

UNIVERSITY OF EDUCATION, WINNEBA

**SANITATION PRACTICES OF PEOPLE LIVING ALONG THE WINNEBA
BEACHES**

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The logo of the University of Education, Winneba, is a circular emblem. It features a central sunburst or starburst design in white and yellow, set against a red background. Below the sunburst are four blue circles arranged in a square pattern. The entire emblem is surrounded by a white border containing the text 'UNIVERSITY OF EDUCATION, WINNEBA' in blue capital letters.

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DECLARATION

Student's Declaration

I Dinah Ampomah declare that this Thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature:

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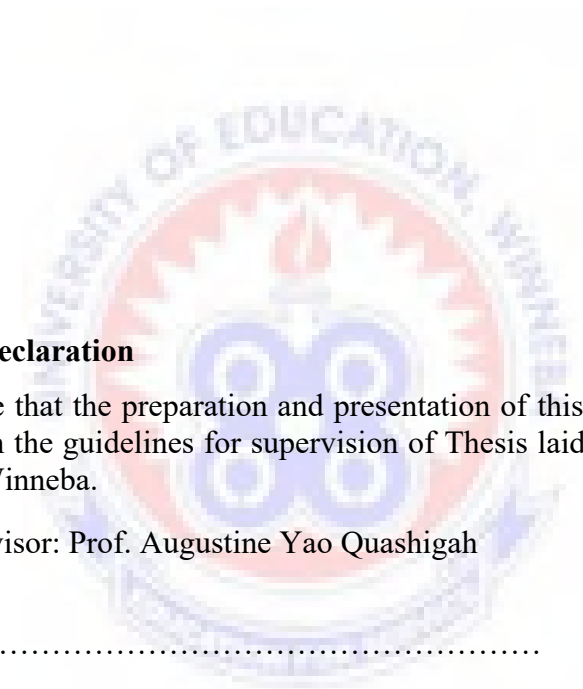
Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis laid down by the University of Education, Winneba.

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Date:



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DEDICATION

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LIST OF ABBREVIATIONS

CWSA	Community Water and Sanitation Agency
DFID	Department for International Development
DESF	District Environmental Sanitation Fund
EA	Environmental Attitudes
EPA	Environmental Protection Agency
ESP	Environmental Sanitation Policy
GDP	Gross Domestic Product
GPRS	Growth and Poverty Reduction Strategy
IRC	International Rescue Committee
ISWM	Integrated Solid Waste Management
MDGs	Millennium Development Goals
MEST	Ministry of Environment, Science and Technology
MLGRD	Ministry of Local Government and Rural Development
MTDPF	Medium Term Development Policy Framework
MWRWH	Ministry of Water Resource, Work and Housing
NEHA	National Environmental Health Association
NEPAD	New Partnership for African Development
NESPoCC	National Environmental Sanitation Policy Coordinating Council
NGO	Non-Governmental Organization
SWM	Solid Waste Management
TPB	Theory of Planned Behaviour
UNEP	United Nations Environmental Programme
UN	United Nations

UNICEF	United Nations International Children's Education Fund
WHO	World Health Organization
WSP	Water and Sanitation Program



ABSTRACT

Environmental sanitation has become a serious problem in the country. One area that has suffered from this problem is our beaches. Having a healthy beach environment promotes good living and development. Winneba is currently experiencing poor environmental sanitation at the beaches. The beaches of Winneba are filled with both plastic and solid waste. There is open defecation and indiscriminate dumping of refuse. The main purpose of the study is to examine the sanitation practices of people living along the Winneba beaches. The study adopted the case study approach. The main instruments used for gathering the data for the study were interview guide and observation checklist. This enabled the researcher to understand the sanitation practices of people living along the Winneba beaches. The sampled population for the study consisted of twenty (20) respondents who live along the beaches of Winneba, one Zoomlion Official, Environmental Health Officer and the Assemblyman of Akosua Village/Sir Charles beach of Winneba in the Central Region of Ghana. Data collected were analyzed based on emerging themes and patterns. The study revealed several sanitation practices of people living along the beaches. However, the overall environmental sanitation condition at the Winneba beaches is not up to standard. The research findings showed that environmental sanitation at the Winneba beaches is poor. The study again found out that inadequate toilet facility is one of the major sanitation problems of people living along the beaches. To ensure good environmental sanitation at the beaches, the study recommended that the Effutu Municipal Assembly should develop and implement periodic public education programmes on the need to maintain good sanitation at the beaches in order to change the attitudes of people living along the beaches to practice good sanitation.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Sanitation and good hygiene are fundamental to good health and socio-economic development. In the words of Monney (2014), dumping of rubbish indiscriminately is one of the extreme bad habits of Ghanaians toward cleanliness. In the same vein, Akintola (1978) asserts that maintaining a sound and healthy environment has always been a challenge to man. The World Health Organization defines environmental sanitation as the control of all those factors in the individual's physical environment, which may exercise a deleterious effect on physical development, health and survival. Thus, inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health, both in households and across communities. Good sanitation plays a major role by promoting good health and economic growth of the nation. This has made the issue of improved sanitation a real priority at present in Ghana, since sanitation benefits connect between environment and health (Harvey, 2008). Sanitation for the purpose of this study has to do with sanitation practices of people living along the Winneba beaches.

In this case, good sanitation promotes a healthy environment and good health. The current environmental sanitation status of Ghana leaves much to be desired. Less than 40% of urban residents are served by a solid waste collection service and less than 30% by an acceptable household toilet facility (MLGRD, 1999). Rural dwellers are even less served. Even in those cases where wastes are removed, most are disposed of in an unsanitary manner; posing serious risks to human health and the environment, including the country's dwindling water resources. Storm water drainage is inadequate or absent in most settlements, and flooding is common. Inadequate environmental conditions in

health care facilities including poor Water, Sanitation and Hygiene (WaSH), lack of ventilation, and inadequate management of health care waste cause infections through contaminated water, food, hands, fomites (objects or materials which are likely to carry infections such as clothes, utensils and furniture), medical equipment, and unsafe blood transfusions (WHO, 2008). At the household level, poor hygienic practices by individuals and communities are compounded by insufficient and ineffective hygiene education. Vector-borne diseases such as malaria and bilharzia are rife due to the virtual absence of pest and disease vector' control programmes. These factors have a serious health impact (more than half of all reported diseases are related to poor environmental sanitation), with attendant social and economic costs (Environmental Sanitation Policy, 1999).

The Ministry of Local Government and Rural Development Report of 2007 indicated that, in Ghana, poor environmental health conditions are a major drain on the country's weak economy, because the country incurs high health expenditure on sanitation-related diseases and loses productive working hours because of illnesses (MLGRD, 2007). Poor environmental sanitation-related diseases, though preventable, continues to be the major reason for seeking medical care in the country's health facilities. National epidemiological patterns have remained fairly constant over the years with diseases related to poor environmental sanitation being the most frequently reported. Globally, an estimated 2.5 billion people lack access to basic sanitation and 1.1 billion still practice open defecation (WHO & UNICEF, 2012). Human technological and economic advancement has made the types and kinds of solid waste very diverse and the problem of waste management more complex. Furthermore, poor institutional framework and low capacities as well as lack of resources; both human and capital has

put waste management and sanitation conditions in many cities of the developing world, particularly in Africa, in a very deplorable state (NEHA, 2005).

According to WHO and UNICEF report (2014), over the past 22 years since the 1990s, the number of people practicing open defecation fell by 2.1%, from 1.3 billion in 1990 to 1 billion in 2012, constituting 14% of the global population who are without any form of sanitation facility and continue to defecate in unapproved places. According to the report, nine out of ten people who practice open defecation live in rural areas, although the number in the urban areas is gradually increasing (WHO & UNICEF, 2014). Southern Asia and sub-Saharan Africa countries, including Ghana, continue to have the lowest levels of coverage of sanitation and is a concern in international development circles.

Environmental deterioration, extinction or pollution in many vital earth systems, such as air, water, soil, forest and biological diversity have required countries to develop policies for protecting and developing the earth and promoting global cooperation on these issues (Tecer, 2007). Poor sanitation contributes to morbidity and mortality in the developing world. Almost a third of the world's people do not have access to hygienic latrines. Nine of every ten African Cities are facing serious sanitation problems (Lyse, 2003).

The United Nations General Assembly in 2001, designated 19th November as World Toilet Day to project sanitation. It was a day to raise awareness of all people who do not have access to toilet, despite their human right to water and sanitation (UN, 2010). WHO was celebrating World Health Day on every 7th April each year to draw worldwide attention to global health every year. The United Nations (UN) Conference on Water, held in Argentina in 1977, declared the decade of 1981 -1990 as the

International Drinking Water and Sanitation Decade with a target of “water and sanitation for all” (Black & Fawcett, 2008). Despite the aim to improve both water supply and sanitation, most of the attention was put on water supply and at the end of this decade there were 300 million more people without sanitation than at its beginning (Black & Fawcett, 2008). In Ghana the low coverage of improved sanitation is partly caused by the fact that the Joint Monitoring Programme (JMP) does not classify improved facilities as such if they are shared, over half of Ghana’s population are using shared facilities. The reason why JMP does not classify shared toilet facilities as improved is because they may not be hygienic, convenient and private enough for users (WSMP, 2008). In several parts of Africa, thousands of tonnes of solid waste are generated daily. Most of this waste ends up in open dumps and wetlands, thereby contaminating surface and ground water and posing major health hazards (EGSSAA, 2009).

Improving access to and increasing the use of latrines would reduce deaths and poor health caused by diarrheal disease (Guiteras, Levinsohn, & Mobarak, 2015). One billion people, or about 15% of the world’s population, currently practice open defecation, and another 1.5 billion do not have access to improved sanitation. Despite the existence of simple, effective solutions such as pour-flush latrines, poor sanitation causes 280,000 deaths per year and may contribute to serious health problems such as stunting or tropical enteropathy. The issue has attracted attention and resources from governments and development institutions. In 2012, the United Nations Children’s Fund (UNICEF) spent USD 380 million on programs focused on water, sanitation, and hygiene for children. The World Bank’s Water and Sanitation Program plans to direct USD 200 million in government and private funds to improve sanitation for 50 million people during the 2011–2015 period (Guiteras, et al. 2015). Furthermore, environmental

hazards are responsible for about a quarter of the total burden of disease worldwide and as much as 30% in regions such as sub-Saharan Africa. As many as 13 million deaths can be prevented every year by making our environments healthier. These facts and figures highlight the impact of environmental factors on public health. More than 2.4 billion people in the world currently lack access to adequate sanitation and are forced to dispose of their excreta in unimproved and unsanitary conditions. Those who suffer from this, lack most basic human needs and also tend to be victims of poverty, ill health and an overall poor quality of life (WHO, 2013). Ghana has the highest number of people (59%) using shared or public toilets worldwide: this is an unimproved sanitation by the JMP standards (WHO & UNICEF, 2014).

Environmental sanitation envisages promotion of health of the community by providing clean environment and breaking the cycle of disease. It depends on various factors that include hygiene status of the people, types of resources available, innovative and appropriate technologies according to the requirement of the community, socio-economic development of the country, cultural factors related to environmental sanitation, political commitment, capacity building of the concerned sectors, social factors including behavioural pattern of the community, legislative measures adopted, and others (Kumar, Kar, & Jain, 2011). Poor environmental sanitation and unregulated economic activities have resulted in the pollution of many water bodies in the country consequently depriving communities that depend on these water bodies for their livelihood (MLGRD, 2007). The tourism sector of Ghana, earmarked as a significant source of income, employment and foreign currency, also suffers from poor sanitation. It is estimated that Ghana could earn as much as US\$8.5 million annually if sanitation is improved (WSP, 2012).

The population of Effutu Municipality according to the 2010, population and Housing Census is 68, 592 representing 3.1 percent of the region's total population of 2,201,863. Winneba, traditionally known as Simpa, is a historic fishing port in south Ghana, lying on the coast, 140 kilometres (90 miles) east of Cape Coast. Winneba has three beaches called the Sir Charles beach, Royal beach and Woarabeba beach.

The impact of poor sanitation in cities, communities and towns like Winneba threatens the achievement of the Sustainable Development Goals (SDGs). Hence, the Effutu Municipality still faces the challenges of poor sanitation resulting from poor or unhygienic habits and practices. Thus, the worsening environmental sanitation condition in Winneba beaches calls for solution in order to reduce its impact on the people.

1.2 Statement of the problem

Environmental sanitation is one of the major problems facing Ghanaians today. Over the years, beach sanitation has become a major problem in the Effutu Municipal Assembly. This problem has the potential of destroying the natural environment at the beaches and affects the health of the people who live along the beaches. Thus, inhabitants of Winneba beaches face a major sanitation crisis that causes diseases and impedes development. Along the beaches of Winneba especially the Woarabeba beach, are scattered with both solid and plastic wastes. There are heaps of refuse dumped close to the sea and backyards of beach dwellers. There is a problem of open defecation along the beaches of Winneba which is very possible that when it rains or when there is a storm, most of these wastes will be carried to the sea and the sea could also bring these wastes back to its shores making the beach environment dirty all the time. This can

affect the aquatic lives in the sea and making the beach environment unhygienic by creating room for insects like houseflies and mosquitoes to breed causing diseases.

Efforts have been made by the Effutu Municipal Assembly to ensure cleanliness of the Assembly by engaging the services of waste management companies (Zoomlion) to ensure cleanliness in Winneba township, sanitation at the Winneba beaches have received little attention by the beach dwellers, the Assembly and the government as a whole. Thus, the attitudes of the inhabitants towards sanitation still persist.

Moreover, various studies have been done on sanitation in Ghana (Mensah 2002: Amoaning 2006: Scott & Trouba 2010: Williams 2001). However, little has been done on sanitation practices along the beaches in Winneba. These are the gaps this study sought to fill. Considering the above problem, there is the need for the researcher to examine the impact of sanitation practices of people living along the Winneba beaches.



Source: Field Survey, September 2018.

Figure 1: Woarabeba beach filled with “solid waste”



Source: Field Survey, September 2018.

Figure 2: Woarabeba beach filled with “plastic waste”

1.3 Purpose of the study

The purpose of the study is to examine the sanitation practices of people living along the Winneba beaches.

1.4 Objectives of the study

The study seeks to achieve the following objectives:

- i. To examine the environmental sanitation situation of people who live along the Winneba beaches.
- ii. To assess the level of knowledge of respondents about sanitation at the Winneba beaches.
- iii. To examine the factors that contributes to the current environmental sanitation situation along the Winneba beaches.
- iv. Outline the effects of environmental sanitation conditions on the people who live along the Winneba beaches.

1.5 Research Questions

The study sets out to find answers to the following questions:

- i. What is the environmental sanitation situation of people living along the Winneba beaches?
- ii. What is the level of knowledge of respondents about sanitation at the Winneba beaches?
- iii. What factors mutilate the beach dwellers to behave negatively toward sanitation?
- iv. How does insanitary conditions affect the people who live along the Winneba beaches?

1.6 Significance of the study

The findings of this study may help the Ministry of Water and Sanitation to educate the people of Winneba about the dangers of poor sanitation practices and its effects. Also, the work is going to provide information to stakeholders such as the Effutu Municipal Assembly, Ministry of Tourism, Environmental Protection Agency and Zoomlion Ghana which may help them devise improved strategies to help address the issue of sanitation on Winneba beaches in the municipality. The study will also add to a body of academic knowledge.

1.7 Limitations of the study

The study is restricted to the Effutu Municipality and is conducted along the Winneba beaches. The views of the inhabitants who live along the coast could be biased since the findings of the study are based on respondents' opinions.

1.8 Delimitations of the study

Though the issue of sanitation is nationwide, the study has the inhabitants of the Effutu Municipality as its focus. The study is also limited to only people who live along the Winneba beaches. Considering the low level of education among some of the

respondents, the interview was conducted in Fanti to make it possible for them to respond to the questions effectively. The interview was organized into three stages. In the first stage, the purpose was to establish an understanding of the interviewees' background, asking questions about them and the number of years they have stayed at the beach. The second stage focused on details of sanitation practices at the beach and its environs. In the third stage, respondents were asked about effects of beach sanitation and suggested measures to curb the menace. Although there were basic outlines for the interview, it was not possible to keep to this structure because the questions were adjusted depending on the information given by the respondents. "In qualitative interviewing, you change the questions you ask depending on what you learned or failed to learn" (Rubin & Rubin, 1995: cited in Islam, 2012: 83).

1.9 Organization of the study

The work is presented in five chapters. The first chapter deals with the background to the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, limitations of the study, delimitations of the study and organization of the study. Chapter two reviews related literature. Chapter three also discusses the methodology which was used to collect the data for the study. Chapter four presents data analysis and discussion and chapter five deals with summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter discusses some concepts related to environmental sanitation. It focuses on environmental sanitation in Ghana, especially along the beaches with discussing the nature, causes and effects of poor environmental sanitation.

2.1 Theoretical Framework

➤ The Theory of Planned Behaviour (TPB)

The Theory used for the study is the Theory of Planned Behaviour (TPB). It was propounded by Ajzen & Fishbein, in 1980. The Theory of Planned Behaviour started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in behaviour at a specific time and place. TPB states that what an individual does is determined by personal motivation which is determined by attitude, social support and perceived behavioural control. These factors are grounded by the persons' perception of social, personal and situational consequences of the specified action (Ajzen, 1985; Maddan, Ellen & Ajzen, 1992; Ajzen & Driver, 1992). TPB allows for a better evaluation of human behaviour when participation decisions are voluntary and under an individual control. The Theory of Planned Behaviour has been widely used in environmental behaviour research to predict a person's intent to participate in a specified behaviour (Gamba & Oskamp, 1994; Scott & Willets, 1994; Kuhlemier, Van den Berg, & Lagerweij, 1999; Grodzinska-Jurczak, Bartosiewicz, Twadowska, & Ballantyne, 2003). The Theory of Planned Behaviour assumes that the best prediction of behaviour is given by asking people if they are intending to behave in a certain way. Here we note that the intention will not express itself in behaviour if it is physically impossible to perform the behaviour or if unexpected barriers stand in the way.

Assuming intention can explain behaviour, how can intention be explained? According to Ajzen, three determinants explain behavioural intention:

1. The attitude (opinions of oneself about the behaviour);
2. The subjective norm (opinions of others about the behaviour);
3. The perceived behavioural control (self-efficacy towards the behaviour).

