests in the competition for scarce public funds. For example, in a 2003–2004 survey of Poverty Reduction Strategy Papers (PRSPs) and budget allocations in three countries in sub-Saharan Africa (ODI 2002; ODI 2004a), other 'social' sectors, such as education and health, attracted much larger budgetary allocations than water, and sanitation was especially under-funded. It prompts the question as to whether the political will exists to increase budget priority of sanitation (Tearfund, 2007). The United Nations Population Fund, (UNFPA, 2007) recognises that, the world's cities continue to experience population growth at a rate that far exceeds their absorptive capacity in terms of conventional sanitation infrastructure and environmental protection. This situation is compounded by the inability of governmental agencies to meet the corresponding waste generation associated with population growth through the provision of basic environmental services (Tukahirwa, Mol, and Oosterveer, 2010).

Underscoring the essence of adequate financing in dealing with the barrier associated with environmental sanitation management in developing countries, the medium-term national development policy framework: Ghana shared growth and development agenda (GSGDA), 2010-2013 stated that, to ensure a sustainable, predictable and adequate financing, economic water charges should be maintained (GoG, 2010). It added that, a Sanitation and Water for All (SWA) compact project should be implemented and timely releases of approved recurrent budget to the sector should be pursued. Other non-traditional sources of funding should also be identified and pursued white capacity building should be provided as a continuous process (William, 2002). Antwi-Agyei, Dwumfour-Asare, Adjei, Kweyu and Simiyu (2020) reckons that, underfunded shared sanitation could deprive most people access to this sanitation option,

which may be the only alternative for crowded and low-income urban areas, serving to reduce and/or eliminate open defaecation (Heijnen, Cumming, Peletz, Chan, Brown, Baker, and Clasen) and prevent most countries in the developing world from meeting the targets in the SDG. A WHO (2004) report, "The Sanitation Challenge: Turning Commitment into Reality" made a spotlight by observing that, improving access to sanitation and changing hygiene behaviours provide large benefits to all members of society that justify the preferential use of financial resources by individuals, households, communities, governments and external agencies to fund sanitation and hygiene interventions.

It therefore, recommended that, countries with poor coverage, including developing countries have to focus on increasing access to funds to promote the course of environmental sanitation management. This can be leveraged by steering public funding towards stimulating demand for sanitation and promoting hygienic practices in schools as well as at the household level; financing public and school sanitation services; and delivering targeted subsidies where these can be demonstrated to be effective in increasing access (WHO, 2004). For example, when Tsinda, Abbott, Pedley, Charles, Adogo, Okurut, and Chenoweth (2013) studied the challenges to achieving sustainable sanitation in informal settlements, they found out that, like most cities in developing countries, the main barrier to improved environmental sanitation management in Kigali (Rwanda) was cost. Tsinda, Abbott, Pedley, Charles, Adogo, Okurut, and Chenoweth (2013) found that, most of the people in this developing country lacked the financial muscle to afford putting up modernised structures for effective environmental sanitation management practices, a situation which is no different in many other developing countries. Also, The WHO (2007) identified that, lack of investment was a major contributing factor that underpin the slow progress in ensuring sustained increase in access to water and sanitation, and by extension, environmental sanitation management, among the water-poor regions in Sub-Saharan Africa,

a developing region. WHO (2007) mentioned that, investments in the water subsector lagged behind population increase; and the intended outcome of improved access to potable water and sanitation in terms of improvements in health were not realised, partly due to the failure to maintain the facilities. Against this background, it was recommended, noted that, the best way to address the factors which inhibit improved environmental sanitation is to augment investments in the water and sanitation subsector to respond to the ever-increasing population in Sub-Saharan Africa and developing countries at large.

The reality in many locations in Africa and developing countries is that, there is limited choice of sanitation and hygiene providers, whether agencies of local government, community associations, NGOs or private suppliers. In cities in some developing countries, empirical studies have highlighted the activities of small private suppliers (e.g. Collingnon and Vézina, undated; WSP 2005). In relation to sanitation, these include, for example, bricklayers (or 'masons') for latrine construction and people to empty pits manually (Tearfund, 2007). There are still some doubts as to slum populations' willingness to pay, but the significance of the role of small private providers in meeting the needs of poor populations is now more widely recognised, where they can offer the right product for the right price (Tearfund, 2007). What is 'affordable' is very context-specific, and among poor communities' affordability may be a persuasive limiting factor on uptake of new sanitation facilities, such as latrines. The decision to install home sanitation for the first time can be a big one and often involves changing [other] household-related infrastructure (Jenkins and Sugden 2006).