This theoretical framework is important in this study because the theory deals with the attitude which talks about the opinions of oneself about the behaviour, opinions of others about the behaviour and the perceived behavioural control. The theory of planned behaviour links one's beliefs and behaviour. In short, the theory intends to explain behaviours over which people have the ability to exert self-control. This will help the current study to investigate why individuals who live along the beaches turn the place as dumping sites, defecate around and make the beaches dirty, know the opinions of others about the behaviour and see if they are able to exert self-control when it comes to environmental sanitation.

2.2 The Theory of Planned Behaviour Attitude

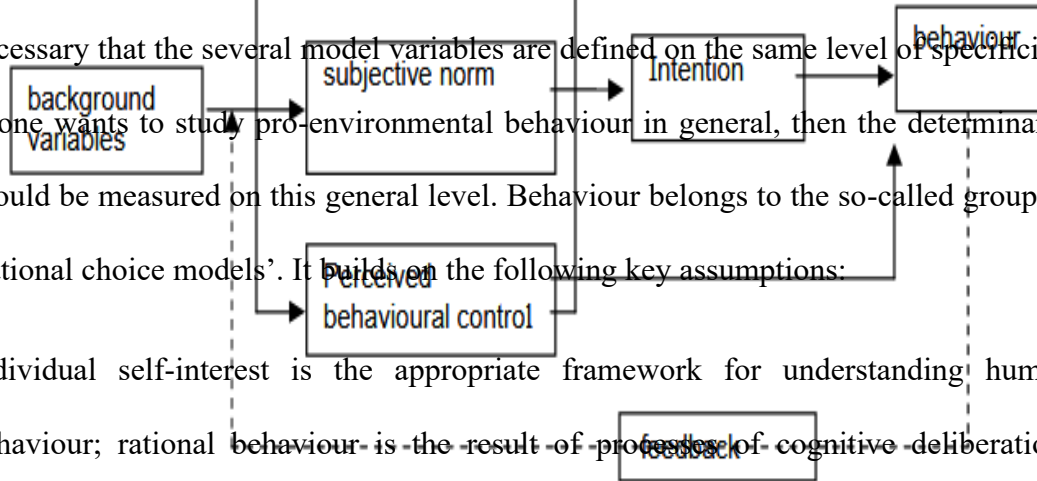
According to the model, attitudes, subjective norms and perceived behavioural control predict the intention, which in turn predicts the behaviour. Background variables, as demographical factors, are supposed to influence the behaviour through the three determinants and the intention. Attitudes, subjective norms and the perceived behavioural control, explain the behavioural intention before the behaviour takes place. The intention is a good predictor of the actual behaviour. The theory also says that the perceived behavioural control is an estimate of the skills needed for expressing the behaviour and the possibility to overcome barriers. Therefore, a direct influence of

perceived behavioural control on behaviour is supposed. The actual behaviour leads to feedback about the expectations of the behaviour.

Furthermore, Ajzen states that for a good and predictive value of the model, it is necessary that the several model variables are defined on the same level of specificity.

If one wants to study pro-environmental behaviour in general, then the determinants should be measured on this general level. Behaviour belongs to the so-called group of 'rational choice models'. It builds on the following key assumptions:

Individual self-interest is the appropriate framework for understanding human behaviour; rational behaviour is the result of processes of cognitive deliberation; internal factors, especially the attitude, play the most important role. It is well known that human behaviour is extremely complex and consists of social, moral and altruistic behaviour as well as simply self-interested ones. More often, behaviour is embedded in collective and social decision-making contexts and other contextual factors. These factors continually shape and constrain individual preference.



(Dillon & Gayford, 1997, p. 285)

Figure 3: The Theory of Planned Behaviour

Dillon and Gayford, (1997) reiterated that the model has been applied in a wide variety of contexts and research evidence supports the view that statements of behavioural intentions are strong indicators of personal behaviour. People's beliefs and value systems influence these behavioural intentions. Hence, this theory of planned behaviour will be serving as a gateway for the present study in identifying the actual look of attitude, subjective norm and perceived behavioural control, and can provide useful information as the basis for intervention to help change behaviour.

2.2.1. Concepts in Environmental Sanitation

The Environment

The word 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 sunlight, air, water, soil, etc. Environment is a complex of many variables, which surround man as well as the living organisms. Environment includes 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). Willers (1996) sees the environment as the total complex of interrelationships making up the physical, biological and socio-political surroundings.

In the words of Eni (2005), human beings have characteristically lived in two worlds. The first is the natural world of nature consisting of plants, animals, soils, air, water that preceded the existence of man by hundreds of millions of years of which human is an integral and inescapable part. The second is the world of social institutions and artefact's (built world) that humans deliberately created for themselves, using science, technology, culture, political organization, etc.

Barrow (1995) cited in Sessi, (2014) defines environment as the sum total of conditions within which organisms live. It is the sum total of interaction between living (biotic and non-living (abiotic) parameters. According to Bell, Greene, Fisher, & Baum, (2001), environment refers to one's surroundings which include one's social environment, for example the people and groups among which we live; one's physical environment, for example the non-animal aspects of one's surroundings such as the wilderness, cities or one's farmlands; the natural (non-human) and the built (human made) environment.

These conceptualizations are related to the current study in the sense that the individual affects the environment in diverse ways. Man may also be a component of the environment i.e. the surrounding of other organisms. Therefore the degree to which the environment is modified by the practices of the people living alongside the beaches can pose threats or further enhance the benefits derived in these areas. If there is coexistence between an individual and the environment, there will be stability. Thus, if the environment is clean and well maintained then, it can be sustainable throughout or

always. On the other hand, if man destroys the environment by throwing rubbish in the sea and along the beaches, defecating along the beaches, littering, etc. it disrupts the co-existence between man and the environment thereby causing the environment to be unstable. When the environment is destroyed or mismanaged, the quality of life of the people and that of our future generations are at risk.

2.2.2 Environmental awareness

Environmental awareness implies knowledge about environment and inculcates values and required skills to solve environmental issues and it is an initial step leading to carry responsible citizenship behavior (Sengupta, Das and Maji, 2010). The knowledge a community possesses refers to the understanding of any given phenomenon (Kaliyaperumal, 2004 cited in Mwaseba & Kigoda, 2017). Duan and Fortner (2005) observed that people possessed high environmental awareness and knowledge of local environmental issues than global environmental issues. Human beings live in the environment and use resources from the environment such as air, water and land for survival. Therefore, there is the need to create environmental awareness to reduce environmental pollution and poor environmental practices. Thus, man must have knowledge about the environment, how to preserve the environment, maintenance of cleanliness and good sanitary practices to avoid irresponsible environmental behaviour, negligence and ignorant about the environment. Relating it to the current study, environmental sanitation is vital because without good sanitation, future generations may find the earth worth not living.

2.2.3 Sanitation

The concept of sanitation has been defined in so many ways. Nyamwaya (1994) defines sanitation as the proper disposal of human waste, i.e. faeces and urine. It includes

keeping the human environment free of harmful substances which can cause diseases. Mensah (2002) also defines sanitation as the state of cleanliness of a place, community or people particularly relating to those aspects of human including the quality of life determined by physical, biological, social and psychological factors in the environment. The concept of sanitation has been defined in several ways by many scholars. According to Mensah (2002), sanitation is the state of cleanliness of a place, a community or people and its being related to those aspects of human health including the quality of life determined by physical, biological, social and psychological factors in the environment. Sanitation could also be seen as the principle and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare improve quality of life and ensure a sustainable environment (Alabi, 2010 cited in Ekong, 2015). Sanitation could also be described as the process where people demand, effect and sustain a hygienic and healthy environment for themselves and others by erecting barriers to prevent the transmission of disease agents in order to lay foundation for sustainable development (Lancet, 2010).

Bukuluki (1995) cited in Kyangwa and Odongkara (2005) explains that understanding sanitation requires understanding human excreta's composition, hazards to human health, and potential for reuse hence defines sanitation as the construction and use of sanitary facilities as a way of preventing diseases arising out of poor hygiene habits such as poor disposal of plastic waste and human excreta. Mara, Lane, Scott & Trouba (2010) revealed that human excreta are faeces and urine, which consist of proteins, carbohydrates, and fats. Its contents include moisture, organic matter, nitrogen, phosphorous, potassium, carbon, and calcium which have effects on the environment if not properly managed.

Nyamwaya (1994) reported that sanitation is the appropriate means of disposing human waste, faeces and urine which involves protecting the human environment from harmful substances which can cause diseases and harm to human health. Schertenleib, Forster & Belevi (2002), define sanitation as interventions to reduce people's exposure to diseases by providing a clean environment in which to live and with measures to break the cycle of disease. This usually includes hygienic management of human and animal excreta, refuse and wastewater, the control of disease vectors and the provision of washing facilities for personal and domestic hygiene.

According to the National Sanitation Foundation of USA, the word sanitation is defined as a way of life that is expressed in the clean home, farm, business, neighbourhoods and community (Park, 2011). World Health Organization (WHO) defines sanitation as the provision of facilities and services for the safe disposal of human urine and faeces (UNICEF & WHO, 2012). Proper sanitation leads to good hygiene which promotes good health but many people still dispose of their waste indiscriminately. This is causing havoc in our communities, cities and towns. Improper disposal of waste exposes the environment to danger by introducing diseases like cholera, malaria, etc. and above all making the environment unpleasant to live in. Sanitation is therefore a concept which ensures a hygienic environment through proper disposal of wastes and the prevention of diseases.

These definitions are operationalized in the current study as sanitation brings a good and healthy living. Proper sanitation reduces the amount of filth, diseases and pollution in one's environment. It will also reduce the rate of malaria, cholera and water-borne infections like diarrhoea in our surroundings. Poor sanitation serves as a carrier for vectors such as mosquitoes spreading epidemics. Good sanitation can therefore be

practiced to prevent filth and its related diseases in order to promote good health and sound environment. Sanitation therefore is the absence of filth, dirt, littering, indiscriminate faecal deposit, and the presence of good drinking water, clean surroundings, and proper sewage disposal for a healthy living.

2.2.4. Environmental Sanitation

The concept of environmental sanitation refers to activities aimed at improving or maintaining the standard of basic environmental conditions affecting the wellbeing of people. These conditions include (1) clean and safe water supply, (2) clean and safe ambient air, (3) efficient and safe animal, and industrial waste disposal, (4) protection of food from biological and chemical contaminants, and (5) adequate housing in clean and safe surroundings. In addition, Environmental Sanitation is aimed at developing and maintaining a clean, safe and pleasant physical and natural environment in all human settlements, to promote the socio-cultural, economic and physical well-being of all sections of the population (Environmental Sanitation Policy, 2009). The improvement in sanitation is known to have significant beneficial impact on health both in households and across communities and even in the niche of the working environment (Amoaning, 2006).

Environment includes not only water, air, and soil but also the social and economic conditions under which we live. The key to individual's health lies largely in the environment (Park, 2011). The individual is responsible for the pollution of the environment through urbanization, industrialization and other activities.

The principal components of environmental sanitation include:

- a) Collection and sanitary disposal of wastes, including solid wastes, liquid wastes, excreta, industrial wastes, health-care and other hazardous wastes;

- b) Storm water drainage;
- c) Cleansing of thoroughfares, markets and other public spaces;
- d) Control of pests and vectors of disease;
- e) Food hygiene;
- f) Environmental sanitation education;
- g) Inspection and enforcement of sanitary regulations;
- h) Disposal of the dead;
- i) Control of rearing and straying of animals;
- j) Monitoring the observance of environmental standards.

According to the Ministry of Local Government and Rural Development (MLGRD) (1999) Environmental sanitation refers to efforts or activities aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements. It comprises a number of complementary activities, including the construction and maintenance of sanitary infrastructure, the provision of services, public education, community and individual action, regulation and legislation.

In developing countries, environmental sanitation normally includes drains, solid waste management, and vector control, in addition to the activities covered by sanitation (DFID, 1998). According to the International Water and Sanitation Centre, the term 'environmental sanitation' is used to cover the wide concept of controlling all the factors in the physical environment which may have an impact on human health and well-being (IRC, 2006).

Environmental Sanitation is (a) the promotion of hygiene and, (b) the prevention of disease and other consequences of ill-health, relating to environmental factors. Environmental sanitation covers two basic dimensions: The first one is Environmental

factors such as disposal of human excreta, sewage, household waste and other waste likely to contain infectious agents, etc. The second one is sanitation practices. These are various hygienic practices of the communities, basic knowledge, skills and human behaviours as well as social and cultural factors concerning health, life-style and environmental awareness (WHO, 1997).

Environmental sanitation is a set of actions or a fundamental process of collecting and safely disposing all kinds of waste within the environment with the intention of protecting and promoting the individual health and quality of life of communities. Environmental sanitation generally includes the provision of facilities and services for the safe disposal of waste, the maintenance of hygienic conditions and the prevention of diseases (Duru, Iwu, Diwe, Ukwakwe, Merenu, Madubueze, Okedo-Alex, Ndukwu, Ohale & Nwaigbo 2017). Human health and wellbeing rely on the quality of the surrounding environment (Oluranti and Omosalewa 2012; Rim-Rakeh 2012; Sankoh, Yan, and Tran 2013).

Environmental sanitation is therefore related to the current study in terms of ensuring a clean and pleasant environment at all times. It encompasses good sanitary measures through proper disposal of plastic, solid and liquid wastes, maintaining good hygienic conditions such as clean and safe surroundings. Thus, environment free from choked gutters, bushes, indiscriminate dumping of waste, open defecation and prevalence of mosquitoes, flies and other infectious diseases.

2.2.5. Individual responsibilities (on sanitation)

Every individual, establishment or institution shall be responsible for:

- a) Cleansing within and in the immediate environs of the property they occupy, including access ways and the drains and roads abutting the property;

- b) Temporary storage of wastes within the property and disposal thereof outside the property, as may be directed by the competent authority;
- c) Taking measures to prevent the breeding of disease vectors within and in the immediate environs of the property they occupy;
- d) Ensuring that the wider environment is not polluted or otherwise adversely affected by their activities;
- e) Hygienically disposing of all wastes they generate in public areas by use of an authorised public toilet or solid waste container as appropriate;
- f) Participating in all communal environmental sanitation exercises organised by the community or its representatives. Where individuals, establishments or institutions fail to discharge these responsibilities, the competent authorities shall take any necessary remedial action at the expense of those in default. The competent authorities shall also assume responsibility for the maintenance of specified public areas in a sanitary condition and charge fees for the use of such areas (Environmental Sanitation Policy, 1999).

Individual responsibility on sanitation is related to the current study in a way that sanitation is a collective responsibility of all individuals living in the community. As proper sanitation promotes good and healthy living/environment, all hands must be on deck to help fight bad sanitation practices such as throwing of rubbish into the sea and along the beaches, defecating along the beaches or at open places, in our various communities. Individuals should partake in communal labour to help protect the environment, weeding around the community whenever it is bushy to help reduce the breeding of mosquitoes in our communities, cleaning and burning rubbish at all times.

2.2.6. Role of the community (on sanitation)

Environmental sanitation is a public good. Improper waste disposal by one individual affects all community members; mosquitoes that breed in one place may bite people in another; contamination of foodstuffs will affect all who consume them, not just the seller. Ensuring good sanitation is therefore the responsibility of all citizens, communities, private sector enterprises, NGOs and institutions of Government. All these actors have an essential part to play in maintaining a high standard of environmental sanitation, so that domestic and commercial activities have no prejudicial effect on the health or the living and working environment of others (Environmental Sanitation Policy, 1999). That is the community must come together to ensure good practices of sanitation and frown on unsanitary conditions/practices for the betterment of all the people in the community.

2.2.7. National Environmental Sanitation Policy (ESP)

Ghana's National Environmental Sanitation Policy (ESP) was developed in 1999 in consultation with a variety of stakeholders and covers the broad spectrum of environmental sanitation including solid and liquid waste, industrial and hazardous waste, storm water drainage, environmental and hygiene education, vectors of disease, and disposal of the dead (Republic of Ghana, 1999). The policy was developed by the Ministry of Local Government and Rural Development (MLGRD). It is a fairly concise document that sets out basic principles and objectives, identifies roles and responsibilities and also covers environmental management and protection, legislation and funding, among others.

The Environmental Sanitation Policy is aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements, to promote the social,

economic and physical well-being of all sections of the population. It comprises a number of complementary activities, including the construction and maintenance of sanitary infrastructure, the provision of services, public education, community and individual action, regulation and legislation (MLGRD, 1999).

The policy identifies many of the major problems and constraints in environmental sanitation, including the lack of assigned roles for governmental bodies, the lack of capacity and skilled professionals at all levels, and the problems associated with the transfer of responsibilities for environmental sanitation without the corresponding budget, personnel and requirement transfers. The policy then lays out its strategy to deal with these problems. Key items in the strategy include:

- a) Defining the roles and responsibilities related to environmental sanitation of institutions from the national ministries down to unit committees, community organizations, and the individual;
- b) The privatization of environmental sanitation services;
- c) The creation of a National Environmental Sanitation Policy Coordinating Council (NESPoCC) and a District Environmental Sanitation Fund (DESF); and
- d) Targets were set for 2020 ; Each of the above components is discussed below:
 - i. Roles and responsibilities: The policy clearly states the role of actors at a variety of levels of government. Evaluations of Ghanaian sanitation policy and governance conducted by Salifu, Nashiru & Tayler (2005) identified loopholes in the activities and coordination between some ministries and institutions and thus recommended an update to include the roles of the Ministry of Water Resources Works and Housing (MWRWH) and Community Water and Sanitation Agency (CWSA), and to clarify the roles of some other institutions and ministries (e.g., Ministry of Health).

- ii. The policy also outlines the roles and responsibilities of the Community and individuals. Ensuring good environmental sanitation is the responsibility of all citizens, communities, private sector, enterprises, NGOs and government institutions. All these actors have essential part to play in maintaining a high standard of environmental sanitation. The policy indicates that, every individual, establishment or institution shall be responsible for:
- Cleansing within and in the immediate environs of the property they occupy, including access ways and the drains and roads abutting the property;
 - Temporary storage of wastes within the property and disposal thereof outside the property, as may be directed by competent authority;
 - Taking measures to prevent the breeding of disease vectors within and in immediate environs of the property they occupy;
 - Ensuring the wider environment is not polluted or otherwise adversely affected by their activities;
 - Hygienically disposing of all wastes they generate in public areas by use of an authorized public toilet or solid waste container as appropriate;
 - Participating in all communal environmental sanitation exercises organized by the community or its representatives (MLGRD, 1999, p. 6).