The situation of the urban poor poses a growing challenge as they live increasingly in megacities where sewerage is precarious or non-existent and space for toilets and removal of waste is at a premium. Inequalities in access are compounded when sewage removed from

wealthier households is discharged into storm drains, waterways or landfills, polluting poor residential areas (WHO, 2020). Oyedele (2016), opine that, one of the greatest challenges of developing nations is their waste management, in that, developing nations are characterized with filth scattered all over the cities. This situation, Oyedele (2016) bemoans that, it remains a challenge in most developing countries, despite the socio-economic and health implications of living in such conditions. Urban solid wastes are the discarded domestic solid materials generally found in the cities, including glasses, papers, food items, tyres, metals, clothes and leathers. These are ubiquitous in developing countries because developing countries lack the management capacity to eradicate waste in their environment (Oyedele, 2016).

The overall goal of urban solid waste management is to gather, arrange, treat and discard solid wastes created by activities in urban areas in an environmentally and socially satisfactory manner using the most economical means available, nonetheless, this has been a mirage in developing nations World Bank (2015). Oyedele (2016) largely attributes this situation to activities of polluters, and their unwillingness in ending the menace. The polluters are tremendously uncooperative in being part of the environmental and social waste management process (Oyedele, 2016), thereby, impeding the realisation of solid waste management, and by extension, the goal of environment sanitation management.

Again, throughout the world, the challenges of providing access to safe water and sanitation are further accentuated by increasing demands from other water uses due to a variety of factors, such as population increase, agricultural water needs for food production, rapid urbanisation, degradation of water quality, and increasing uncertainty about water availability, potentially exacerbated due to climate change (OECD, 2011). But, in most developing countries the "access gap," regarding the provision of environmental sanitation management facilities are a

major source of concern, and continually, a challenge. Oyedele (2016) also posits that, waste dumps or landfills management in most developing countries are depriving, as dumps and landfills become environmental problems and eyesores. It is better in developed nations unlike in developing nations.

This is because developing nations lack institutional and legal framework to manage urban waste, leading to disposal centres being sited in green zones with buffer around them so that they are hidden from the sights of people. Not only that, often times, issues of environmental sanitation are buried in the woods, neglecting the health and social-economic implications of waste dumps and landfills on neighbours. This is compounded by the problem of transferring waste from point of collection to point of disposal. This is because of the long distance of the collection centres to the disposal point, coupled with bad roads which are of great challenge to waste management, and environmental sanitation management in general, in developing nations. Oyedele (2016) furthers that, this is the cause of having many abandoned vehicles along the corridor of waste dumps and/or in the areas where wastes are being collected in developing nations.

Meanwhile, OECD (2011) has observed that, water and sanitation services generate substantial benefits for human health, the environment, and the economy as a whole. Therefore, access to clean drinking water and sanitation facilities would reduce health risks and free up time for education and other productive activities, as well as increase in the productivity of the labour force. More so, safe wastewater disposal helps to improve the quality of surface waters with benefits for the environment (e.g. functioning of ecosystems, biodiversity), as well as for economic sectors that depend on water as a resource (e.g. fishing, agriculture, tourism). The OECD (2011) argues that, such benefits usually outstrip the costs of service provision and

provide a strong basis for investing in the sector. For example, in developing countries, WHO has estimated that almost 10% of the global burden of disease could be prevented through water, sanitation and hygiene interventions. Health benefits are only a small portion of overall benefits, however. WHO estimated that meeting the water and sanitation Millennium Development Goals (MDGs) could generate about USD 84 billion per year in benefits, with a benefit to cost ratio of 7 to 1. Of those benefits, three quarters would stem from time gains, the rest being driven by reductions in water-related diseases (OECD, 2011).

Though poor urban sanitation issue continues to be difficult for policy-makers, and presents great challenge in the development of integrated solutions for managing a variety of waste streams (Tilley, Atwater, and Mavinic, 2008), most of the interventions undertaken to reduce this canker are often implemented without consultation or participation of stakeholders and beneficiaries (Eawag, 2005; Rosemarin et al., 2008). According to Abalo (2017), investment in technical facilities by government alone is not enough to meeting the challenge of providing adequate sanitation services in communities, consequently, a community participatory module towards environmental sanitation management is very crucial. Thus, involving communities in the operation and maintenance of environmental sanitation facilities is important, as it is noted to be a cost-effective means of ensuring sustainable provision of water to rural communities, as pertained in many developing countries. In order for solid waste and other waste that contributes to poor environmental sanitation management project to be successfully developed and implemented, community participation in the collection of waste, consultation on cost recovery, and participation in siting and designing of waste facilities is inherently essential to environmental sanitation sustainability (Oyedele, 2016).