The policy also entrusts in the Assemblies the power to promulgate bye-laws and regulations to help in their environmental sanitation management process. To complement these efforts, the Judiciary is expected to establish and empower Community Tribunals to prosecute offenders against environmental sanitation bye-laws and regulations (MLGRD, 1999, p. 19). This is a good opportunity for the Effutu Municipality to enact strict environmental sanitation bye-laws to make the inhabitants responsible for environmental sanitation in Winneba beaches to ensure good

environmental sanitation practices. The Municipality should also engage in regular monitoring and supervision on sanitation practices within the municipality especially along the Winneba beaches to halt bad practices of sanitation.

2.2.8. Environmental Management

In the words of Mitchell (2002), environmental management is the actual decisions and action concerning policy and practices regarding how resources and the environment are appraised, protected, allocated, developed, used, rehabilitated, remediated and restored, monitored and evaluated. As Barrow (2005) has acknowledged, it can refer to a goal or vision, to attempts to steer a process, to the application of a set of tools, to a philosophical exercise seeking to establish new perspectives towards the environment and human societies, and to much more besides.

Environmental management hence can be seen in the present study as a form of reducing negative environmental impacts. Hence, it is arguably that environmental management is concerned about the protection of the environment by preventing environmental disasters and trying to find appropriate measures or solutions. It also means taking good decisions about the policy and practices of the environment.

2.2.9. Environmental sanitation management

According to Acheampong (2010), environmental sanitation management is the process of allocating resources to ensure a hygienic environment through service and infrastructure provision and proper disposal of waste. Poor sanitation gives many infections the opportunity to spread: plenty of waste and filth to breed on, and unsafe water to drink, wash with or swim in (WHO and UNICEF, 2008). Poor environmental sanitation has tremendous economic costs. The health impact of inadequate environmental sanitation leads to financial and economic costs of providing health

services. 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 the health cost resulting from poor water, sanitation and hygiene is equivalent to 2.1% of Annual Gross Domestic Product (GDP) (WHO & UNICEF, 2008).

This manifestation relates to the present study as good environmental sanitation management can ensure appropriate interventions to be introduced and implemented to promote change in behaviour. Also, improved environmental sanitation management can reduce environmental hazards, increase sustainability of environmental resources and promote a healthy living.

2.2.10. The role of waste management on sanitation

According to the Environmental Protection Agency, municipal solid waste has been disposed of anywhere and anyhow without regard to the nuisance and harm caused to the environment. The storage of wastes generated by households before collection and transportation to the dump site involves the use of various receptacles. These receptacles include polythene bags, propylene sacks, metal bins, and disposing waste into pits dug at the back of the house (Downmore, Shepherd, Andrew, Barbara & Daniel, 2011). “All kinds of wastes, regardless of their nature, are being dumped indiscriminately into depressions, sand pits, old quarries, beaches, drains and even, in certain areas, along streets” (EPA, 2002: 1). Hence, poor waste management is manifested in poor waste collection, disposal and treatment. Households generate an enormous quantity of waste daily ranging from effluents, solid wastes to sewage. As a result of poor waste collection in Nigerian cities probably due to shortage of personnel,

equipment and poor financing, wastes find their way on the ground and water bodies causing pollution (Uchegbu, 2000).

This role of waste management seems preferable in the study as a way of creating the awareness for municipal assemblies to become active to take up the role of protecting the environment and public health by accomplishing effective solid waste management. As waste is inevitable in human lives, man should therefore deploy good measures to keep the environment clean and safe by disposing off refuse properly in their day to day endeavours.

2.3 Concept of beach sanitation

Worldwide, as many as 8 million items of litter may enter the seas on daily basis (Benton, 1995). It has been estimated that the weight of rubbish, three times the weight of caught fish is dumped into the world's oceans annually (Nunoo & Quayson, 2003). This litter, which comes from numerous sources, may, generally, be grouped into land- and aquatic-based sources. Land based sources include industrial effluents, washed-off debris from run-off and inappropriate managed garbage bins, litter from holiday-makers at beaches, and garbage dumping grounds in communities. Aquatic-based litter include solid waste carried by rivers, and litter from merchant ships and fishing vessels (Williams, Simmons & Fricker 1993; Debrot, Tiel & Bradshaw 1999; Williams, Morgan & Tudor, 2000). These items may persist and or drift in the ocean or eventually become deposited along coastal areas. For instance, some of the litter, often the smaller pieces, become buried and re-emerged at later times to compound the litter problem at beaches (Williams & Tudor, 2000; Nagelkerken, Kleijnen, Klop, Van Den Brand, Moriniere & Van der Velde 2001; Kusui & Noda, 2003). Coastal societies in most parts

of the world are facing crisis and threats as development, recreation and waste dumping activities rise (Williams, 2001).

Beach litter also pose a threat to the health status of beach users and inhabitants of adjacent communities. Litter, from medical sources, such as syringes, glass pieces and metallic objects, threaten the health of tourists and render the beach unsafe to the users. The economic implications are equally important, given that the tourism industry in Ghana, which is currently considered to be the fourth largest source of foreign exchange earnings, can be adversely affected (Ghana Tourist Board, 2005).

It was estimated that Ghana's tourist earnings totalled US\$ 650 million in 2004, and contributed approximately 5% to the country's GDP. As beach litter devalue the aesthetic value of the beach, where most tourists visit to relax, it can serve as a deterrent to future visitors. Other marine activities such as marine transportation can be adversely affected, including trawling operations, which make it dangerous to navigate, leading to loss of fishing time and financial income (Nash, 1992).

This concept of beach sanitation pertaining to the current study brings to bear that beach environment is serene and has a couple of usefulness. Sanitation along our beaches even though a lot has been done, not much has been achieved. There is indiscriminate dumping of refuse along the coast due to absence of facilities there and in the various homes along the beaches. There is also indiscriminate defecation by both children and adults as a result of absence of adequate toilet facilities along the beaches and the homes along the coast and most of them are old homes with bucket type of toilet which has ceased to exist. There is prevalence of diseases such as malaria and diarrhoea as a result of poor sanitation. Also, homes along the coast do not have proper layout which makes it difficult to carry out proper sanitation for example and space for construction of

household toilets. The few toilet facilities and refuse bins available are not utilised as the people refuse to pay for the token. Thus, when the beaches are clean and kept well, it makes the place comfortable to be at. People can visit the beach during their leisure time, to enjoy fresh breeze and for relaxation, etc.

This makes visitors, tourists and the indigenes also enjoy the serenity of the beach sites. On the contrary, if beaches are littered with sewages, the sea being turned to refuse dump, people defecating indiscriminately, and the surroundings filled with bad smell, it makes the place unfriendly and very unhealthy as well. Instead of the beach being environmentally friendly, it rather serves as the breeding ground for flies, mosquitoes and filth. Food vendors/restaurants operators at the Winneba beaches testify that whenever the beaches are kept clean, they get a lot of customers who buy their food and other items from them. This implies that individuals prefer good sanitation at the beaches, therefore we must keep the beach environment clean by not littering around whenever we visit the beach, and food vendors must also try their best to keep the beaches clean and neat.

2.3.1. Current practices to improve sanitation conditions. (Landfill)

A landfill site also known as tip, dump or rubbish dump was historically an initial site for the disposal of waste materials by burial. Landfill is the oldest form of waste treatment. Historically, landfills have been the most common methods of organized waste disposal and it has remained so in many places around the world. Landfills may include internal waste disposal sites where a producer of waste carries out their own waste disposal at the place of production as well as sites used by many producers. Many landfills are also used for waste management purposes, such as the temporary storage,

consolidation and transfer, or processing of waste material sorting, treatment, or recycling (Hickman and Eldredge, 2005 cited in Worlanyo, 2013).

2.3.2 Human excreta disposal

Many people in developing countries resort to open defecation where human waste is deposited in the environment, for lack of other options. Safe disposal of excreta is critical because agents of a large number of infectious diseases are passed from the body in excreta. The purpose of having and using a latrine is to remove human excreta from human contact (Shordt & Cairncross, 2014). Faecal deposits also often occur in zones where the nearby communities do not have enough toilet amenities and with tidal cycles these deposits are carried away into the sea and worsen the value of the water (Vikas and Dwarakish, 2015). Safe disposal of human excreta has been and continues to be a big challenge to man. Thus, human excreta are a source of infection and improper or poor disposal of excreta has several health hazards such as soil pollution, water pollution, and diseases caused by fecal deposit. In this study about Winneba the proper human excreta disposal may be seen as a factor which is very important in ensuring good sanitation which promotes appropriate hygienic environment.

2.3.3. Municipal solid waste

Municipal solid waste (MSW) normally termed as “garbage” or “trash” is an inevitable by-product of human activity. Population growth and economic development lead to enormous amounts of solid waste generation by the dwellers of the urban areas (Karishnamurti & Naidu, 2003). An additional source of waste that finds its way to MSW is the waste from hospitals and clinics. In majority of countries most of the smaller units do not have any specific technique of managing these wastes. When these wastes are mixed with MSW, they pose a threat to health and they may have long term

effect on environment (Pattnaik and Reddy, 2009). Generally, municipal solid waste are dumped along some major streets, open space, abandoned house, median strip of the road, and some closer to river, upon the fact that refuse bins/incinerator are provided by the state government (Adewuyi, 2017). In order for the municipality to meet its expectations in terms of sanitation, the Assembly should be able to provide refuse dumps/dustbins at vantage points for the people within the assembly especially along the beaches. The Assembly is supposed to empty these refuse bins regularly to avoid overflow/heaps of waste. This will help reduce the indiscriminate disposal of municipal solid waste at the beaches, in the sea, along the road sides, in gutters and pathways.

2.3.4. Solid waste management

Solid wastes are all the wastes that arise from both human and animal activities that are normally solid and are discarded as useless or unwanted (Takele, 2004). In this light, solid waste management includes the collection, storage, transportation, treatment and disposal of waste such that they are rendered harmless to human and animal life, ecology and the environment generally (Fafioye and John-Dewole, 2013). In the same vein, Solid Waste Management (SWM) according to Othman (2002) is defined as the control, generation, storage, collection, transfer and transport, processing and disposal of solid waste consistent with best practices of public health, economic and financial, administrative, legal and environmental considerations. Solid waste is composed of combustibles and non-combustible materials. The combustible materials include paper, plastics, yard debris, food waste, wood, textiles, disposable diapers, and other organics. Non-combustibles also include glass, metal, bones, leather and aluminium (Zerbock, 2003). A solid waste is any material which comes from domestic, commercial, and industrial sources arising from human activities which has no value to people who possess it and is discarded as useless (Freduah, 2004; 2007). It has been observed that

domestic, industrial as well as commercial wastes are poorly managed giving rise to environmental pollution. Open spaces are abused in terms of use, they are used for defecation and indiscriminate citing of disposal points for refuse (Abankwa, Grimard, Somer and Kuria, 2009). Okosun (2011) noted that solid waste management is a planned system of effectively controlling all the stages in a sanitary, economic, and aesthetically acceptable manner. Cointreau, (2001) opined that, in some cases, up to about 60% of solid waste generated within urban centres in poor countries remains uncollected and such refuse accumulates on waste lands and streets, sometimes to the points of blocking roads. Landfills in Ghana are primarily open dumps without leachate or gas recovery systems, several are located at ecological or hydrologically sensitive areas, and are generally operated below the recommended standards of sanitary practice (EPA, 2002; Mensah & Larbi, 2005 cited in Owusu, Nketiah-Amponsah, Codjoe & Afutu-Kortey, 2014).

According to Biney (1982), along the beaches of Ghana, the main source of pollution is domestic sewage. Biney (1982) also identified that the practice of dumping raw human excreta on beaches or near shore waters still continued and in areas where proper sanitary facilities were not available, residents used the beaches for such purposes. Effective solid waste management is important for the beaches and its environs. Improper disposal of solid waste can create insanitary conditions, and these conditions in turn can lead to pollution of the environment and outbreak of diseases (Nathanson, 2015). Solid waste management involves the collection, source separation, storage, transportation, transfer, recycling, treatment and the final disposal of solid waste. Municipal solid wastes include waste from household, non-hazardous solid waste from commercial and institutional establishment, and non-process industrial wastes (Tchobanoglous, 2009). Similarly, Gbekor (2003) referred to waste management as

involving the collection, transport, treatment and disposal of waste including after disposal sites. Lohse, (2003) has observed that local governments in developing countries generally lack the required capacity and technical expertise to accomplish effective and sustainable waste management programmes.

In the same vein, Ogawa, (2005) is of the view that, solid waste management programmes initiated by external consultants have collapsed in the hands of local management due to the lack of expertise and loss of funding. Baabereyir (2009) also referred to waste management as the practice of protecting the environment from the polluting effects of waste materials in order to protect public health and the natural environment. Storage should be on a short-term basis in order to prevent the waste from being released to the environment or being polluted. So, solid waste management from the perspective of the present study has to do with the collection of materials which are of no use and are being disposed of properly or recycled.

2.3.5 Plastic waste

After food waste and paper waste, plastic waste is the major constitute of municipal and industrial waste in cities. Thus, economic growth and changing consumption and production patterns are resulting into rapid increase in generation of waste plastics in the world. Even the cities with low economic growth have started producing more plastic waste due to: plastic packaging, plastic shopping bags, PET bottles, and other goods/appliances using plastic as the major component (El-Newehy, 2016).

He further explained that twenty (20) times more plastic is produced today than 50 years ago. The world's annual consumption of plastic materials has increased from around 5 million tones in the 1950s to nearly 100 million tones. This implies that more resources are being used to meet the increased demand of plastic, and more plastic waste is being

generated. Due to lack of integrated solid waste management (ISWM), most of the plastic waste is neither collected properly nor disposed of in appropriate manner to avoid its negative impacts on environment and public health. Furthermore, plastics are capable of holding rain water for several days, thereby providing breeding habitats for mosquitoes. In some developing countries in Africa, such conditions have been blamed for increasing incidence of malaria (Aziegbe 2007; Muchangos, Liu, & Li, 2014 cited in Adewuyi, 2017). To buttress the assertion made by Adewuyi (2017), Winneba beaches are also filled with plastic waste (Refer to Fig. 1.1b). There is the likelihood that these plastic wastes can enter into the sea if no one attends to it and when there is a heavy storm, the sea can also bring the waste back to its shores whenever it becomes boisterous. In the nutshell, if man does not stop dumping refuse at the beaches, it will always create problem as the sea washes the filth away and later brings it back. The beaches will always remain dirty if we don't put a stop to this bad practice.

2.4 Environmental Factors

The key to human health lies largely in the environment. Much of human illness can be traced to adverse environmental factors such as water, soil and air pollution, poor housing conditions, presence of animal reservoirs and insect vectors of diseases which pose threats to human health. Often, the individual is responsible for the pollution of the environment through urbanization, industrialization and other human activities (Mohammed, 2018). Ghana is confronted with main trials in handling its waste that is particularly municipal waste in the urban areas (Obirih-Opareh, 2002; Mariwah, 2012). Faecal deposits also often occur in zones where the nearby communities do not have enough toilet amenities and with tidal cycles these deposits are carried away into the sea and worsen the value of the water (Vikas and Dwarakish, 2015). There is also straight sewage discarding into the sea (Nunoo & Evans, 1997), which can lead to

health hazard to both the users of the beach and marine species. Coastal litter shelters the sea floor and disturbs the creation of marine benthos (benthos is the community of organisms that live on, in, or near seabed, also known as the benthic zone) (Nunoo & Quayson, 2003). In the light of this the environmental factors bedeviling the current study can be seen in the form of pollution to the environment. Whereby, there is open defecation along the beaches and dumping of rubbish, etc. Therefore, the municipality must ensure that there are public toilets which are in good shape for the beach communities especially to help reduce the bad habit of open defecation. There should be availability of urinals, and ensure punitive measures against those who will go contrary to sanitation laws.

2.4.1 Open Dumping of waste

An open dumping is defined as a land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, are susceptible to open burning, and are exposed to the elements, vectors, and scavengers. In developing countries open dumpsites are common, due to the low budget for waste disposal and non-availability of trained manpower. Open dumping of MSW is a common practice in Pakistan. It also poses serious threat to groundwater, resources and soil. The contamination of soil by heavy metal can cause adverse effects on human health, animals and soil productivity (Smith, Hopmans, & Cook, 1996 cited in Syeda, Aroma, Beenish, Naima & Azra, 2013). According to Nabegu (2013), more than two-third of the residents do not use authorized dumpsites for their waste. More importantly, major environmental health risks often emanate from the co-disposal of municipal, health care and industrial waste in these dumps (Machete and Shale 2015).

2.5 Attitudes towards Environmental Sanitation

According to Adalakum (2003), promotion of environmental sanitation quality depends on how households and community see themselves in relation to their environment. Thus, it is the way people perceive the environment that they will treat it. He believes that illiteracy, ignorance, poverty and greediness are some of the major contribution of environmental degradation because each influence people's behaviour and attitudes towards the environment. A community that is ignorant of their action on the environment will likely have wrong perception about the effect of that on their health. On the other hand, a community that understands the link between a healthy environment and good health can save money and avoidable agonies. The latest increase in waste disposal problems in Ghana can be attributed to people's over-all attitudes and perceptions towards wastes (Quartey, Tosefa, Danquah, & Obrsalova 2015). Open and uncontrolled dumps are still major features of waste disposal in most parts of Ghana (Quartey, et al., 2015). Open refuse dumps are most commonly located at the perimeter of major urban centres in open lots, wetland areas, or next to surface water sources (Fobil, 2000). The majority of households store their waste in open containers and plastic bags in the home (Boadi and Kuitunem, 2005).

Environmental Attitudes (EA) are a psychological tendency expressed by evaluative responses to the natural environment with some degree of favor or disfavor (Milfont & Duckitt, 2010). The individuals' attitudes towards environmental sanitation in the present investigation show that some people are ignorant of what they do to the environment while others are aware of the negative attitudes towards the environment, they still pollute the environment with the view that there are no litter bins around and the few ones there too, whenever they are full, it takes days, weeks, or months before they attend to them.

2.6 Environmental Sanitation Policy

Ghana's National Environmental Sanitation Policy (ESP) was developed in 1999 in consultation with a variety of stakeholders and covers environmental sanitation including solid and liquid waste, industrial and hazardous waste, storm water drainage, environment and hygiene education, vectors of disease, and disposal of the dead (Republic of Ghana, 1999). The policy was developed by the Ministry of Local Government and Rural Development (MLGRD). In September, 2010, a revised Environmental Sanitation Policy of Ghana was produced. The overall goal of this new policy is to develop a clear and nationally accepted vision of environmental sanitation as an essential social service and a major determinant for improving health and quality of life in Ghana. The policy is a necessary tool required to help shape all efforts in dealing with the overwhelming challenges of poor sanitation in Ghana (Environmental Sanitation Policy of Ghana, 2010).

2.6.1 Institutional Structure

At the national level, four ministries are involved in environment and sanitation. The Ministry of Local Government and Rural Development (MLGRD), and the Ministry of Water Resources Works and Housing (MWRWH) are the primary ministries involved in policy making for sanitation and water. The other two ministries involved are the Ministry of Environment, Science and Technology and the Ministry of Health, handles health data, contributes to policy-making, setting standards, and hygiene education. Boadi and Kuitunen, (2004) indicated that some of the problems affecting environmental sanitation include weak institutional capacity and lack of resources, both human and capital.

2.6.2 Ministry of Local Government and Rural Development (MLGRD)

MLGRD is the lead agency in the sanitation sector. It is responsible for creating and coordinating sanitation policy, issuing guidelines on sanitation services and their management, and for supervising the National Environmental Sanitation Policy Coordinating Council (MLGRD, 1999). MLGRD has the overall responsibility for formulating environmental sanitation policies.

2.6.3 Ministry of Environment, Science and Technology (MEST)

The Ministry of Environment Science and Technology established a strong national scientific and technological base for accelerated sustainable development of the country to enhance the quality of life for all. The overall objective of MEST is to ensure accelerated socio-economic development of the nation through the formulation of sound policies and a regulatory framework to promote the use of appropriate environmentally friendly, scientific and technological practices and the intensification of the application of safe and sound environmental practices.

This environmental sanitation policy of Ghana can perhaps help improve the health and quality of life of the people in the country. In the sense that the policy must be enforced and strictly adhered to. This in turn would help reduce poor sanitation in Ghana for the betterment of the society.

2.7 Environmental Protection Agency (EPA)

The EPA in collaboration with the Waste Management Department or the Environment Health and Management Department of the assemblies, shall be responsible for the monitoring and enforcing environmental standards and regulations set up by the EPA and other national regulation agencies (ESP, 2010). The EPA is a regulatory body in waste management of Ghana. The agency prepares technical guidelines for the

metropolitan, municipal and district assemblies to be effective in their waste management activities (EPA, 2010). The EPA seeks to ensure environmentally sound and efficient use of both renewable and non-renewable resources, to prevent, reduce, and as far as possible, eliminate pollution and actions that lower the quality of life; and to apply the legal processes in a fair equitable manner to ensure responsible environment behaviour in the country.

Therefore, the EPA by extension in the present study relates in the sense that it's a regulatory body in waste management of Ghana, which ensures cleanliness of the environment by eliminating pollution in the metropolitan, municipal and district assemblies.

2.7.1 National Development Planning Policy Framework

The cross-cutting nature of environmental sanitation affects all aspects of human development. The Expanded Development of Production Infrastructure pillar of the Medium-Term Development Policy Framework (MTDPF, 2010 – 2013) prioritises environmental sanitation services as a key requirement for improving quality of life. This is consistent with the previous national development policy framework, the Growth and Poverty Reduction Strategy GPRSII (2006 -2009) in which Environmental sanitation is considered as a major component of the Human Resource pillar. The development policy frameworks are informed by the Millennium Development Goals (MDGs), New Partnership for African Development (NEPAD) and above all by the underlying obligations set out in the Constitution of the Republic of Ghana. Hence, the mandate of the National Development Planning Policy Framework in the present study needed environmental sanitation to be a key for improving the quality of life of the people.

2.7.2 Elements of Sustainable Environmental Sanitation Development

The Environmental Sanitation Policy (1999) identified a number of basic elements and the strategies to promote accelerated development of the sector. These include:

- a) Formal establishment of environmental sanitation as a sub-sector within the national development programme;
- b) Rationalisation of institutional objectives and functions at all levels, including delineation of responsibilities and the establishment of inter-agency linkages;
- c) Establishment of the National Environmental Sanitation Policy Coordination Council within the Ministry of Local Government and Rural Development;
- d) Establishment of a National Environmental Sanitation Day to be observed one day in a year by all citizens;
- e) Development and strengthening of the community's role in environmental sanitation;
- f) Development of human resources and strengthening institutional structures for managing environmental sanitation;
- g) Assigning delivery of a major proportion of environmental sanitation services to the private sector through contract, franchise, concession and other arrangements;
- h) Development of a strong legislative and regulatory framework, and capacity for supervising environmental sanitation activities and enforcing standards;
- i) Promotion of research to review sanitation technologies;
- j) Identification and dissemination of cost-effective, appropriate, affordable and environmentally friendly technologies to address environmental sanitation needs;

- k) Adoption of the cost recovery principle in the planning and management of environmental sanitation services.

In a way, these elements arguably have effectiveness of implementing the policy objectives and measures in the present investigation. The policy has to take forward actions particularly those that were not implemented, sustained or have failed to yield the desired results. These elements would help promote accelerated development on environmental sanitation.

2.7.3. Outputs /Targets

It is expected that by the year 2020 the following should have been achieved:

- a) National Environmental Sanitation Day is established by legislation and observed regularly;
- b) The National Environmental Sanitation Policy Co-ordination Council is established within the Ministry of Local Government and Rural Development;
- c) Environmental sanitation technologies are under regular review and continuous improvements;
- d) All solid wastes generated in urban areas are regularly collected and disposed of in adequate controlled landfills or by other environmentally acceptable means;
- e) All excreta are disposed of either in hygienic on-site disposal systems or by hygienic collection, treatment and off-site disposal systems;
- f) All pan latrines are phased out by 2010;
- g) At least 90% of the population has access to an acceptable domestic toilet and the remaining 10% has access to hygienic public toilets;

- h) Hygienic public toilets are provided for the transient population in all areas of intense public activity;
- i) Active sanitary inspection and vector control programmes are in place and the incidence of malaria, bilharzia and other vector-borne diseases is falling;
- j) Environmental standards and sanitary regulations are strictly observed and enforced;
- k) The majority of environmental sanitation services are provided by the private sector.

These targets will assist the current study in investigating the tenets of people living along the beaches concerning their environmental sanitation whether it has been achieved or not.

2.8 Causes of Environmental Sanitation Conditions

Individual's activities on the environment have tended to degrade and make the environment untidy and unfit for human habitation because of its poor sanitation nature (Uchegbu, 2000). Every human should have a healthy and productive life in harmony with nature (Ayres, 2000). It is expected that when the environmental sanitation standards of a city improves, there will be upliftment in the living condition and health security for the inhabitants. Thus, there will be progress in the quality and visual of the environment at large thereby making it habitable (Owoeye, 2013).

Open defecation is becoming alarming in our beaches in Ghana and Winneba beaches are of no exception. Some inhabitants of Woarabeba beach and Sir Charles beach in Winneba resort to open defecation with the reason that there is only one public toilet at the entire Woarabeba beach community and the Sir Charles beach respectively, which are not in good shape. So, the causal factors of environmental sanitation conditions will

form the hallmark of the current study in that individual's regular activities on the environment have degraded the environment making it untidy and unhealthy for human habitation.

2.9 Effects of Environmental sanitation

Poor environmental sanitation may have a major impact on the health and survival of humans living in the society. On the other hand, proper environmental sanitation brings about good health, sound living and a healthy environment. In fact, poor quality waters, poor environmental sanitation (excreta management, drainage) and poor sanitation contribute much to deteriorating population health (Ezzati, Utzinger, Cairncross, Cohen & Singer, 2005). Diarrheal diseases are caused by several parasites including salmonella (most frequent occurred) and are located in unhealthy environments, lack of adequate modern sewage system, or associated with poor environmental hygiene (Farthing, 2000). This situation is much more noticeable in most cities in developing countries where poor environmental and especially section of under five children are most affected by diarrheal diseases (Coulibaly, Diomande, Coulibaly, & Gourene, 2004 cited in Yapo, Mambo, Yapo, Seka & Houenou, 2013). In developing countries open dumpsites are common, due to the low budget for waste disposal and non-availability of trained manpower. Open dumping of MSW is a common practice in Pakistan. It also poses serious threat to groundwater resources and soil. The contamination of soil by heavy metal can cause adverse effects of human health, animals and soil productivity (Smith, Hopmans & Cook, 1996 cited in Syeda, Aroma, Beenish, Naima, & Azra, 2013).

According to Karley (1993), the health status of a community is affected by its state of environment. Thus, if the community is cleaned and well kept, it reduces the chances

of air pollution and its related diseases. However, if the community is filled with dirt and other bad practices of sanitation such as defecating along the beaches, dumping sewage into the sea, using the beach as a dumping site for plastic, liquid and solid waste, the beach community will be harboured with diseases such as malaria, diarrhoea, cholera, epidemic and other related infections which may pose a threat to people's health whenever they come in contact with the beach.

2.10 Strategies to improve Environmental Sanitation

Essien (2002) cited in Mohammed (2018) points out some strategies to improve environmental sanitation. They include:

1. Sanitation needs to be addressed as a whole including improvement of facilities, environmental conditions and behavioural change.
2. Sanitation programmes should be demand based and the community should be fully involved in the process. High risk group should be identified for better targeting of funds and efforts.
3. Sanitation should be a component of other health promoting or disease control programmes.
4. Awareness needs to be raised and sanitation set as a priority in national and local government and also in the population at large.

Sanitation issues could be addressed when toilet facilities, bathrooms and urinals at the beach communities are improved and kept in good shape. Public education on the need to keep the environment and maintain good sanitation should be given to the people living along the beaches. These strategies notwithstanding can form the springboard of the current study so that issues concerning sanitation could be addressed and promote the health of the people.

2.11 Information Education and Communication

Environmental Sanitation is both a public good and a civic responsibility involving all levels of human activity. Policy actions and how individuals, households and communities respond to them depend largely on how information is disseminated. Meaningful participation by citizens depends on effective education and communication processes.

The challenges and constraints identified include:

The challenge of managing increasing waste levels associated with growing economy (middle income status by 2020) and related life-style changes

- The challenge of widespread littering and indiscriminate dumping of refuse in drains and open spaces
- The threat of the use of wetlands and water courses as waste disposal sites
- The challenge of mainstreaming alternative uses of wastes through appropriate incentives
- Lack of sector-wide standards for service provision
- The challenge of sitting environmental sanitation facilities acceptable to communities
- The challenge of increasing disease burden from poor environmental sanitation
- The challenge of effective collaboration among ministries and agencies to jointly implement cross-sectoral policies and strategies

Improving the attitudes and behaviour of individuals, households and communities towards environmental sanitation remains central in any effort aimed at making sustainable progress. This policy aims at enhancing the knowledge, attitudes and practices of individuals, households and communities as partners in improving the

standard of living. Education plays a very important role in shaping individual behaviour (Hungerford & Volk, 1990).

Most of the sanitation practices at the beaches are attitudinal. Hence, information, education and communication is a salient endeavour in this study by making the people aware of sustainable progress on the environment through education and informing them about the attitudes they have to exhibit to maintain good environmental sanitation.

2.12 Legislation and Regulation

Environmental Sanitation involves a wide range of actors with different levels of responsibilities and therefore laws are required for regulating activities. Responsive regulations that provide the right incentives are necessary to improve on enforcement management which has been identified as a critical area among others, including:

- Weak and/or outdated and poorly enforced environmental sanitation legislation
- Non-enforcement or inadequate regulations governing marine pollution
- Inadequate /non-enforcement of regulation preventing the use of wetlands and water courses as waste disposal sites
- Inadequate/non-enforcement of safeguards for preventing groundwater contamination from poor environmental sanitation practices
- Lack of regulation for mainstreaming alternative uses of wastes through appropriate incentives
- Inadequate sector-wide standards for service provision
- The challenge of preventing trans boundary dumping in a free-trade regime
- The challenge of not incorporating and adhering to international conventions into domestic law.

Bye laws on sanitation must be enforced by the Municipal Assembly and must be adhered to by the inhabitants living along the beaches. Departments such as the Town council under the auspices of the Municipal Assembly should have regular inspection on the environment to ensure proper practice of sanitation. Finally, legislation and regulation in this study in terms of an open door is a key role in controlling environmental pollution.

2.13 Functions of the Municipal Assembly

Under the Local Government Act, Act 936 of 2016, the Municipal Assembly is the highest deliberative, legislative and executive body in its area of jurisdiction. In the pursuit of these deliberative, legislative and executive functions, the Assembly is the principal organization responsible for the following, among others:

- The overall development of the Municipality.
- The formulation of programmes and strategies for effective mobilization and utilization of human, physical, financial resources in the Municipality.
- The promotion of and support for productive activities for social development within the Municipality and to remove any obstacles which militate against development initiatives.
- The initiation of programmes for the development of basic socio-economic infrastructure and municipal services.
- The development, improvement and management of human settlements and the environment within the Municipality.
- The maintenance of security and public safety within the Municipality.
- The provision of scholarship for needy students at all levels of studies.

- The establishment, maintenance and carrying out of services relating to the removal of liquid waste from any building and the destruction of the waste.
- The establishment, maintenance and carrying out of services relating to the removal and the destruction of the solid waste.

The Municipal Assembly being the highest legislative and executive body in its area of jurisdiction has the ability to cause development in the Municipality. This means that the Assembly is in charge of safe drinking water, sanitation practices such as proper disposal of waste, maintenance and carrying out of services that relate to solid and liquid waste.

2.14 Summary

Looking at the reviewed literature above, Adhlakum (2003), promotion of environmental sanitation quality depends on how households and community see themselves in relation to their environment. Therefore this study seeks to find out if environmental sanitation at the beaches is a major concern to inhabitants living along the beaches. In the words of Quartey, et al., (2015), the latest increase in waste disposal problems in Ghana can be attributed to people's over-all attitudes and perceptions towards wastes. Based on the literature concerning the over-all attitudes and perceptions of people towards waste management, the study also seeks to find out if open dumps and waste management at the Winneba beaches are attitudinal and also find out if these problems discussed above could be found in the study or it will also bring a new finding.



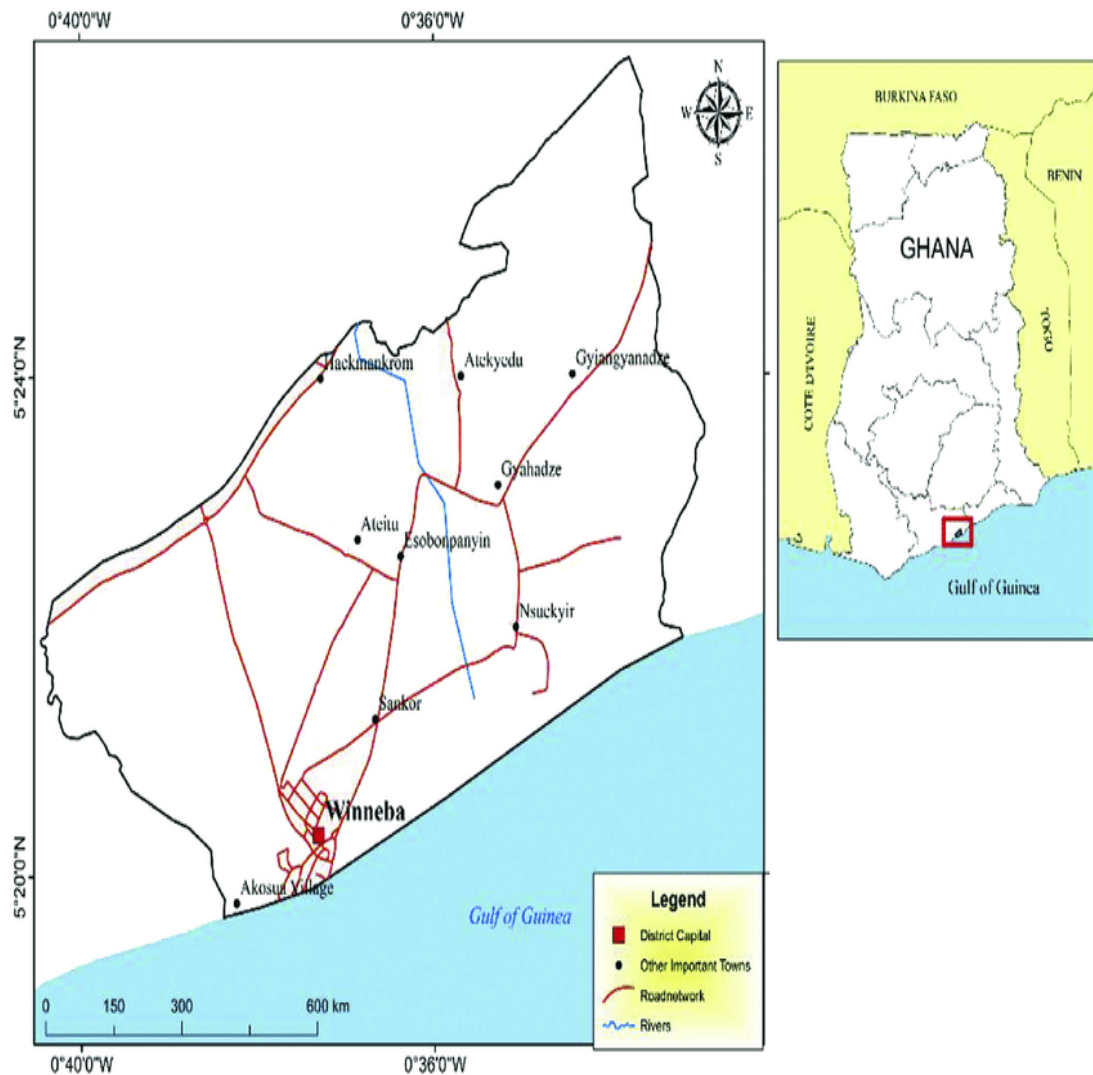
3.0 Overview

This chapter describes the research methods and techniques used for the study. It includes: Research approach, Research design, Population of the study, Sample and Sampling techniques, Instrument used for data collection, Procedure for data collection and Data analysis.

3.1 Study area

Winneba is a town and the capital of Effutu Municipal Assembly in Central Region of South Ghana. The population of Effutu Municipality according to the 2010, population and Housing Census is 68, 592 representing 3.1 percent of the region's total population

of 2,201,863. Winneba, traditionally known as Simpa, is a historic fishing port in south Ghana, lying on the coast, 140 kilometres (90 miles) east of Cape Coast and located 56km (35mi) west of Accra. Winneba has three beaches called the Sir Charles beach, Royal beach and Woarabeba beach. The main industries of Winneba are fishing and services. It is known for the Aboakyer festival (deer-hunting festival) and New Year fancy dress carnival or masquerading festival.