Sector agencies and community management structures should be given the needed capacity to enable them to manage water resources and environmental sanitation facilities better at the various levels of the communities. Also, the World Bank and other development partners in recent years have increased their focus on community participation and are supporting initiatives that would increase access of the poor to basic social and economic infrastructure and services, and empower communities through participation in the selection, implementation, and operation and maintenance of development projects, with same gesture being needed in environmental sanitation management. According to Mazango and Munjeri (2009) that community-based management systems can improve efficiency, meet the target of the project within planned budget and enhance sustainability of rural water management. Tadesse et al (2013) support this, by intimating that, full community participation promotes a proactive process in which the beneficiaries influence the development and management of development projects rather than merely receiving a share of project benefits.

Osumanu (2010) shares similar view, noting that, active involvement of the user community in the planning and provision of such services could contribute to greater equity and financial viability and would, in turn, attract greater private sector participation in the sector. Sanitation and its attendant services, such as water supply and collection of waste of all forms to their various destinations in developing countries face a number of challenges, making it difficult for these developing countries to meet the Millennium Development Goals. The world population has increased by an average annual rate of 1.3 per cent since 1990 and continues to escalate virtually, every annual. In addition to this, urbanisation around the world increased from 43 percent in 1990 to 51 percent in 2010 and the rising trend is expected to continue (Nhapi, 2015). This urbanisation, which is highest in developing countries, As the global economy grows, developing countries all over the world are urbanizing at an alarming rate

(Acheampong, 2010). This urbanisation, the highest in many developing countries has led to the mushrooming of informal settlements where water supply and sanitation services are virtually non-existent and waterborne diseases are prevalent (Nhapi, 2015). Although urbanization is the driving force for modernization, economic growth and development, there is increasing concern about the effects of expanding cities, principally on human health, livelihoods and the environment (Acheampong, 2010).

Rural dwellers and the urban poor feel the lack of safe water and proper sanitation in the developing world the most. With few medical resources at their disposal, the poor are particularly vulnerable to chronic illnesses that hinder their productivity, making the escape from poverty even more difficult (The Water Project, 2020). Correspondingly, Owusu (2010) makes a point that, in many cities of developing countries, rapid urban growth has far outpaced metropolitan and municipal authorities' capacity to provide basic services including adequate sanitation. The scene in most places in these developing countries, especially poor neighbourhoods, Owusu (2010) argues, is one of overflowing garbage containers (even if there is one) in which animals and residents rummage through, indiscriminate waste disposal, overcrowded toilet facilities, choked drains, and a general sense of unkempt environment.

The nature of environmental problems and, therefore, sanitation challenges, in cities changes with levels of economic development. It argues further that, in cities of poor countries (mostly, developing countries), sanitation-health threatening challenges are found in the immediate environs of homes, neighbourhoods and workplaces. These challenges include inadequate water supply and sanitation facilities, poor and overcrowded housing, smoky kitchens, insect infestation, contaminated food, piles of uncollected garbage and poor drainage (McGranahan and Songsore 1994, Songsore 2004). Owusu (2010) advances that, as countries develop and

move into the middle-income category, neighbourhood and home challenges reduce in importance, and the emergence of city-wide challenges such as ambient air pollution and river pollution predominate. At an advanced stage of development (high-income status), cities in these countries are able to address both neighbourhood/home and city-wide environmental changes.

Although cities in the wealthy nations use far more resources, they are also able to use part of the wealth to avoid personal exposure to unpleasant and hazardous pollutants at both the neighbourhood/home and city-wide levels. This means that, as countries grow into modern cities with structures, including contemporary environmental sanitation management infrastructure and its related facilities and regulations, so do such cities overcome the issues of sanitation. The reverse is true for communities which experiences rapid growth in urbanisation, especially, growth in population, where the problem of sanitation would deteriorate as a result of lack of environmental sanitation management facilities and regulations. Therefore, it is important for countries, specifically, developing countries to devote human, financial and other resources to provide to meet the growth and development associated with urbanisation, and its resultant sanitation issues.