Source: Researchgate.Net

Figure 4: Map of Winneba

3.2 Research approach

Qualitative approach was adopted for the study. According to Miles and Huberman, (1994), qualitative methods place primary emphasis on saturation thus, obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired. Leedy and Omrod (2001) indicate that qualitative research is typically used to answer questions about the complex nature of phenomena, often with the purpose of describing and understanding the phenomena from the participants' point of view. According to Bryman (2004), qualitative research is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data. The qualitative researcher seeks a better understanding of complex situations. Qualitative research has the aim of understanding experience as nearly possible as its participants feel it or live it (Sherman and Webb 1988, p. 7).

According to Berg (2007, p. 8), qualitative researchers are most interested in how humans arrange themselves and their settings and how inhabitants of these settings make sense of their surroundings through symbols, rituals, social structures, social roles, and so forth. Through qualitative techniques, Berg (2007, pp. 8-9) suggests, researchers are allowed to share in the understandings and perceptions of others and to explore how people structure and give meaning to their daily lives. Shank (2002) defines qualitative research as “a form of systematic empirical inquiry into meaning” (p. 5). By systematic he means “planned, ordered and public”, following rules agreed upon by members of the qualitative research community. By empirical, he means that this type of inquiry is grounded in the world of experience. Inquiry into meaning says researchers try to understand how others make sense of their experience. Denzin and

Lincoln (2000) claim that qualitative research involves an interpretive and naturalistic approach: “This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them” (p. 3). Qualitative approach was used for the study because it helped the researcher to understand opinions, and experiences of respondents as the participants feel it. So in this study the qualitative research has given a complete understanding of the event, situation or the case of sanitation practices along the Winneba beaches.

3.3 Research design

A research design is much more than a work plan. The design is the logical sequence that connects the empirical data to a study’s initial research questions and, ultimately, to its conclusions. De Vos (1998) is of the view that research design is a blueprint that serves as a framework on the basis of which the researcher can plan and conduct the study. A research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of a study (Yin, 1994). The main purpose of the research design is to help avoid a situation in which the evidence does not address the initial research questions (Yin, 1994). The researcher used the case study design to conduct the research. Mitchell (1983) defined a case study as a “detailed examination of an event (or series of related events) which the analyst believes exhibits (or exhibit) the operation of some identified general theoretical principles” (p. 192). According to Yin (2009), the goal of case studies is to understand complex social phenomenon and real life events. Case study contributes uniquely to our knowledge of individual, organizational, social and political phenomena. “A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2009:16). As Yin said, one should use a case study strategy

because he or she deliberately wants to study contextual conditions. According to Gomm, Hammersley, and Foster (2000), case study refers to research that investigates a few cases in considerable depth. Gomm, et al. (2000) argued that a case study implies collection of unstructured data and qualitative analysis of data. Case study research is said to allow for in-depth review of new or unclear phenomena whilst ‘retaining the holistic and meaningful characteristics of real-life events’ (p. 4). It is suggestions such as these that have seen the simple case study become recognized as more than merely a research method, but as a design in its own right (Hartley, 2004). Yin (1994) explained that a case study is a comprehensive research strategy that deals with situations “in which there will be more variables of interest than data points,” “relies on multiple sources of evidence, with data needing to be converged in a triangulating fashion,” and that “benefits from the prior development of theoretical propositions to guide data collection and analysis” (p. 13). Stoecker (1991) explained that case studies allow researchers to explore different outcomes of general processes suggested by theories depending on different contexts. In this study I therefore explored the Winneba beaches and its environs so as to allow for in-depth review of the phenomena of sanitation practices of people living along the Woorabeba beach and Sir Charles beach.

3.4 Population of the study

The population of the study was the inhabitants of Winneba. The targeted population for the study was residents along the beaches of Winneba.

3.5 Sample and sampling techniques

A sample is a set of elements selected in some way from a population. According to Schofield (1996), the aim of sampling is to save time and effort, but also to obtain consistent and unbiased estimates of the population status in terms of whatever is being

researched. Convenience sampling technique was used to select a sample size of 20 participants who live along the beaches of Winneba for the study. It is a type of sampling where the members of the sample are selected on the basis of their accessibility. The respondents selected are easily accessible to the researcher. Eight respondents were selected from the Woarabeba beach and seven respondents were also selected from the Sir Charles beach of Winneba. The respondents were selected based on their accessibility and willingness to participate in the study at the Winneba beaches. The study employed the two beaches because those ones were most patronized by the people thereby causing them to be dirtier. Convenience sampling (also known as Haphazard Sampling or Accidental Sampling) is a type of non-probability or non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study. It also referred to the researching subjects of the population that are easily accessible to the researcher.

3.6 Instruments used for data collection.

The instruments that were used in the study to collect data were interview guide and observation checklist. According to Edwards and Holland (2013), a basic tool for researchers in asking questions in qualitative interviews is an interview or topic guide. This guide is a list of questions or subjects that need to be covered during the interview, sometimes in a particular order and way (semi-structured), sometimes not (in-depth). The interviewer follows the guide, but as part of conversation during the interview is able to pursue topical trajectories that may stray from the guide when he or she feels this is fruitful and appropriate. Whether conducting a semi-structured or unstructured qualitative interview, in developing their question or topic guides researchers take into

consideration: the focus of inquiry; what they want to learn from the person they are speaking with; how much time they have available and the kind of access they have; and how much they already know about their research topic.

Interview guides can be quite specific, covering types of questions and how they should be asked (Edwards and Holland, 2013). In-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program, or situation (Boyce & Neale, 2006).

An interview is a conversation for gathering information. A research interview involves an interviewer, who coordinates the process of the conversation and asks questions, and an interviewee, who responds to those questions (Easwaramoorthy & Zarinpoush, 2006). Semi-structured interview was adopted for the study. In a semi-structured interview, the interviewer uses a set of predetermined questions and the respondents answering in their own words. Some interviewers use a topic guide that serves as a checklist to ensure that all respondents provide information on the same topics. The interviewer can probe areas based on the respondent's answers or ask supplementary questions for clarification. Semi-structured interviews are useful when there is a need to collect in-depth information in a systematic manner from a number of respondents or interviewees (Easwaramoorthy & Zarinpoush, 2006). According to Kusi (2012), semi-structured interviews are flexible to a greater extent, feelings and experiences freely, and the interviewers have the freedom to divert from questions in the schedule to seek clarifications (using probes) during the interview process. In addition to interviews, I also conducted non-participant field observation as part of the data collection exercise. This involved direct observation of sanitation practices of people

who live along the Woarabeba beach and Sir Charles beach. Direct observation was used because it gives me insights of what the respondents were actually doing rather than what they said they were doing. Waste disposal sites, beach sanitation, toilet facilities were also observed to gather data. I also took pictures of heaped wastes along the beaches of Winneba. The observation enabled me to gain first-hand knowledge of the respondents at the beaches and its environs.

Observation is used in the social sciences as a method for collecting data about people, processes, and cultures (Kawulich, 2012). Observation is the systematic description of the events, behaviors, and artifacts of a social setting (Marshall & Rossman, 1989, p. 79). Observations may be used to triangulate data, that is, to verify the findings derived from one source of data with those from another source or another method of collecting data. For example, one may use observation to verify what is learned from participants in interviews. Observations further help in learning what is important to the participants. They help to determine how much time is spent on various activities, verify nonverbal expression of feelings, and determine who interacts with whom (Schmuck, 1997). Observation provides the opportunity to provide rich, detailed descriptions of the social setting in field notes and to view unscheduled events, improve interpretation, and develop new questions to be asked of informants (DeMunck & Sobo, 1998). Observation is an excellent tool for collecting data in a variety of situations, and it requires a good memory and extensive note taking. Observations are useful to researchers who wish to understand more about the situation under study. The field notes that summarize observations can provide rich detailed descriptions of the situation observed and help the researcher to later remember specifics about what was observed (Kawulich, 2012). Observations are a form of evidence that do not depend on

verbal behaviour and the method enables the investigator to observe the phenomenon under study directly (Yin 1982; cited in Baabereyir, 2009:128).

Observation checklist is used to record the behaviour of the participants. As recommended by Leech and Onwuegbuzie (2007), a researcher should leave an audit trail by documenting every single step of the research procedures, including activities, interviews, member-checks, and analysis of data. Observation is a method of data collection in which researchers observe within a specific research field. Checklists help you to collect data through observing which types of activities are occurring in the setting. In the example below, the researcher is attempting to determine the types of activities that occur in a particular setting (Kawulich, 2012). By listing possible activities one may observe in a particular setting, individuals are better able to focus on what actually occurs, rather than trying to capture everything that happens, much of which may not be applicable to the study.

3.7 Procedure for data collection

An interview guide to examine the sanitation practices of people living along the Winneba beaches was employed for the study. The participants were engaged to respond to items in their own convenient times. (Check Appendix B for the interview guide). The researcher used the interview guide as a guide to interview participants on their sanitation practices at the beach.

The researcher observed the people who live along the Winneba beaches and their sanitation practices and report accordingly. Thus, the study adopted observation checklist to observe activities of beach dwellers on how frequent they litter the beaches, whether they have placed dustbins at vantage points and how frequent they empty the bins, how often they defecate along the beaches etc. This was done early morning to

check the activities of the inhabitants at the beaches. (Check Appendix C for the observation checklist).

3.8 Data Analysis

The data was analysed based on emerging themes and patterns. Qualitative analysis according to Bogdan and Biklen (1982) “involves working with data, organizing them, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others” (p. 145). Audio tapes were transcribed and transferred from spoken to written word to facilitate analysis. All interviews were transcribed from Fanti to English after listening to the tape several times. The transcribing was time consuming as each interview took an average of 5 hours to transcribe.

The themes began to emerge with the initial reading of each script and the coding was done electronically (using the computer). While listening to the recorded interview, I took notes of specific words and phrases and made notes on them. I coded every single piece of data regardless of its importance and relevance to the subject I was exploring, and organized the codes (words and phrases) from the interviews and removed all duplications to make a list of codes and looked for any similar categories. The purpose of coding was to acquire new understanding of a phenomenon of interest and describe the phenomenon. I reduced these categories by grouping them together into similar patterns, looking for dominant themes, common threads and contradictions.

3.9 Trustworthiness

A pilot study was conducted in Apam beach to ensure the trustworthiness of the data. Apam beach was selected because it shares similar characteristics with Winneba beaches in the selected region. The pilot study enabled the researcher to restructure the

interview guide to help elicit the right responses. This data (collected in this interview) was not included in the analysis. According to Kusi (2012), one of the most popular criteria for judging the quality of a study located with the qualitative framework is the trustworthiness criteria. The elements of the criteria are credibility, transferability, dependability and confirmability. In the words of Anigwe (2013), credibility is a verdict of whether or not the findings reported represents a credible or straightforward understanding of the data drawn from participants' original data. Merriam (2009) posited that trustworthiness of a research depends usually on credibility of the researcher. Anigwe (2013) further explained that the researcher needs to seek validation from the participants by submitting findings to them for review. In that case, the researcher adopted measures such as member checking and peer review. For member checking, the participants were given the privilege to review a summary of their transcribed data. Also, the researcher solicited a peer to assess a sample of the transcripts and offer sincere estimation on the findings.

3.10 Ethical consideration

In the words of Tanor (2011), protection of participants is very crucial in any research activity. In this case, guidelines for ethical protection of participants were considered.

- i. Consent of respondents was sought before the study was conducted.
- ii. Confidentiality - information given by respondents was treated with much confidentiality and only used for the purpose of the study.
- iii. Anonymity - real names of study subjects was changed to pseudonyms.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF DATA

4.0 Overview

This chapter presents the results gathered from the respondents' (people living along the Winneba beaches) responses to the interview guide. It also contains the analysis of the various responses from both inhabitants who live along the beaches of Winneba. It presents results of analyses of the responses received during the interview with people living along the beaches of Winneba. The analysis covers the behaviour of the people towards beach sanitation, participants' awareness of environmental sanitation at the beaches, waste management strategies put in place at the beaches and the effect of poor sanitation at the beaches. All the data collected were analyzed based on the objectives and research questions raised in the study. Five themes were identified within the data collected, these were:

1. Current environmental sanitation at the Winneba beaches.
2. Level of knowledge of respondents about beach sanitation.
3. Factors responsible for environmental sanitation at the Winneba beaches.
4. Effects of poor sanitation practices at the beach.
5. Clean up strategies at the beaches.

4.1 Background data on the selected respondents living along the Winneba beaches.

An interview was conducted. The interview guide presents the findings of an examination of an aspect of social problems in Ghana: Sanitation practices of people living along the Winneba beaches. The data was collected through observation and interview. Fifteen respondents who live along the beaches of Winneba were selected from the Effutu Municipality in the Central Region of Ghana.

The areas the researcher focused on included the environmental Sanitation situations in Winneba beaches, level of knowledge of respondents about sanitation conditions at the Winneba beaches, factors responsible for current environmental sanitation situation along the Winneba beaches and finally the effects of poor environmental sanitation. In all, four research questions were raised to guide the study. The research questions have been stated in the presentation of the results.

Table 1: Socio- Demographic Characteristics of participants

Variable	Subscale	No	%
Age	Below 18 years	3	15
	18-50 years	15	75
	55+ years	2	10
Gender	Male	9	45
	Female	11	55
Educational Level	Basic	5	25
	Secondary	4	20
	University	3	15
	Not at all	8	40

Source: Field data, 2019.

From Table 1 the results on age of participants came out that out of 20 participants sampled for the study, 3 participants representing (15%) were below eighteen years, 15 participants representing (75%) were between the ages of eighteen and fifty years and

2 participants representing (10%) were fifty-five years and above. Regarding gender, eleven (11) were females representing 55% and nine (9) were males representing 45%. On the question of their educational level, five (5) of the respondents said they completed basic school, four (4) completed secondary school, while three (3) completed University, and eight (8) did not have any formal education. The data revealed that majority of the participants were between the ages of 18-50years representing the active part of the population. This implies that active labour force of the population patronize Winneba beaches causing the environment to be dirty. The implication regarding participants level of education indicates that majority of the inhabitants are illiterates causing the environmental sanitation at the Winneba beaches to be dirty at all times.

4.2 The analyzed data are now presented based on the research questions formulated for the study

Research Question 1: Environmental sanitation at the Winneba beaches.

In an attempt to answer the above question, the researcher used items 1, 2 and 3 of the interview guide and items 1, 2, 3, 4, 5, 6, 7, 8, and 9 from the observation checklist.



Source: Field survey, February, 2019.

Figure 5: Environmental sanitation at the Winneba beach.



Source: Field survey, February, 2019.

Figure 6: Environmental sanitation at the Sir Charles beach.

Responses indicated by four (4) inhabitants living along the Winneba beaches reveal that at first the place was indeed dirty. But now it is cleaned unlike it used to be. There was no street and the community was filled with dirt. The place looks very dirty and there was filth all around and there was a lot of bushes around too. Now, the inhabitants are still on it, to make their surroundings and the beach neat, though the beach is not always neat. Now they are improving when it comes to sanitation because there is a gradual change and there is progression in terms of cleanliness along the Woarabeba beach. They announce to the people whenever the sea brings filth to gather the filth and allow them to dry before burning them. Every weekend and on some occasions especially on Tuesdays, the women clean the surroundings and burn the rubbish gathered. As for sanitation, to be sincere with you, the women try their best by sweeping around and burning the refuse. But our major challenge is toilet facilities and water. Though there is a toilet here, it wasn't constructed well, if care is not taken it can break and you will fall in-to it. So, they are now constructing a new one, but they are not even done. So now the only option for them is to use the beach or the bush as their toilet facility.

Respondent "D" indicated that every canoe has an owner and after they are done with the harvesting of fishes, our chief taught us that every canoe owner picks at least one woman to be cleaning the canoe and around the canoe and gives them some fish. Every canoe has someone who cleans around it. So it means that a place where there is no canoe, no one sweeps there or tidy that place. Also, some of the canoes have worked to some point and are not working again. Now what we do is every place that there is a canoe we have people who work there in that case, some places has been abandoned

when it comes to sanitation. That is those who manage the canoes have women who work in the canoe and around the coast where the canoe is. After cleaning the canoe and around it, these women are given fish as a token (these fishes are given to the women by the fishermen or the canoe owners). But as for the various areas where we dump our refuse and burn it, is kept clean. They also have places where canoes are there, but because such canoes are no longer working, no one cleans around such canoes and these places are always dirty.

About two months ago, a milo game was held here and they did very well. They really cleaned the beach. But the people who came were very angry because of the lot of dirt created by us (the inhabitants). They really insulted us and if someone had responded to that, it would have led people to prison. When they were about to leave, they told us they are giving us three months, if they come and the beach is still dirty, and we don't clean the place, they will take the chief and other people in charge of the beach to court. So considering what they said, even those who came from afar are cleaning the beach, how much more we the people who are living here, eating and sleeping here and we are not sweeping and making our environment clean, it means they are not doing their responsibility.

Respondent "D" continued by saying that when we look at the world today, there is modernization, so we also have to be modernized. One thing is, at first the Zoomlion people used to come around to work and they use to complain that when they work, they don't get paid. So what we have done is we have created areas within the community and every area has a leader. So when it is the time to work, the women know where they are supposed to work and the men also know where they are supposed to clean. We do the cleaning according to the areas where we are staying.

Seven (7) respondents indicated that when we talk of sanitation at the beaches it is worse. At first it was improving because the Zoomlion workers used to clean everywhere, thus under the coconut trees, backyard, refuse dump, the beach etc. but now because they don't do it, often the environment is not always clean.

Respondent "B" explained further that at first, we were having a place used as dumping site but now they have sold most of the lands. Right now there is a private school close to us, that place used to be a refuse dump. But because we don't have a specific place as dumping site, the people or inhabitants dump refuse indiscriminately/anywhere.

Respondent "C" is of the view that some of the people don't keep their backyards where they dump their refuse clean. Sanitation at the beaches is the responsibility of all since almost all the fish we use emanate from that place. It is therefore eminent that we all come together to clean the environs as often as possible. Contrary to the above, most people use it as their defecating grounds for setting about the consequences for example diseases like cholera and other diarrhoea diseases. Others also instead of using or obtaining household containers to dump their refuse and pay a token at the end of the month, decide to dump openly at the beach causing the same nuisance above. So what I see at the beach so far as sanitation is concerned is no wo/man's business after leaving the place untidy most of the time (Environmental Health Officer).