The implication of the challenges enumerated concerning environmental sanitation management in developing countries, thus, lack of information, financial resources and investment, service providers and sanitation management facilities, urbanisation, among others, is that, it compounds the sanitation challenges in developing countries, thereby, slowing social, economic, cultural and political development. Again, it results in increase in disease infections, as it provides avenue for waste creation and filth, a breeding grounds for flies and other insects to feed on, and unsafe water to drink, wash with or swim in. Among human

parasitic diseases, schistosomiasis (sometimes called bilharziasis) ranks second behind malaria in terms of socio-economic and public health importance in tropical and subtropical areas. The disease is endemic in many developing countries, infecting more than 200 million people. Of these, 20 million suffer severe consequences from the disease (WHO and UNICEF, 2008).

Hence, sound environmental sanitation management and appropriate interventions are key in promoting behavioural change and better sanitation practises among people. Poor environmental sanitation or hygiene also has tremendous economic costs; the health impact of inadequate environmental sanitation leads to a number of financial and economic costs including direct medical costs associated with treating sanitation related illnesses and lost income through reduced or loss in productivity, as well as the costs of providing health services by government. Likewise, poor sanitation also leads to reduced income from tourism (due to high risk of contamination and disease) and clean-up costs. A World Bank country environmental analysis conducted in Ghana has shown that health cost resulting from poor water, sanitation and hygiene is equivalent to 2.1 per cent of annual GDP (UNICEF, 2008).

2.3.3 The role of Communication in Environmental Sanitation Management

In order to achieve proper environmental sanitation practices, good sanitation behaviour and availability of facilities and services must work in unison (Mmom and Mmom, 2011; International Research Council, IRC, 2006; World Bank, 2002). As it is in other environmental management activities and environmental sanitation practices are influenced by various factors (Willuweit, 2009; Owens, Dickerson and Macintos, 2000; Owoeye and Adedeji, 2003; Vicente and Reis, 2008). These factors include social, economic and demographic attributes, such as age, income, gender, education, household structure; situational conditions. Others include level of information, religious participation, enabling law and place of residence. Meanwhile,

adequate environmental sanitation practices, including, communication, are more than just an important. convenience. These environmental sanitation practices, more particular, communication, enables users to have knowledge and experience to the help in the design and management of facilities and services and to increase the likelihood that the services will be used sustainably, especially, at the local level.

Environmental sanitation strongly depends on social and cultural practices and beliefs and these have to be considered when planning interventions. To allow for transmission of infectious agents they have to be present in the immediate human environment, exposure has to take place, and such transmission has to occur by uptake of the agents through unsafe practices. To interrupt the transmission, environmental sanitation can act on reducing exposure to infectious agents by limiting contact to wastes or polluted agents, and by changing hygiene and socio-cultural practices (WHO, 2020). An equally important strategy will be the promotion of change behaviour in relation to ensuring open defecation-free communities. Other strategies include the promotion of handwashing with soap at critical times, promoting hygienic use of water at the household level and promotion of hygienic excreta disposal methods, (Georgej 2002), all of these activities are dependent on communicating, whatever information it is to the people through a certain medium.

Owing to this, Sobnosky (2001) sees communication as the glue that holds together the elements of an environmental sanitation management system, and it is so crucial that, systems for implementing environmental sanitation activities must a significant amount of attention to communication to ensure the success of the entire programme. With this anecdote, the subsequent paragraphs would examine the role of communication, herein, referred to as, environmental communication, in environmental sanitation management.

One key role played by communication in environmental sanitation management is that, it provides the nexus for engagement among various stakeholders. Communication systems are often necessary to fill the gaps, by providing pathways, content, and tools for environmental sanitation management purposes. Communication is a continuous thread that touches and connects all the other elements of an environmental sanitation management system, and ensures that the system functions as intended. For example, environmental communication through the mass media as a development issue that could serve as a connective tissue, linking the various efforts of development or parts to make it a whole. As held by Rogers and Rogers (Aro, 2015, cited in Kaba, 2002), communication by itself touches every sphere of human activity, shaping all human actions, because of the need for constant interaction.

Communication thus, provides a platform where stakeholders elicit views on organisations, programmes and projects and also share ideas on effective and efficient utilisation of resources for environmental sanitation management. As public participation continues to grow and embedded in local and national discourse, including sanitation and public health, so as it become even more expedient for stakeholders to engage in interactions, so, as to understand each other and ways to support each other in environmental sanitation management.

Aside that, communication supports sanitation education and attitudinal change. Hygiene and sanitation education including mass media campaigns, comprising, information, education and communication, are catalysts for raising knowledge on health, disease transmission and the benefits of good hygiene and sanitation, provides support for other promotional activities, and also helps in reaching large population groups and in a cost-effective manner, especially through mass communication channels (WaterAid, 2011). As such, plastic litter menace, for

example, would be a double agony if environmental communication through the mass media and environmental consciousness on littering and indiscriminate disposal of waste by individuals is not made a priority (Zanoo, 2017). Environmental consciousness can broadly be defined as the acquisition of knowledge about environmental problems or issues that translate into attitudinal changes and subsequently results in a tendency to act positively towards the environment (Kwansah-Aidoo, 2004).

In other words, an individual who is said to be environmentally conscious would possess a body of knowledge of specific environmental problems. The individual will be awakened by that knowledge to act appropriately in concrete situations in demonstration of a desirable way of relating to those problems that crystallises into positive attitudes towards the environment. Such appropriate behaviour would therefore, represent affective dimension of environmental consciousness (Rannikko, 1996; Kwansah-Aidoo, 2004). In the domain of environmental issues, environmental education plays a key role in sensitizing people on the need and significance of programs carried out to address environmental problems confronting them. As noted by Dartey (2011), that the mass media holds the key to influence attitudinal and behavioural change of people, particularly on the environment through conscious sensitisation and education. Communication and development has been viewed as closely intertwined phenomena, where one is believed to guarantee the other (Servaes, 2008).

Another role of communication is environmental sanitation management is that, it provides the nexus for human interaction about sanitation issues, thereby, creating a public sphere where concerns about the environment are raised and discussed. This then forms the foundation for policy discussion among think-tanks, environmental concerned organisations, as well as policy makers, and all relevant stakeholders in the environmental sanitation management sphere.

According to Carbaugh (2007), communication mediates the relations between people and nature, affirming such process as powerful sources of knowledge. Since human communication is a form of symbolic action where beliefs, attitudes, and behaviours relating to nature and environmental problems are mediated by communication, then the public sphere emerges as a discursive space for communication about the environment (Cox, 2010).

Milstein (2009) also writes that, communicating about the environment is embedded within social systems and within the power that is negotiated within these systems. Meisner (2009) points out that, although, there are other forms of communications; environmental communication is both an activity or phenomenon and a field of study. He argues further that environmental communication is the various forms of interpersonal, group, public, organisational and mass communication that make up the social discussion or debate about environmental issues and problems, which could be referred to as "environmental discourse." Similarly, Hansen (2010) states that, media discourses help to shape and set the parameters of discussion and understanding of environmental issues and for resulting social and policy responses. For Okae-Kissiedu (2004), the frequent reportage (communication) of environmental issues creates awareness and also pushes the environment for discussion on the public agenda, makes the issue of the environment alive and also legitimises the importance of environmental issues.

Equally, communication about environmental sanitation management also provides an avenue for development. In that, the successful management and conservation of the environment in any country for sustainable development depends to a large extent on the effective integration of environmental communication into development programmes at both micro and macro levels. Communication and development has been viewed as closely intertwined phenomena,

where one is believed to guarantee the other (Servaes, 2008). Kwansah-Aidoo (2004) asserts that some countries in Africa such as Morocco, Tunisia and Egypt seem to be succeeding in their development efforts because they have integrated environmental communication into their development plans. argue that there is a direct link between environmental consciousness and socio-economic development, on the basis that negative environmental behaviour is anathema to socio-economic development. This is so, because, Kwansah-Aidoo (2004) explains that, when people engage in undesirable environmental behaviour such as littering and bush burning, such behaviour can be seen as conceptually and practically damaging to the development agenda and therefore discouraging to overall socio-economic development.

Also, Kwansah-Aidoo (2004) maintains that, communication is a key ingredient in engendering environmental consciousness and trying to get people to act in ways that will not harm the environment, and be encouraging of development-related activities (Kwansah-Aidoo, 2004). In summary, effective communication, therefore, enhances participation of community members towards the achievement of the goals of the rural community development. Nevertheless, communication strategies and methods that accommodate the requirements of enhancing knowledge, critical skills, collectivity, and empowerment should be characterized by people-, community-, and livelihood-centered objectives and approaches, rather than an economy- and technology-centered focus. These strategies would need to be designed and implemented in such a way that they allow for global perspectives, local involvement, dialogue, and provision of tailored solutions. This implies that, communication which is geared towards development should not be a top-to-down approach, but one that considers the beneficiaries or users of the information being communicated to, while, they are also allowed in the communication process. As said by van de Fliert (2014) that, participatory communication gives voice to stakeholders to express their perspectives and needs, and negotiate complex

issues. It can also provide the platform for collective decision making and action, and it reinforces individual or group confidence underlying empowerment.