Two (2) respondents are of the view that at first Zoomlion workers used to clean the place but they do not come any longer. So they have been cleaning the place by themselves especially our backyards. At first, as the government did we used to have people who clean here every blessed day but their contract has ended. More than months and it's getting to a year, the Zoomlion has stopped coming. Another respondent is of the view that when they sweep, they dig a big hole to bury our rubbish. The only

challenge is that when we are working some will not participate and it will be left with few people working. So because of that we don't allow some of them to dump their refuse in the hole, so as much as we dump the refuse in the hole, then we will be sweeping around, and burn it when it is full, then we bury it and dig a new one.

As time goes on, we go to the beach and clean around. But we have relaxed when it comes to the beach because they brought Zoomlion workers around and we just concentrate on our surroundings. Now that the Zoomlion workers are not working, we ourselves go there and work on the beaches (women), at other times too; the men also gather themselves and go to the beach to play there. If we are unable to work on the stipulated time, we then postponed it to another week to clean the beach.

According to the chief of Woarabeba beach, once in a while they go to the beach and clean. They usually clean their households (environs) but hardly go to the beach to clean. That brings dirt to their environs because visitors come to the beach to sell and buy things like sugar cane. Buyers patronize them, chew it there and leave the rubbish behind. Some dirt comes from the beach itself and some from Winneba town. Periods or times just before full moon the water level rises and dumps some dirt in it at the shore (tree trunks, plant remains). Sometimes, the dirt doesn't come from only our households but from the sea. When the sea is boisterous, it brings dirt and leaves them at the shore. When they are left there, within a month's time it is burnt by itself and becomes black. And when you walk on it bursts "pow pow". That type of dirt is from the top or surface of the sea we call it "epo so nwoara" in Fanti. And the other type from the sea bed is called "daadze so nwoara" in Fanti.

When fishermen cast their nets into the sea, it includes not only the fishes but some weeds. They, separate the fishes from the weeds, harvest the fishes and leave the weeds

behind. Sometimes, they make them dig a hole at the shore and bury the weeds. It means the bigger portion of the dirt along the Winneba beaches are not only caused by the people living along the beaches but people from Simpa (Winneba) who come to the beach to sell and the sea itself also brings dirt.

Another respondent is of the view that when the chief talks about sanitation, they don't mind him. So he too, he has to rest. So he believes when you clean your house that is it, you are done.

Are the beaches cleaned and well maintained?

In the words of the Environmental Health Officer, the coastline of Winneba for example at Akosua village is clean all the time as the population is less and the occupants also decided not to dump elsewhere.

- a. Youth employment, have deployed some of its staff who clean the beach but are only few who can clean only a small portion at a time.
- b. Occasional clean up campaigns organized by the Environmental Health Staff, Assembly member and the chief fisherman also help to clean the place. Organized groups eg. National Service personnel come there to clean the place by inviting Zoomlion who have the tools and labour to assist them. The Municipal Assembly has also started constructing toilet facilities along the beaches which will go a long way to prevent people from defecating indiscriminately.

So as you clean here, how is the market? (Restaurant operator at Sir Charles beach)

The problem we face here is that normally people come here with their own stuffs, and when some finish eating they dump the rubbish indiscriminately. Others also ask for dustbins they can dump their refuse in. At other times too, I give people money so that they clean the beaches and its surroundings. But if I do not ask people to clean the beach and pay them at the end of the month, the rubbish will be there and the sea will come and wash them by itself /take the rubbish back to the sea. Sometimes it will bring them back and at other times, wipe it again. I have even approached them before (Zoomlion) and they said if they give me the dustbin, every month I have to pay 30.00 Ghana Cedi's and here too if you will take dustbins too, you have to take more than 5 dustbins. But during the immediate passed government era, when they were still coming here to work, every morning they come and work. It was only on Saturdays and Sundays that they did not come. So at times I even organize parties for them especially during the Christmas or the New Year just to encourage them to work harder. They are the same people I sometimes pay them 150 Ghana Cedi's to clean the beach for me even if I will let them come and clean here, it will be after 7th March, thus 8th March because 6th March is a holiday and a lot of people come here and because no one is also charged, the dirt/filth becomes more.

Where do you dump your refuse?

When it comes to dumping site, ten (10) people indicated that when they gather the refuse they put them at their backyard; the town is long so they keep the rubbish at their backyards and burn it on their own. Also, there is no vehicle to transport it, and they also want the place to be neat, the women dump it at the dumping site and every two weeks, they sweep there and burn it. Also the wastes from their households are gathered

and within a week or two, they burn it. But with the household waste, it worries them because it has to take one or two weeks before. So someone who doesn't have time for creation of pit for refuse just dumps his or her refuse anywhere or indiscriminately.

Two (2) respondents said they use shovel and rake to gather the dirt and after that they dig a hole but if they are unable to dig a hole, the men dig the hole for them to bury the waste. The other respondent explained further that because he is a fisherman, whenever he goes for fishing, and they sleep at a particular place, the sea can be boisterous the next day, and there is something they call in Fanti "aban", (weeds from the sea) so the fishermen have to move from there to a different place. Meaning they have to sweep that place and hence they moved to a different place. In that case, the women who help us clean around our canoes at times follow us to help clean the coast. But I am pleading with you if we can get a big dustbin from Zoomlion so that we dump the refuse in, so that when it is time they come for it, and the community will be much neater.

One respondent is of the view that they don't have refuse dump for now. This is because people are building, so they are always looking for a different place to dump their refuse. It's a big challenge for them because they don't have a specific place for dumping refuse. Another respondent said since they don't have a refuse dump, there is a forest at the back that is where they dump their refuse.

As you are selling here, do your customers or the people ask you where they are supposed to put their rubbish/ dump their rubbish? (Food vendor at the beach)

Some ask, others also just dump their rubbish anywhere at the beach. Those who ask are even more than those who do not ask for refuse bin. This shows that if we have dustbins at vantage points over here, majority of them will not litter at the beach.

According to the Environmental Health Officer, people living along the coast dump their refuse in three ways;

1. Some of them have dustbins obtained from Zoomlion or the Municipal Assembly where they dump their refuse and pay a token at the end of the month (GH cedi's 25.00). The refuse is lifted twice in a week and sent to the final deposit site.
2. The second group also dumps their refuse in communal containers on pay as you dump basis. The communal container is also removed anytime it's full to the same dumping site.
3. The last group is those who dump anywhere they find available, e.g. along the beaches, drains and any other open space.

Research Question 2

Level of knowledge of respondents about beach sanitation.

The purpose of this question was to ascertain the level of knowledge about sanitation of the people living along the Winneba beaches. Items 4 and 5 of the interview guide were considered.



Source: Field survey, February, 2019.

Figure 7: Woarabeba beach filled with waste.



Do you have a special day set aside for cleaning?

Responses indicated that the people of Woarabeba beach and Sir Charles beach/Akosua village do general cleaning. Four (4) respondents from Woarabeba community said they do the general cleaning mostly every two weeks and it is done on Tuesdays.

Five (5) respondents from Akosua village also said they do their general cleaning in a month or two and it is done on Tuesdays.

Three vendors at the Sir Charles beach indicated that they don't have any special day set aside for general cleaning at the beach but whenever they come to sell, they sweep the compound and clear the rubbish.

Two (2) respondents said they do the general cleaning when they see that the environment is very dirty, they announce it so that they all clean the environment.

Do people partake in the general cleaning?

Eight (8) respondents said they do partake in clean-up activities. Sometimes they have to use other measures that will scare them a bit, for instance, they sometimes tell them workers from town council from the Effutu Municipality will come around for inspection. The moment they hear that almost all of them participate in the activity. One respondent said even the young ladies help us, as we are cleaning and the young guys also dig the pit for us and the children and ourselves will be filling the pit with the refuse. They are our future generation so we are training them as well. Sometimes the young men weed for us and the ladies also gather the weeds and burn them.

Respondent "H" said when you ask them to partake in the cleaning; they begin to tell you that you are an old man that's why. But when they work, it's good so they should work. To be frank with you, what I am telling you is the truth. When the chief talks about sanitation, they don't mind him. So he too, he has to rest. So I believe when you clean your house that is it, you are done.

Respondent "I" said, when their elders announce it, they would make sure they participate so that in future when they are not there they can also say that Woarabeba community is one of the best beaches. Unfortunately, the youth don't fully participate in practicing sanitation. And this is as a result of this, because most of the youth also engage in fishing and get some income and, when the elders talk about sanitation they

don't take them serious. That is why I earlier suggested the issuing of a paper on sanitation so that they will know that it is from the government or the municipality. And the moment they attach punishment to it, the moment it comes all of them will put their best to work when it comes to sanitation.

As a youth, in what ways can you help the rest of the youth to fully participate in general cleaning?

Respondent "I" said he will talk to the youth in a polite way to know the benefits of sanitation. For example, he has been to school and knows the effects of insanitary conditions. So he can use that as an opportunity to educate the youth on good sanitation practices.

Do you have general rules for the fishermen concerning beach sanitation since the Zoomlion workers are no more working here for now?

Respondent "C" said we have general rules made by our chief, the elders of the Woarabeba community and the chief fisherman which spells out that whenever net owners cast their nets and rubbish are included, they shouldn't put them at the beach but rather use shovel to dig a pit and bury the rubbish.

Has the community experience any form of serious disease or epidemic?

One respondent replied that its malaria that always disturbs them and before then they were not having enough cars here as it used to be now because getting a car was a big headache unlike now that we have a lot of taxis around. And it is mosquitoes that bring malaria.

Respondent "B" said at first, even where we are sitting right now, they used to defecate around; they even used to bury people here. There was a serious epidemic and at that time there was no road here, no toilet and cars weren't coming here often and behind

us also lays the lake. And at times the lake will be full and no one can use that route. And at that time there was only one hospital in Winneba and that was the municipal hospital. But because the place was bushy and cars weren't coming here often, by the time the patient gets to the hospital, the person is announced dead. It was cholera that was killing us. If care was not taken, by now this community would have lost all her members because of cholera. Oh, you have made me remembered my tragedy!

Three (3) respondents replied that what they always hear of is malaria.

Do you have dustbins to put your refuse in?

All fifteen respondents said no they don't have a refuse bin, they only burn the rubbish or dig a hole or a pit to bury the rubbish.

Please do you have a public toilet?

Seven (7) people from Woarabeba beach said they have one public toilet which is spoilt but they tried to roof it and look for someone to sit by it to be collecting money from those using it. Unfortunately, it is spoilt again and the toilet is only one, close to where the chief is. So imagine you are from afar in the community but want to use it, you might easily disgrace yourself.

Please do you have lights on the toilet?

No, they don't have light bulbs on the public toilet.

One respondent from Sir Charles/Akosua beach said they have one public toilet here and at the back there is another one.

Do you use the public toilet?

Yes we do because we can't defecate at the beach. But in the evenings or nights some people also defecate at the beach or shore thinking the sea will wipe or wash it.

What can be done to help those from afar in the community get easy access to the public toilet?

In an interview with the chief fisherman at Woarabeba beach, the people understand that before this public toilet was built, they searched around to get a better place for that because the moment they dig a hole, it will be filled with water because the place was watery and it was difficult to build a public toilet. Fortunately for us, when they were filling the road with gravels it made the ground harder, so because of that the water wasn't able to pass through the gravels to come out. Later on, we decided that the community is long, they wanted to do it for the various areas within the community but whenever they try, water comes out so they stopped. Had it not been that they would have built more for the community.

Can those who cannot come to the public toilet create small ones around their houses than to defecate at the beach?

According to the chief fisherman of Woarabeba beach, it is true because when there is announcement, the people can talk a lot about the elders in the community that they don't do the necessary things but whenever something good comes, and then they take it. But the people even used rope to check, but they did the project around June. And in that month too, is the rainy season. So I can suggest that for it to work; now we have only one public toilet which is not advisable. Let's do new ones (toilets) that have come that are one room (bio digester).

So now how can the government or the municipality help, if there is water underground?

They should check the timing which is the dry season but they can do the bio digester without any difficulty, thank you.

Please do you wash in the sea?

Six respondents from Woarabeba beach said the sea is there for us and we catch fishes from it because of the salt in the sea, we don't use it for any other thing aside fetching some to clean our fishes. We use the lagoon (baka) because it's nice when drinking it.

Seven people from Sir Charles/Akosua village said no, they don't wash in the sea because they have pipe around, they use it instead.

4.3.3 Research Question 3

Factors responsible for environmental sanitation at the Winneba beaches

The purpose of this question was to identify the factors responsible for the poor environmental sanitation at the Winneba beaches. Items 6 and 7 of the interview guide were considered. Ten (10) respondents replied that the sources of waste at the beaches of Winneba are mainly from their households and the sea. Thus, some of the wastes come from their households, and some emanate from (Bosompo) literally means the sea. Whenever the sea brings forth such dirt, "ye b dawur)" which literally means they beat the "gong gong"/ make announcement to assemble the entire community to gather such dirt and allow them to dry, and burn it. When we sleep at the shores it worries us because it makes the place dirty.

Four (4) respondents said the dirt is from the sea, their households/community and the people who come to the beach to sell and buy. The respondents said the wastes are from the community, the sea and those who come to the beach to sell and buy from Woarabeba beach.

According to the chief of Woarabeba, some of the dirt comes from the sea itself and some are from Winneba town. Periods or times just before full moon, the water or sea level rises and dumps some dirt in it at the shore (tree trunks, plant remains).

Sometimes, the dirt doesn't come from only our households but from the sea. When the sea is boisterous, it brings dirt and leaves them at the shore. When they are left there, within a month's time it is burnt by itself and becomes black. This type of dirt is from the top or surface of the sea we call it "epo so nwoara" in Fanti. And the other type from the sea bed is called "daadze so nwoara". When fishermen cast their nets into the sea, it includes not only the fishes but some weeds. They, separate the fishes from the weeds, harvest the fishes and leave the weeds behind. Sometimes, we make them dig a hole at the shore and bury the weeds. It means the bigger portion of the dirt is not only by the inhabitants living by the beaches but some from Simpa (Winneba) and the sea.

Another respondent from Sir Charles beach said the sources of waste at the Winneba beaches are from the people who come to the beach, households and the sea itself. But if he's grading, the dirt that the sea brings is about 40%. There are some seasons the sea can bring some weeds. It will continue to come for a whole two weeks, so if no one sweeps it or gather such weeds and clean the place, the sea will wipe it away by itself. But it comes here once in a year and it comes with different colours. The first one will wipe it, then the second one will come with a deep black colour and the last one will come with yellow again and it won't come again. The time the Zoomlion was here, whenever it comes, they always sweep and clean the place. And the weeds are plenty too, when they come from the whole land to the end. For instance this particular year, when it came, no one swept the weeds, and the sea has swept it off.

Another respondent said the sources of waste at the Winneba beaches are from:

- a. Households along the beach who do not have dumping facilities in their homes and also refuse to pay for those available.

- b. Fishermen and other persons who come there to trade but at the end have no dumping facilities available dump it at any place.
- c. Incombustible (non-flammable) materials dumped at anyplace during high tide are washed ashore to create problems.
- d. Last but not the least, waste dumped into drains and open spaces are washed to the beaches during rainfall.

One (1) respondent from Woarabeba beach said the dirt at the beaches is not from their households but they come from the sea. The sea leaves the rubbish at its shores and they sweep and gather them. Then they dig a hole and bury them.

For those who come to buy and sell things at Woarabeba beach, do you have rules and regulations or laws on how to prevent filth from their product?

One respondent explained that they don't have any laws with regards to the traders who come there to sell. But we have thought of it and our chief and his elders have to meet and make a decision on that. Because they cannot always come from Winneba and other neighbouring communities to make the place dirty and go.

Do the canoes bring waste?

Yes, the canoes and the nets bring waste from the sea. We have decided to hold a meeting so that canoe owners will also tidy their canoes so that the beach and its environs will always be cleaned.

According to the chief fisherman at Woarabeba, some of the canoes have worked to some point and are no longer working. Now what we do is every place that there is a canoe we have people who work there, and in that case, places have been abandoned when it comes to sanitation. That is those who manage the canoes have women who work in the canoe and around the coast where the canoe is. After cleaning the canoe

and around it, these women are given fish as a token. (These fishes are given to the women by the fishermen or the canoe owners). But as for the various areas where we dump our refuse and burn it, is kept clean. (me te do a, mesor). We also have places where there are canoes but because such canoes are no longer working, no one cleans around such canoes and these places are always dirty.

Where are the owners of the canoes which are not working?

The canoes are here but the owners are not in Woarabeba.

Once they are not here, have they asked people to look after it for them?

The nets are in the houses of people asked to take care of it but the owners are not here.

What do you think we do concerning those who are taking care of nets of people who are not around but are not cleaning the place?

This is my opinion, I think the owners should come and pack their nets, canoes, etc. to wherever they are. On the other hand, the people who are keeping the nets and canoes (care takers) should be cleaning around where the canoes are. Supposing you have bought a car and the car is not working you won't say that because the car is not working you won't sweep/clean around it.

According to the Environmental Health Officer, the following factors contribute to the current sanitation at the beaches;

- a. Poor layout: most of the areas along the beach which is the old town has poor layout and there are no roads to allow for certain facilities, e.g. placing of dustbins is not possible and vehicles cannot move closer to empty the bins. Also, the bathroom waste/water from one home passes through the other creating stagnation of water most of the time breeding mosquitoes.

- b. Income levels: most of the people complain of their inability to pay for certain facilities and as such for part of those who create problems for them at the beaches.
- c. Inadequate facilities: for example toilet facilities along the beach are inadequate causing most of them to defecate at the beach.
- d. Inadequate household facilities: most of the homes are without toilet facilities creating problems for the occupants who result to defecating at the beaches.
- e. Inadequate workers at the beach: people who are deployed to work at the beaches are only a few and cannot cope with the work.
- f. Enforcement of bye-laws: the Assembly should as a matter of agency in conjunction with the Assembly member and chief fisherman should form a task force to arrest and persecute offenders at the beaches.

Do you see Zoomlion workers around?