The literature reviewed on the role of communication in environmental sanitation management, as revealed that, communication is essential in environmental sanitation management in diverse ways. One of such roles is that, communication provides in the designing and implementation of various programmes, policies, and activities among various players within the environmental sanitation management value chain. Also, communication supports the efforts of sanitation education to achieve the needed attitudinal change for improved and sustainable environmental sanitation management practices, and helps in the discussion on and related to sanitation in a public sphere. Most importantly, a revelation from the literature reviewed on the role of communication in environmental sanitation management is that it provides critical support to sustainable development.

CHAPTER THREE

METHOOLOGY

3.1 Introduction

This chapter of the study is the methodology section, and thus, provides a framework of the research approach and methods that would be applied in the study with respect to data gathering and analysis, including; research design, sampling, and sampling technique, and data analysis process. According to Neuman (2011), a research methodology refers to the understanding of the entire research process, while, research method refers to the collection of specific techniques which is used to a study to select cases, measure and observe social life, gather and refine data, analyse data, and report on results. Kothari (2004) adds that research methodology is a way to systematically solve the research problem, where, researchers study and provide the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. On the other hand, Kothari (2004) explains that the research method refers to the techniques or steps the researcher uses in performing research operations. This means that it includes all those procedures which are used by the researcher during the course of studying his research problem are termed as research methods.

3.2 Research Design

There are many designs a researcher could adopt for any study, including, explanatory, descriptive, and exploratory. However, this study would adopt an exploratory design but would exclude the gathering of field data, otherwise, known as primary data. The exclusion of field data has been compelled by the nature of the paper, which is interested in appraising existing literature on the topic under consideration. Regardless, just as is with exploratory studies, this research would also aim at gaining in-depth understanding and being abreast of the

phenomenon under consideration, that is, the role of communication in environmental sanitation management in developing countries, for later investigation. As explained by Bhasin (2019) research which is conducted with exploratory design, helps a researcher to build an understanding of the problem of the research. Exploratory research has been chosen for this paper, because, the study intends to have an in-depth appreciation of the role of communication in environmental sanitation management in developing countries, by scrutinising studies that have already engage in such an endeavour. This current study recognises that most times, researchers gather new data (which are in their raw state – primary data) to understand the current phenomenon of a problem being studied, meanwhile, the centre of focus with regards to data collection and analysis thereof would be secondary data. By so doing, this current study would adopt a qualitative research approach (method).

3.2.1 Qualitative Research Approach

Qualitative research is a systematic scientific inquiry that seeks to build a holistic, largely narrative, description to inform the researcher's understanding of a social or cultural phenomenon. To Pathak, Jena, and Kalra (2013), a qualitative approach to research helps to understand people's beliefs, experiences, attitudes, behaviour, and interactions in a study. Qualitative research is an interpretative approach, which attempts to gain insight into the specific meanings and behaviours experienced in a certain social phenomenon through the subjective experiences of the participants. Similarly, Corbin, and Strauss, A. (2008); Levitt, Motulsky, Wertz, Morrow, and Ponterotto (2017) explain that qualitative research is inductive in nature, and the researcher generally explores meanings and insights in a given situation. The qualitative research method involves the use of qualitative data, such as interview documents and observation, to understand and explain the asocial phenomenon (Relacion, 2020). Nonetheless, because this study would use secondary data, it would do a content analysis of

existing literature on the topic under study, using themes which would be deduced from the research objectives.

3.3 Sampling

Data collection is one important process in every research. Just as explained by Kapur (2018), data collection is an imperative aspect of the research study. Against this background, Kumar (2011) puts forward that, researchers are required to put into practice, appropriate data collection procedures to collect the data. There are two forms of data that researchers can collect; primary and secondary. This paper would focus on secondary data. For every research, the population is very important, this population is generally a large collection of individuals or objects (materials) which is the main focus of any scientific query, and researches are conducted principally for the interest of the population that. Nonetheless, often, reaching and gathering data from a population is a hard enterprise to embark on, especially when the population is large. The implication is that, as a result of the large sizes of populations which is characteristic of a population, researchers most times cannot test every individual in the population because it is hard to reach, too expensive, and time-consuming. So, a part of the population is selected to represent the population, known as the sample. The explanation above is accentuated by Croucher and Cronn-Mills (2015) who underscore that collecting and analyzing all the available evidence when conducting research is not always possible, thereby, making researchers resort to a sample for data collection and analysis.

This study would be limited to the collection of data to electronic literature search for eligible secondary data, mainly from published data sources using Google Search Engine, Google Scholar, Academia, Research Gate, and any relevant academic source. The published data would be collected from various publications of local and international bodies, as well as, their

subsidiary organizations, research reports are prepared by research scholars, and universities in different fields but related to the topic under consideration, books, theses, journals, websites, and public records, and historical documents. In many instances, the literature search would be done using Google Search Engine, where key phrases on the topic, particularly, the research objectives, would be searched for. Also, there would be literature search through Google Scholar, Academia, Research Gate, and any other relevant academic source, the important literature would then be downloaded for review.

3.3.1 Sampling Technique

A purposive sampling technique would be used in the gathering of data for this study. According to Croucher and Cronn-Mills (2015), purposive sampling is when the focus of the study is specific groups at the exclusion of other groups. Purposive sampling is typically used in qualitative research to identify and select the information-rich cases for the most proper utilization of available resources (Patton, 2002). Just as with the explanation above, this study would only collect data that would be relevant to the topic under study, and exclude other research materials that would have scanty information thereby, making it improbable for inclusion in the literature review and data analysis process. Such search items include, environment, sanitation, environmental sanitation, environmental sanitation management, the state of environmental sanitation management in developing countries, challenges of environmental sanitation management in developing countries, as well as the role of communication in environmental sanitation management.

3.4 Data Analysis Process

Data processing will be done by categorizing the data, coding, and summarising the secondary data, retrieved from various sources, such as books, theses, journals, websites, and public

records. Interpretation of results and drawing inferences would happen after the data have been analysed through systematic analysis of the content of the materials related, and relevant to the study. Data analysed would then be discussed thematically, using the objectives of this study as the basis, the outcome of this particular process would determine the extent to which the study objectives have been met.

CHAPTER FOUR

SUMMARY AND ANALYSIS OF KEY FINDINGS, RECOMMENDATIONS, AND CONCLUSION

4.1 Introduction

According to a joint WHO and UNICEF data, 36 percent of the world's population lack access to sanitation facilities, and about 768 million people regularly without clean drinking water. Again, the WHO and UNICEF report indicate that, inadequate access to sanitation and clean drinking water kills 4,000 vulnerable children each day, contributing to the cycle of poverty for families and communities in developing countries. Profoundly, WHO and UNICEF note that, without water, sanitation and hygiene, efficient and sustainable development is unattainable. Also, lacking access to clean drinking water and sanitation facilities means, constant weakness through diarrhoea, choosing whether to buy water or medicine, fewer resources to grow crops, and essentially, not being able to support one's own livelihood.

Nonetheless, sanitation is a crucial element to global health, as it saves time for people to carry on their daily activities, reduces medicine and health costs, and largely, improves the quality and amount of education, particularly among girls and protect water and other environmental resources. While a multifaceted approach is ideal in managing environmental sanitation in developing countries, the importance of communication cannot be overemphasised. This study, therefore, sought to assess the role of communication in environmental sanitation management in developing countries, and also examined the state of environmental sanitation management and the challenges which confronts developing countries in managing environmental sanitation. The key summary findings from the literature reviewed from previous work on the topic is presented in this section of the research, and thus, provide some remarks, stemming

from the findings of the study for future studies.

4.2 Summary and analysis of Key Findings

4.2.1 The state of Environmental Sanitation Management in developing countries

Literature examined from previous studies on the state of environmental sanitation management in developing countries, including the Water Project (2020), WaterAid (2019), International Water Association (2019), Manteaw and Boachie (2019), Issah (2018), Palfreman (2017), and Daramola and Olowoporoku (2016), point to the fact that, notwithstanding enormous efforts over the last decade to improve the access to sustainable waste and water management and sanitation solutions in developing countries, the situation still remains an herculean challenge in most countries in these regions. This challenge of undesirable environmental sanitation management in developing countries is attributed to a myriad of factors. Key amongst them include, explosion in urban migration and unplanned settlement and its attendant lack of infrastructure to accommodate people and the waste the generate on daily basis, lack of information, education, and sensitisation on the essence of environmental sanitation management, especially among rural and peri-urban dwellers.

Other major contributing factors for the poor state of environmental sanitation management in developing countries are, inadequate financial resources and investment in environmental sanitation management, and lack of service providers and sanitation management facilities. The repercussion of these challenges concerning environmental sanitation management in developing countries is that, it worsens the sanitation issues and its related effects on human and the environment in developing countries, which consequently, slows down the social, economic, cultural and political development. This state of environmental sanitation management in developing countries and the consequent effects, calls for pressing and

pragmatic effort, including the political commitment by governments in these regions, public-private partnerships, intensified awareness creation, public education and sensitisation, increased personnel and sanitation facilities with prompt attendance to waste and sanitation, and availability of funds and investment in environmental sanitation management.