All the fifteen (15) respondents said the Zoomlion workers have stopped working at the beaches. “w) mmba biom” which literally means they don’t come again. At first they brought them to the beaches to work and the beaches were very clean. Then later they stopped because they were not receiving their payment anymore. So as at now, Zoomlion workers don’t work here. One respondent at Woarabeba beach explained further that it’s been long since she set her eyes on them. They don’t come any longer. It’s the man in charge of the Resort (Run off) at Woarabeba who brought some to work here. Two (2) respondents from Sir Charles/Akosua village also explained that they clean the beaches and its environs themselves. At first Zoomlion workers used to clean the place but they do not come any longer. The workers don’t work at where they are staying. They used to clean where the coconuts are but don’t extend it to their place.

In an interview with the Assemblyman of Sir Charles/Akosua village, Zoomlion staff is not stationed at the beach but anytime they do “clean-up” exercise they get involved with their stuff/tools. The youth employment is the only organization with a skeletal staff cleaning at the beach. We have people we call Zoil, they are in charge of the cleaning of the beaches or coast. But their contract has ended. Because of that they don’t come again. That is another reason you see the filth around.

In an interview with the Zoomlion Authority at the Effutu Municipality, the project (Zoomlion staff working at the beaches) was a partnership between the Government and Zoomlion. That was the youth Employment Agency under the sanitation module (Zoomlion Boss). ECO Brigade – under the ECO brigade we have workers who sweep at the beaches but that project has been terminated since 2013. That is the reason why they don’t see the Zoomlion workers over there again.

Now that the Zoomlion workers have stopped, what happens to the waste from the sea? When the sea brings filth, sometimes those who cast their nets for fish gather the rubbish and bury it. At other times too, when the filth are there, the sea takes it back.

Do you have general rules for the fishermen concerning beach sanitation since the Zoomlion workers are no more working at the beach?

According to the Assembly man for Akosua village, they have informed the net owners that, when they cast their nets for fishes and bring rubbish to the beach, they should rather use shovel to dig a pit and bury the rubbish in order to reduce filth along the beaches.

Research Question 4:

Effects of poor sanitation practices at the beach

The purpose of this question is to identify the effects of the insanitary conditions at the Winneba beaches. Items 9 and 10 of the interview guide were considered.

Do you know any effect of sanitation?

Respondent “C” said it is very true, for about 6 months ago, they issued a paper to us that we shouldn’t defecate along the beaches again. It is also true that after we have caught some fish in the nets and we are still pulling the nets to the coast, sometimes we sit down and pull, and imagine there are faeces around the beach, it is unhygienic. So on the paper, it was stated that anyone caught defecating around should be charged 100 Ghana cedi’s. If the person insists not to pay, they have to report the person to the Winneba council.

Also we are not the only people who eat the fish. The fishes caught are purchased by people from different places and regions. Supposing we have gotten fish and we are trying to pull it, faeces are around it can enter the nets and mix with the fish. So we are eating fishes together with faeces and the visitors are also doing same. But to be frank with you, working with human sometimes you have to be cautious because it is difficult. They don’t obey that particular law and we are nonetheless like one family. We always catch a lot of people defecating along the Woarabeba beach but we make them go scot free. The moment you catch someone and send the person to the chief, the suspect will argue with you and ask you that; so as you are here, you are spying him?

Is there any effect of beach sanitation on beach dwellers?

Responses indicated that nine (9) respondents know some of the effects of beach sanitation.

Respondent A is of the view that if they do clean the beach and the entire community well, the place will be tidy and their grandchildren will also continue with cleanliness along the beach and its environs. They will look at the good work they are doing and also continue to do same. But if they identify with certain bad attitude, it can go a long way and affect them. She knows of diseases if they don't keep their surroundings safe by cleaning.

The rubbish that comes, please do you have any idea about any future problem or consequences that it can have on the people?

Respondent "B" said the fishing net brings dirt from the sea if we don't manage it, the sea takes it back and when the tide rises it brings them back. This destroys our fishing nets as they pull, the dirt enters the net and at times it tears the nets.

Is there any effect of beach sanitation on the community?

Respondent "B" said yes if they don't keep the beaches and its surroundings clean, poisonous animals like snake can hide in the rubbish or dirt and enter their homes and their nets as well. But if the beaches and their environs are cleaned, he believes such instance won't occur. Also, another effect of unsanitary condition at the beaches and its environs is sickness. Because dirt causes sickness or diseases such as malaria, cholera etc. animals like housefly feeds on dirt, toilet, etc. and when that happens, these same houseflies come to our homes and cause sickness.

Respondent "D" said we have a lot of effects of sanitation because when our communities are dirty, it brings diseases and can make us sick. There are a lot of diseases related to improper sanitation. Every two weeks our elders also announce it for the entire community to do a general cleaning along the Woarabeba beach and its

environs. I will plead that they always continue with the announcement on sanitation in the community until our leaders bring back Zoomlion people to come and work.

Effects of insanitary conditions

Respondent “E” said at first when you walk around the beach there were not filth but now there is filth or dirt at the beach. Can this filth cause any sickness? For sickness he is not sure but the filth worry the fishermen instead and can make the net tear. What is the Assembly doing about beach sanitation? For the Assembly, everything is scattered. When they were selling even this land for the school, I reported to the Assembly man on 7th January, 2019. I came here with the Works Department and talked to them concerning the place to be used for our dumping site.

Effects of insanitary condition

Respondent “F” said we can have a lot of the effects from this. Because we don’t have a dumping site we dump our refuse indiscriminately, we can get infections. Some also dig a pit and dump their refuse in; when it’s full then they cover it and dig a different one.

Do you think it can bring any effect on you?

Respondent “H” said all I know is I have to sweep my house because how can I sweep my house and come to your house to sweep yours too.

Don’t you think that if you sweep your house and I decide not to sweep mine, and houseflies come to stand on my refuse, do you think such houseflies can move from my house to your house?

Respondent “H” said please I don’t understand repeat the question.

The question was repeated

Respondent “H” said aah ok, I understand now. Yeah the houseflies will come to my house too.

Do you know of any effect because of that?

Respondent “H” said; Yeah, yeah, even it breeds mosquitoes and I can get malaria and other diseases as well.

Ok, if you clean just your home and leave the ones at the community and the beach, will it bring any effect on the community?

Respondent “H” exclaimed Ehe! Listen oh, once they have announced that we should all work in the community, and you decide not to do it at all, and you expect me to come to your house and sweep and clean your environment for you, aah, it won’t work.

Now that you are saying the cleanliness is better in Woorabeba beach and its environs, has it brought any effect on the people?

Respondent “I” said at first the place was bushy and there was no pipe, we weren’t able to get drinking water, no road, etc. but now because we have improved on beach sanitation, those kinds of sicknesses, etc. that used to worry us and we have to rush people to Winneba hospital has stopped/reduced.

Effects of sanitation

According to the Environmental Health Officer, our health depends on sanitation; that is good sanitation brings good health as bad sanitation brings a lot of diseases. Bad sanitation habits such as:

- a) Eating without washing hands

- b) Indiscriminate defecation
- c) Indiscriminate dumping of refuse
- d) Stagnant waters breeding mosquitoes
- e) Houses without toilets
- f) Poor drainage etc.

The above and many others will cause diseases such as cholera, diarrhoea, worm infestation, malaria as they go a long way to reduce the family income as well as working hours.

He further explained that since our health depends on our immediate environment, poor sanitation will eventually lead to a lot of diseases. It can therefore be concluded that people living in such environments are prone to diseases such as cholera, diarrhoea, malaria, etc.

Problems at the beaches and its attendant problems

The Health officer explained that for sanitation along our beaches, even though a lot has been done, not much has been achieved. The problems include the following:

- a. Indiscriminate dumping of refuse along the coast due to absence of facilities there and in the various homes along the coast. This has also become very difficult to control during the bumper harvest coming from all walks of life.
- b. Indiscriminate defecation by both children and adults as a result of absence of adequate toilets along the coast and the various homes along the coast as most of them are old homes with bucket type of toilet which has ceased to exist.
- c. Prevalence of diseases such as malaria and diarrhoea as a result of poor sanitation.

- d. Homes along the beaches also have poor layout which makes it very difficult to carry out proper sanitation eg. space for construction of household toilets.
- e. The few toilet facilities and refuse bins available are also not utilized as the people refuse to pay for the token.
- f. The poor sanitation has also affected tourism as most tourists who visit the place refuse to return.

4.4.1 Clean up strategies at the beaches.

What measures should be put in place to prevent the effects?

Respondent “A” said we have to try our best and continue to work harder in terms of sanitation, and also have to announce it to the community anytime we want to have a general cleaning along the beach and its environs.

What measures should be taken?

According to respondent “B”, every community has to be one to rule well. So in this case, the Omanhene and the chief fisherman (Apofohene). That’s me, if we are one, we would be able to sit down and decide and let them announce it to the people that we are serious about this issue of defecating along the beaches, so that we can halt this practice.

What measures could be put to place to maintain cleanliness around Woarabeba beach and its environs?

Respondent “C” said what it means is, if we are here and the place is very dirty, we don’t have to wait for the two weeks to come before we do the cleaning. We have one community but we have divided the community into smaller units and we have leaders over every small community/unit. So when that happens, we call all the women leaders in every small community to inform them to let their members come the next day to work. We also announce to the entire community to create the awareness so that our

people come around the next day to work towards cleanliness along the beach and the entire community.

Respondent “D” said she is a woman and as a lady she can’t say that her surrounding is dirty and she is still waiting for Zoomlion for them to come and work. Before the Zoomlion workers came, we used to work on our own, so why can’t we do it ourselves because they are no longer coming. So we have to start cleaning until they come.

What can your people do to stop these dirt aside the help from the Government so that Woarabeba can be neat?

Respondent “E” said we will need government intervention to help clean the environment since the Zoomlion people have stopped coming here, we are the ones staying here so I and my people will try our best to clean the beach and its surroundings in our small way till Government intervention. We will need tools like rake, shovel, dustbins, etc. to help do the cleaning regularly and snappy. Because without tools like rake, shovel etc. we wouldn’t be able to clean the environment regularly and finish early.

What measures could be put in place to minimize/prevent dirt?

Respondent “F” said what I can say is the Assembly should bring a paper on sanitation so that the chief and his elders also support it. We will be having a general cleaning on this day, so that those who refuse to take part in the cleaning will be punished and before that the punishment will be announced to them. The moment there is a paper from the Assembly, it will create the awareness and all the people will come and work. But if

there is no issuing of paper from the Municipal Assembly, and we just use our mouth to say it, they won't fully participate in the general cleaning of the beach and its environs which can bring more harm than good.

What measures can we take to maintain good sanitation at Woarabeba?

Respondent "G" said we would have to inform our chief and see if there will be a decision on those people who have canoes but have refused to work on their canoes and around the area in which their canoes are.

What measures can improve sanitation at the beaches?

Respondent "H" said to be frank with you, what am telling you is the truth. When the chief talks about sanitation, they don't mind him. So he too, he has to rest. So I believe when you clean your house that is it, you are done. Everyone sleeps in his house so if I wake up and someone doesn't clean his environment, I can't go there to sweep for him or her.

What measures will you suggest we put in place to ensure cleanliness at the beach?

Respondent "I" said we need dustbins to reduce the indiscriminate dumping of refuse/littering at the beach.

What measures will you suggest we put in place to ensure cleanliness at the beach?

Respondent "J" said toilet is our priority, it's a need. There was a time it was Kwame Nkrumah's birthday, so they asked about our first need, and our elders requested for the toilet but it was in haste so they had to do something so later they made a

communication centre instead of the toilet. We still need a lot of things and one person cannot say it all.

What are some of the measures you think we can put in place?

Respondent “K” said if this will be possible, it depends on my landlord and the people in charge of this place. Certain measures should be put in place to help. Like if you come to the beach with food, drinks and others you should be charged as they normally do at Labadi beach, etc. Someone is supposed to be at the beach to collect money that is 5 cedi’s or 10 cedi’s. Then every day, those monies collected will be given to people to sweep here or to work at the beaches. But because people are not being charged, they just come because it’s always free for the people, I cannot initiate that amount to be paid.

With the whites most of them come here because of swimming and even after swimming, they ask of box and they pick around and dump their rubbish in the box. Some of them, when the boxes are full they sent them themselves and a few also bring the rubbish in the box back to us. Moreover, when the beaches are cleaned; we get a lot of customers.

What measures should be put in place?

Respondent “L” said where we are is far, but the government think we just need one place as a dumping site, when that happens it might create problem. But we have divided the community into zones. We have zone 1, zone 2, zone 3, zone 4, and zone 5. So they have to create 5 dumping sites for all the various zones which will be very helpful. But if they don’t do it that way, it will create problem.

Any suggested measure?

Respondent “M” said we need a dumping site. Even if a refuse bin, then they take it at the end of the month. Because if there is cleanliness at the beach, people can’t defecate there because when you are doing that your conscience wouldn’t tell you so. So if you are neat you can’t do that. And if there are toilet facilities around, no one will also defecate at the beach because all these bring diseases. Even with the toilet, they are now building one. But we need dustbins, it is a necessity.

What measures should be adopted?

Respondent “N” said, I think if we do cleaning, I mean regular clean-up exercise, the beach will be very clean. It means whenever you are doing cleaning, make sure you encourage your friends and other youth in the community to help.

What measures should be adopted?

Respondent “O” said we need a lot of help. As we are here, our only source of income is fishing. We do sea work. We the young ones need jobs.

4.2 Discussion

4.2.1. Environmental Sanitation Conditions

The first research question of this study was: what is the current environmental sanitation situation of people living along the Winneba beaches? Responses indicated that the beach and its environs used to be very dirty and there was filth all around, bushes were around too. Now, the cleanliness of the beach is still not perfect but they are still on it, to make their surroundings and the beach neat. There is a gradual change and progression in terms of cleanliness along the Winneba beaches. The study revealed that one of their major challenges is toilet facilities. Though they have one public toilet at Woarabeba beach it wasn’t constructed well, and if care is not taken it can break at any time and people may die or be injured. There is also one at Sir Charles

beach/Akosua village which also poses a similar problem; mostly the women try their best to use it, though they are constructing a new public toilet for them, they are not done yet. Most of the people living along the Woarabeba beach and Sir Charles beach use the beach or the bush as their toilet. From the literature, faecal deposits also often occur in zones where the nearby communities do not have enough toilet amenities and with tidal cycles these deposits are carried away into the sea and worsen the value of the water (Vikas and Dwarakish, 2015).

The various areas where they dump their refuse and burn, it is mostly kept clean. The inhabitants at the beaches have places where there are canoes, but because such canoes are no longer working, no one cleans around such canoes and these places are always dirty. Two respondents indicated that when we talk of sanitation at the beaches it is worse. This is because at first it was improving because the Zoomlion workers used to clean everywhere, thus under the coconut trees, backyard, refuse dump, the beach, etc. but now because the Zoomlion workers don't come again, often the environment is not always clean. Another respondent is of the view that at first they were having a place used as dumping site but now they have sold most of the lands and they don't have dumping sites. Akintola, (1978) in the literature reviewed argues that maintaining a sound and healthy environment has always been a challenge to man.

The people living along the Winneba beaches use the bushes as their dumping site and others also dump their rubbish indiscriminately along the beaches. Some of the inhabitants at the beach have also dug their own pits used as dumping site behind their homes. Depicting a similar picture of the problem, Cointreau, (2001) in the literature review reported that, in some cases, up to about 60% of solid waste generated within urban centres in poor countries remains uncollected and such refuse accumulates on

waste lands and streets, sometimes to the points of blocking roads. In beach environment, such situations will result in negative effects, such as health hazards. Thus, these landfill sites and open burning of waste could bring about pollution in the environment which can result in air- borne diseases. In addition to the above, Nathanson, (2015) is of the view that improper disposal of solid waste can create insanitary conditions, and these conditions in turn can lead to pollution of the environment and outbreak of diseases.

Results indicate that once in a blue moon, it is announced in their community to go to the beach and clean. Thus, they usually clean their households (environs) but hardly go to the beach to clean. Also, another incidence is sellers bring dirt to their environs because people come to the beach to sell and buy things like sugar cane. For example, buyers patronize sugar cane, chew it there and leave the rubbish behind. Some dirt comes from the sea itself and some from Winneba town. Periods or times just before full moon the water level rises and dumps some dirt at the shore (tree trunks, plant remains). Sometimes, the dirt doesn't come from only our households but from the sea. When the sea is boisterous, it brings dirt and leaves them at the shore. When the dirt is left there untouched, within a month's time they get burnt naturally and become black.

The results indicate that some people visit the beaches with their own stuffs and when they finish eating they dump the rubbish indiscriminately. This shows that if there are dustbins at vantage points at the beaches, majority of the people will not litter at the beach. Others also ask for dustbins they can dump their refuse in. At other times too, one restaurant operator gives people money to clean the beaches and its surroundings. But if he doesn't ask people to clean the beach and pay them at the end of the month,

the rubbish will be there and the sea will wash them by itself or take the rubbish back to the sea. Sometimes it will bring them back and at other times, wipe it again.

Observation also showed that people litter the beach indiscriminately; there is open defecation, dumped refuse along the Winneba beaches, environmental odour, and etcetera. All said and done the responses to the current environmental sanitation situation in Winneba depicts that sanitation at the beach is still not the best and a lot still needs to be done.

4.2.2. The level of knowledge of respondents about beach sanitation at Winneba.

The enabling knowledge of respondents about sanitation indicated that inhabitants at Winneba beaches have high level of awareness about sanitation. Duan and Fortner (2005) observed that people possessed high environmental awareness and knowledge of local environmental issues than global environmental issues. This was supported by (Kaliyaperumal, (2004) & Mwaseba & Kigoda, (2017) that the knowledge a community possesses refers to the understanding of any given phenomenon and so is the issue of sanitation at Winneba beaches. With regard to the level of knowledge of respondents about beach sanitation at Winneba, one finding is that majority of the inhabitants living at the beaches do general cleaning. Responses indicate that the inhabitants do general cleaning mostly every two weeks/monthly and it is done on Tuesdays because they don't go for fishing on Tuesdays since the inhabitants major occupation is fishing.

It could be inferred from the interview that eight (8) respondents said they do partake in clean-up activities. Although some people refuse to partake in clean-up exercises at the beach, they sometimes have to use measures like the Town Council in Effutu Municipality will come round for inspection to scare the people to take part in clean-up

exercise. The moment they hear that, almost all of them participate in the activity. From the responses gathered, it clearly shows there is little or no supervision on sanitation practices of people living along the Winneba beaches.

Vendors at the Sir Charles beach indicated that they don't have any special day set aside for general cleaning; they only sweep the compound whenever they come to the beach to sell. One respondent expressed his view by disagreeing to the clean-up exercise at the beach. He gave a bitter experience by saying that there is no need for general cleaning because some of them don't show up.

In order for the researcher to know the level of awareness of respondents about sanitation, another question was asked about the community experiencing any form of serious disease or epidemic. Ten respondents replied that it is malaria that always disturbs them. One respondent explained that in the olden days where the beach environment was very dirty, the beach community experienced a serious epidemic.

Another question was asked, whether the inhabitants use the sea for washing. Responses gathered shows that the people living along the Winneba beaches do not use the sea for washing. The inhabitants from Woarabeba community said they use the lagoon (baka) instead. In the same vein, the inhabitants from Sir Charles/Akosua village said, they don't wash in the sea because they have pipe around, they use it instead.

Respondents were asked whether the Zoomlion workers still work at the beaches in Winneba. All the twenty (20) respondents said the Zoomlion workers have stopped working at the beaches. At first they brought them to the beaches to work and the beaches were very clean. Deducing from the above point, it means the beaches are dirty and the inhabitants of both Woarabeba beach and Sir Charles beach see it as a result of the Zoomlion workers not working at the beaches any longer. From the responses

gathered, some of the inhabitants still see the cleaning of the beach as the responsibility of the Zoomlion and they are still hoping the Zoomlion workers will come to the Winneba beaches to work. The Assemblyman of Sir Charles/Akosua village explained further that Zoomlion staff is not stationed at the beach but Zoil rather, they are in charge of the cleaning of the beaches or coast. But their contract has ended, because of that they don't come again. That is another reason you see the filth around. In this vein, the dirt/filth is one of the reasons why our beaches are still filled with rubbish because there are no longer Zoomlion/Zoil workers stationed at the Winneba beaches.

The researcher inquired from the respondents that now that the Zoomlion workers have stopped working at the beaches, what happens to the waste from the sea. Responses indicated that when the sea brings filth, sometimes those who cast their nets for fish gather the rubbish and bury it. At other times too, when the filth are there, the sea takes it back. This shows that the filth/dirt from the surface of the sea and the sea bed are sometimes left unattended to, making the beaches very dirty. This is because when the filth are there without taking care of it, the sea takes it back and later brings it back to the shores.

Based on the discussion above, majority of the respondents were very worried about the poor environmental sanitation conditions at the beaches; bad state of public toilet, no Zoomlion workers stationed at the beach, no refuse bins, presence of malaria, etc. This means that the inhabitants at the beaches are aware of the poor environmental conditions at the beaches. But one thing that most of the inhabitants forget when it comes to malaria is, the poor sanitation conditions at the beaches breeds mosquitoes and other disease vectors.

4.2.3. Factors responsible for the environmental sanitation conditions in

Winneba beaches.

With regard to factors responsible for poor environmental sanitation, one other finding is that majority of the respondents confirmed that the sources of waste at the Winneba beaches are mainly from their households and the sea. Thus, some of the wastes come from their households, and some emanate from the sea (Bosompo). With this finding most of the responses show that waste from their households and the sea is one major factor that accounts for the poor environmental sanitation problems at the Winneba beaches. This is as a result of the absence of dustbins to put the rubbish in and the other one is attitudinal and ignorance on the part of some inhabitants because they believe that some of the dirt comes from the sea and the sea has to take those dirt back to the sea. That is whenever the sea brings such dirt, and no one sweeps it, the sea itself takes it back.

Again the study reveals that the dirt/filth at the Winneba beaches is from the sea, their households/community and the people who come to the beach to sell and buy. The dirt/filth from the sea occurs when there is high tide, the water or sea level rises and dumps some dirt in it at the shore (tree trunks, plant remains etc.). When fishermen cast their nets into the sea, it includes not only the fishes but some weeds. They, separate the fishes from the weeds, harvest the fishes and leave the weeds behind. Sometimes, the inhabitants dig a hole at the shore and burry the weeds. It means the bigger portion of the dirt is not only by the inhabitants living by the beaches but some from Simpa (Winneba) and the sea. This supports the literature reviewed that “Aquatic-based litter include solid waste carried by rivers, and litter from merchant ships and fishing vessels” (Williams et al., 1993; Debrot et al., 1999; Williams at al., 2000). These items may persist and or drift in the ocean or eventually become deposited along coastal areas.

Whenever the sea brings forth such dirt, they announce it to assemble the entire community to gather such dirt and allow them to dry, and burn it.

Again the study reveals that the sources of waste at the Winneba beaches are from the people who come to the beach, households and the sea itself. From the responses gathered, the dirt that the sea brings is from the inhabitants living along the beaches and the traders who come to the beach to sell. The respondents expressed their concern about not having refuse bin and as a result of the absence of the bin they burn or bury their rubbish, even though some people also dump their rubbish indiscriminately at the beaches. It should be noted that rubbish or waste dumped at the beaches, drains and open spaces are washed ashore during high tide or washed into the sea during rainfall.

Another question the researcher asked the respondents was whether they have a public toilet in their vicinity. Responses gathered indicate that people from Woarabeba beach have one public toilet which is spoilt. So in this context imagine if you are from afar in the community but want to use it, you might easily disgrace yourself. Also, respondents from Sir Charles beach/Akosua village indicated that they have one public toilet but it is also spoilt. So mostly it is some of the women who try to use it but those who can't use it use the beach or the bush instead. This is in line with the literature reviewed by Vikas & Dwarakish, (2015), faecal deposits also often occur in zones where the nearby communities do not have enough toilet amenities and with tidal cycles these deposits are carried away into the sea and worsen the value of the water.

There was a follow up question on how those from afar in the Woarabeba community get easy access to the public toilet. Response gathered shows that it is not easy for those from afar getting easy access to the public toilet. Even those who are closer, most of

the people don't use the public toilet because of its bad nature. It came to the attention of the researcher that the public toilet is not in good shape because the ground is watery, and even if new ones are to be built at the Woarabeba beach, it should be built around the dry season and bio digester is preferred.

The study reveals that there are no refuse bins at the beach and its environs, there are no dustbins at vantage points at the beaches, and there is one public toilet at Woarabeba beach which is in a bad state and one public toilet at Sir Charles beach which is also not in a good condition. This is in line with the literature reviewed of Boadi and Kuitunen, (2004). Boadi and Kuitunen, (2004) indicated that some of the problems affecting environmental sanitation include weak institutional capacity and lack of resources, both human and capital.

4.2.4. Effects of beach sanitation

Responses indicated that nine (9) respondents know some of the effects of beach sanitation. Majority of the respondents replied that it's malaria that always disturbs them. Karley (1993) noted that, the health status of a community is affected by its state of environment. This means that the environmental condition or sanitation at the beach whether good or bad affects the health status of the community. Relating the current study to Karley's view, it means good sanitation at the beaches can affect the inhabitants positively whiles poor sanitation at the beach affect the inhabitants negatively. This is in the sense that good sanitation at our beaches promote sound and conducive environment for a healthy living whiles poor beach sanitation promote diseases and unhealthy environment.

Responses indicate that the fishing net brings dirt from the sea and if it is not well managed, the sea takes it back and when there is high tide it brings the dirt back. This

destroys their fishing nets as they pull, the dirt enters the net and at times it tears the nets. It is also true that after they have caught some fish in the nets and we are still pulling the nets to the coast, sometimes they sit down and pull, and imagine there are faeces around the beach, it is unhygienic. Another respondent explained that they are not the only people who eat the fish; fishes caught are purchased by people from different places and regions.

Respondent “D” said we have a lot of effects of sanitation because when our communities are dirty, it brings diseases such as cholera and malaria which can make us sick. Respondent “F” said we can have a lot of the effects from this. Because we don’t have a dumping site we dump our refuse indiscriminately, we can get infections.

From the study, the issue of the most rampant illness or disease of inhabitants living along the Winneba beaches reveals that malaria is the most rampant illness. The study also revealed that for about 6 months ago, a paper was issued from the Effutu Municipal Assembly to the people at Woarabeba beach that they shouldn’t defecate along the beaches again. So on the paper, it was stated that anyone caught defecating around should be charged 100 Ghana cedi’s. If the person insists not to pay, they have to report the person to the Winneba council. However, it is easier said than done, the inhabitants living along the beach are not cooperating with the issuance of the paper from the Municipal Assembly because there is no supervision or follow up by the Effutu Assembly. So, some of the people still defecate along the beaches.

The researcher asked respondents about measures to curb poor sanitation at the Winneba beaches. Responses are identified below:

Responses indicated that they have to announce it to the community anytime they want to have a general cleaning along the beach and its environs. This will create the

awareness so that most people come around the next day to work towards cleanliness along the beach and the entire community until the Zoomlion workers come and continue with their work.

Respondent “B” opined that when there is unity in the community it will help curb poor sanitation at the beach especially unity between the chief, chief fisherman and the elders of the community to stand on their grounds whenever the Municipal Assembly or the Government issue a paper on sanitation at the beaches. Another respondent said they will need tools like rake, shovel, dustbins, etc. to help clean the environment since the Zoomlion people have stopped coming here, till Government intervention.

Respondent “F” said the Assembly should also stand on its grounds and bring a paper on sanitation so that the chief and his elders support it. The moment there is a paper from the Assembly, it will create the awareness and all the people will come and work. Respondent “G” said we would have to inform our chief and see if there will be a decision on those people who have canoes but have refused to work on their canoes and around the area in which their canoes are.

Respondent “I” said we need dustbins to reduce the indiscriminate dumping of refuse/littering at the beach. Respondent “J” said toilet is their priority, it’s a need.

Respondent “K” (Restaurant operator at Sir Charles beach) is of the view that those who patronize the beach should be charged and the monies collected should be used to employ people to work at the beaches so far as sanitation is concerned.

Two Respondents indicated that the community has been divided into zones. They have zone 1, zone 2, zone 3, zone 4, and zone 5. So they have to create 5 dumping sites for

all the various zones which will be very helpful. They also need dustbins, it is a necessity.

Respondent “O” said they need a lot of help. As they are here, their only source of income is fishing because they do sea work. We the young ones need jobs.

4.2.5. Discrepancy

In qualitative research, discrepancy may occur when participants’ responses run counter to any particular category or specific pattern. Although this study did not present clear cases of discrepancy, it was interesting to hear that Respondent “H” response to effect of beach sanitation was “all I know is I have swept my house because how can I sweep my house and come to your house to sweep yours too”.

Another discrepancy seemed to be with responses to the fourth research question. When Respondent “O” was asked what measures should be adopted? I received different answer, thus respondent “O” said we need a lot of help. As we are here, our only source of income is fishing, we do sea work. We the young ones need jobs.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.0 Introduction

This chapter discusses the summary of findings, implications, recommendations and conclusions drawn from the findings. It highlights issues that were revealed during the research with regards to current environmental sanitation at the Winneba beaches, awareness of environmental sanitation, factors responsible for current environmental sanitation at the Winneba beaches, effects of poor sanitation practices at the beach and measures put in place to prevent dirt/filth at the beaches. The findings are based on interview with 20 respondents, a Zoomlion Authority in Winneba, Environmental Health Officer, and an Assemblyman of Akosua Village.

5.1 Summary of the main Findings

From the analysis of the data in the study, the following were the major findings:

1. Having examined the current environmental sanitation (situation) in Winneba beaches, it came to light that:
 - a) Inhabitants living along the Winneba beaches revealed that environmental sanitation at the beaches is poor.
 - b) Majority of the respondents indicated that toilet facilities are one of the major sanitation problems of people living along the beaches which have resulted to open defecation along the beaches.
 - c) The people living along the beaches don't have dustbins
 - d) Refuse gathered at the beaches are mostly burned or buried.

2. Assessing the level of knowledge of the people concerning sanitation, the highlights were:

- a) Inhabitants of Winneba beaches have high level of awareness on sanitation.
- b) People have canoes but have refused to work on their canoes and around the area in which their canoes are.
- c) Lack of dustbins account for the reason why visitors and inhabitants litter the beaches.
- d) Digging of pit and open burning of waste is a method of refuse disposal.
- e) Zoomlion workers have stopped working at the beaches.
- f) Using measures like some staff from Town Council from the Effutu Municipality will come round for inspection for people to part take in clean-up activities.
- g) Zoomlion Authority in the Effutu Municipality confirmed that the project was a partnership between the Government and Zoomlion. That was the youth Employment Agency under the sanitation module. ECO Brigade – under the ECO brigade they have workers who sweep at the beaches but that project has been terminated since 2013.

3. Identifying the factors that contribute to the current environmental sanitation (situation) along the Winneba beaches, it emerged that:

- a) Littering is a major problem at the beaches.
- b) Majority of the respondents confirmed that the sources of waste at the Winneba beaches are mainly from their households, traders at the beach and the sea.

4. Describing the effects of environmental sanitation conditions of people living along the Winneba beaches, it appeared that:
- a) Respondents confirmed that malaria is the most rampant illness affecting people living along the beaches/coast.
 - b) Poor environmental sanitation conditions at the Winneba beaches affect the market of Restaurant operators.
 - c) Sometimes the fishes caught are mixed with dirt/feacal deposit on the shore and in the sea which might pose a threat to human survival.

5.2 Conclusion

The study concludes that, sanitation regulations and law enforcement plays crucial role in ensuring proper environmental sanitation at the beaches.

The study revealed that, the main driving forces for poor environmental sanitation conditions at the beaches are attitudinal on the part of some inhabitants at the beaches, inadequate toilet facilities, lack of law enforcement, lack of dustbins and tools like shovel, rake, etc. to work with and Zoomlion workers not working at the beaches anymore.

The study further emphasized on the need for intensive public education and sanitation regulations to help improve beach sanitation.

It can also be concluded that a good and clean environment enhances a healthy living and lifestyle.

5.3 Recommendations

In view of the research findings and conclusion drawn, the following recommendations have been made:

Objective 1: To examine the current environmental sanitation situation of people who live along the Winneba beaches.

- a) In order to improve current sanitation practices at the beaches; the Effutu Municipality has to provide refuse bins to the beaches and empty the bins every month.
- b) There should be regular monitoring of emptying of refuse bins by the Assembly. This will keep the beach environment clean and prevent any possible outbreak of communicable diseases such as cholera, malaria and typhoid.
- c) The Effutu Municipal Assembly should develop or implement periodic public education programmes on the need to maintain good sanitation at the beaches in order to change the attitudes of people living along the beaches.

Objective 2: To assess the level of knowledge of respondents about sanitation at the Winneba beaches.

- a) The Assembly should engage in frequent environmental sanitation education and enforcement of sanitation bye-laws to make the people responsive to beach sanitation.
- b) Enforcement of bye-laws on recalcitrant sanitary offenders.

Objective 3: To identify the factors that contribute to the current environmental sanitation situation along the Winneba beaches.

- a) As a way to sustain the proper practice of sanitation at the beaches, there should be a system in place (courts) to deter people who will try to sabotage the drive for improved sanitation by imposing some form of sanction commensurate with the offence, ideally a reasonable fine to maintain public order.

- b) The Assembly should build toilet facilities, urinals, etc. for people living along the beaches; if possible bio digester is recommended.
- c) The chief together with the Assemblymen, and the Effutu Municipal Assembly, should bring out policies to regulate canoe owners on their operations.
- d) Formation of sanitation task force to help enforce the sanitation bye-laws and also carry on clean ups. These will include e.g. Assembly members, chief fisherman, unit committees, etc.

Objective 4: Outline the effects of environmental sanitation conditions of people who live along the Winneba beaches.

- a) There should be public education on the effects of poor sanitation at the beaches.
- b) Hold meetings with organized groups along the coast e.g. Landlords, fishermen, fishmongers, boat owners, Assembly members, unit committees and educate them on effect of their activities on their health and what they should do.
- c) Regular clean ups at the beach to prevent the effects of poor sanitation at the beaches.

5.4 Area for Further Research

Since society is dynamic with continuous changes in societal needs, there is the need for further research to be conducted into many aspects of education at all levels to meet the aspirations of society. It is therefore suggested that:

1. A study should be conducted to examine whether gender has any influence on environmental sanitation.
2. A study should be done to outline how environmental sanitation at the beaches could have an influence on tourism.

3. A study should be done to explain why formal education could have influence on beach sanitation.



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APPENDIXES

APPENDIX A

INTRODUCTORY LETTER



8th February, 2019

TO WHOM IT MAY CONCERN

Dear Sir/Madam,



APPENDIX B

UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF SOCIAL STUDIES EDUCATION

INTERVIEW GUIDE FOR THE STUDY

Interview guide to examine the sanitation practices of people living along the Winneba beaches.

SECTION A: INTRODUCTION

This interview guide is designed for a research on sanitation practices of people living along the Winneba beaches

A. Current environmental sanitation situation of people living along the Winneba beaches.

1. How do you see sanitation along the Winneba beach?
2. Are the beaches clean and well maintained?
3. Where do you dump your refuse?

B. The level of knowledge of respondents about beach sanitation at Winneba?

4. Do you do general cleaning along the beaches?
5. Do you have Zoomlion services or any waste management services along the beaches?

C. Factors responsible for current environmental sanitation situation at the Winneba beaches.

6. What are the sources of wastes along the beaches of Winneba?
7. What factors contribute to the current environmental sanitation along the beaches of Winneba?

D. Effects of environmental sanitation conditions of people living along the Winneba beaches.

8. What are the effects of environmental sanitation conditions of people who live along the Winneba beaches?
9. What measures could be adopted to ensure proper sanitation at Winneba beaches?

APPENDIX C**OBSERVATION CHECKLIST**

N0	CURRENT ENVIRONMENTAL SANITATION SITUATION IN WINNEBA BEACHES	TICK
1	Dumping of refuse along the beaches	√
2	Littered environment	√
3	Flora and fauna (dead) materials (plant/animals)	√
4	Availability of dustbins at vantage point	×
5	Defecation along the beaches	√
6	Stagnant waters	√
7	Cleanliness of beach environment	×
8	Inscriptions and posters of appropriate places	√
9	Washing in the sea	×

APPENDIX D

UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF SOCIAL STUDIES EDUCATION

A pilot study to examine the sanitation practices of people living along the Apam beaches.

1. How do you see Apam beach?
2. Can you share the sanitation situation in your home with me?
3. In your own view what is contributing to sanitation practices in your household?
4. Do you find it difficult to deal with any of the types of filth? Which types?
5. Which places would you call dirty in this community?
6. What makes them dirty?
7. Are any of the types of dirt or filth which you have mentioned related to any sicknesses or diseases?
8. Which sickness and how are they related?
9. Do you know the effects of sanitation?