4.2.2 Challenges that confront Environmental Sanitation Management in developing countries

Having scrutinised literature on the challenges that confront environmental sanitation management in developing countries, including, Antwi-Agyei, Dwumfour-Asare, Adjei, Kweyu and Simiyu (2020), Abalo (2017), Open University (2016), Oyedele (2016), Nhapi (2015), Tsinda, Abbott, Pedley, Charles, Adogo, Okurut, and Chenoweth (2013), Acheampong (2010), Owusu (2010), Tearfund, 2007), UNFPA (2007), WHO (2007), and other, revealed that, in most developing countries, there exist, numerous challenges in environmental sanitation management. Predominantly are, rapid urbanization and population growth, lack of recent, reliable information on the condition of existing sanitation and hygiene infrastructure, lack of financial resources and investment, inadequate local government, community associations, NGOs and private suppliers and service providers. Again, the unwillingness of polluters in ending the menace environmental pollution in many forms, lack institutional and legal framework to manage waste and sanitation, lack of community participation, and community-based environmental sanitation management systems. Meanwhile, the study found that, sound environmental sanitation management and appropriate interventions are key in promoting behavioural change and better sanitation practises among people. It is therefore, expedient for governments in developing countries to prioritise environmental sanitation management, and also make the necessary financial provisions and support the course of sanitation for the benefit of all.

4.2.3 The role of Communication in Environmental Sanitation Management

The literature reviewed on the role of communication in environmental sanitation management, as discovered that, communication is indispensable in environmental sanitation management, the world over, with developing countries not being an exemption. One of such roles is that, communication provides in the designing and implementation of various programmes, policies, and activities among various players within the environmental sanitation management value chain. Correspondingly, communication supports the efforts of sanitation education to achieve the desirable attitudinal change for better-quality and sustainable environmental sanitation management practices. Communication also advances efforts of engaging in discussion on and related to sanitation in a public sphere, enabling people to voice out their plights, as well as, share ideas in managing environmental sanitation issues, and also engender education, awareness and sensitisation. Above all, the literature reviewed on the role communication in environmental sanitation management pointed out that, environmental communication is an impetus and critical support to sustainable development.

4.3 Recommendation for future studies

This study found that, an integrated approach is the ideal way to curbing the myriad of issues associated with poor environmental sanitation management in developing countries, nonetheless, all efforts cannot result in a desirable outcome without environmental communication. Against this background, it is suggested that, future studies should consider the state of involvement of communication in the integration of solutions to environmental sanitation management in developing countries. In addition, studies on the integration of environmental communication should consider ways of integrating such tool in the development of mechanisms, programmes, policies and activities in curbing environmental sanitation management in developing countries, and its related challenges.

This study also found that, although developing countries have over the years, instituted measures in ending the issue poor environmental sanitation management in their respective regions, more needs to be done, as the current state of sanitation in these regions still lags, compared to global results. It is therefore, suggested that, future studies should consider examining the state of environmental sanitation management, through a region by region approach, to underscore the phenomenon as it pertains in different parts of the continent, especially, in Africa.

4.4 Conclusion

It has become evident from this current study that, in developing countries, environmental sanitation management remains a herculean challenge for most governments. This situation is attributed to a number of human social, cultural, political and economic behavioural actions, inadequate financial resource and investment, and lack of infrastructure and human capital to deal with the sanitation menace in these developing countries. This situation, comes with its implications in varied forms, which consequently affect the plights of people living in these regions and retards development. With this revelations, there is the need for developing countries to marshal out integrated approaches, mostly, community centred, with communication as a pivotal element in solving the canker bedevilling developing countries in environmental sanitation management for sustainable development.

As a result of the outcome of this current study, it is envisaged that future studies on environmental sanitation management would provide an impetus for various stakeholders in the sanitation value chain to recognise and effectively utilise communication in the designing and implementation of policies, programmes and activities, to meet the growing demand for environmental sanitation safety and development in developing countries.

This research is unique, as it presents an examination of existing work on different themes that combined to form the topic for this particular study. This is particularly so, because, it utilised only secondary data to examine and made sense out of numerous related studies from varying perspectives, unlike the usual gathering and analysis of primary data for analysis.

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