

UNIVERSITY OF EDUCATION, WINNEBA

A STUDY OF ENVIRONMENTAL SANITATION ATTITUDE

AMONG RESIDENTS OF AMANFROM



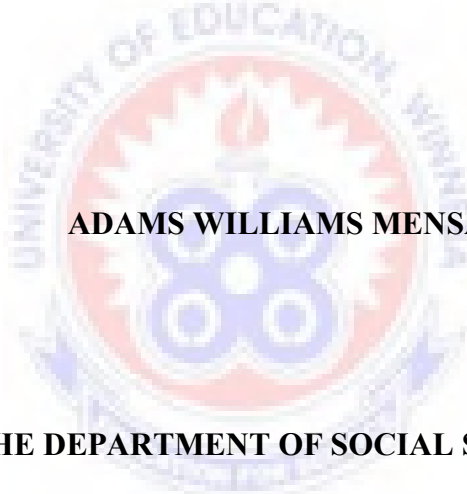
ADAMS WILLIAMS MENSAH

2016

UNIVERSITY OF EDUCATION, WINNEBA

**A STUDY OF ENVIRONMENTAL SANITATION ATTITUDE
AMONG RESIDENTS OF AMANFROM**

ADAMS WILLIAMS MENSAH



**A THESIS IN THE DEPARTMENT OF SOCIAL STUDIES EDUCATION,
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SCHOOL OF GRADUATE STUDIES, UNIVERSITY OF EDUCATION,
WINNEBA, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN SOCIAL
STUDIES**

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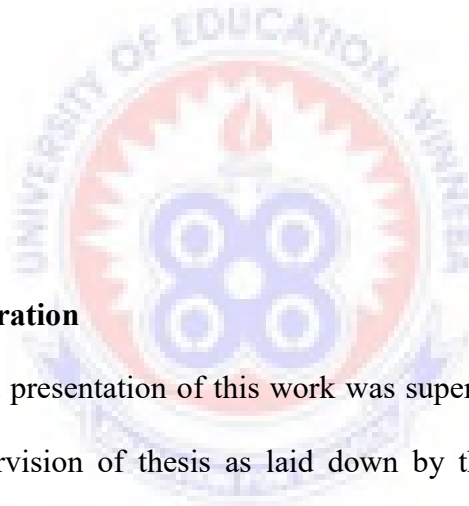
DECLARATION

Student's Declaration

I, Adams Williams Mensah declare that this thesis, with the exception of quotation and references contained in published works which I have identified and acknowledge, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE:.....

DATE:.....



Supervisor's Declaration

The preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University Of Education, Winneba.

NAME OF SUPERVISOR:.....

SIGNATURE:.....

DATE:.....

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DEDICATION

I dedicate this work to my beloved mother, Comfort Abena Serwaa and my family.

I owe this family of mine, a debt of gratitude for the motivation, support and encouragement they gave me when I was carrying out this research.



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ABSTRACT

The purpose of this study was to examine environmental sanitation attitude among residents of Amanfrom. Specifically, the study focused on examining environmental sanitation attitude, environmental sanitation behaviour, determinants of poor environment as well as the effects of poor environmental sanitation on residents of Amanfrom. The study adopted a mixed methodology by combining interviews, questionnaires and field observation in the data collection processes. The population for the study comprises 20 officials drawn from Sanitation and Health Inspectorate Unit and Zoom Lion Company Ghana Limited outside Amanfrom and 120 residents of Amanfrom. Purposive sampling was used to select 20 officials, convenience and random sampling through the lottery method was used to select 120 residents for the study. The data was analysed using Statistical Product and Service Solution (SPSS) software Version 23. The presentation of the data was mainly descriptive in which frequency count tables and simple percentages were used to answer the research questions addressed in the study. The findings were interpreted and discussed in relation to the research questions. The findings of the study show that Amanfrom, experiences poor environmental sanitation due to inadequate waste containers, incinerators, public toilet facilities and a negative growing culture of creating refuse dumps at any available space by the residents. The sanitation problem affects the health of the residents, their livelihood, tarnishes the image of the study area and also leads to frequent outbreak of diseases such as malaria, cholera and diarrhea and among others. This study recommended the provision of enough waste containers and other forms of refuse receptacles, provision of permanent land space for waste disposal, periodic clean-up exercise, there should be regular waste collection by Zoom Lion Company Ghana Limited, provision of permanent land space for waste disposal, enough public toilet facilities and conscious environmental education as a measure of addressing environmental sanitation problems in Amanfrom.

CHAPTER ONE

INTRODUCTION

1.0 Background to the study

Environmental sanitation has emerged as a serious worldwide phenomenon which is increasingly worsening each day in many developing countries due to human activities such as technological, industrial, commercial, social-economic and cultural practices and among others. Human attitude is said to be the main contributor to the environmental sanitation problems in which, if urgent attention is not taken to address this phenomenon it might pose serious threats to sustaining life on earth (Gore, 1993). By looking at the scopes and the impacts of environmental problems, it is evident that the phenomenon has become a very pertinent issue on the international agenda (Madruga, & Batalha da Silveira, 2003) as it is capable of affecting human beings and all living species (Gore, 1993; in O' Zden, 2008). The future of human beings is critically dependent on proper management of the environment and its resources. However, today's environmental problems arise from the lifestyles of human beings who live in a geographical area and the various activities they undertake in relation to the environment being it economical, social, cultural, industrial or technical and the use of an advanced form of technology just to mention but a few. Reports indicate that five billion people, more than a third of the global population are currently living in extreme poverty or completely without a clean sanitation, a clear affront to human dignity (Siwi, 2004). The life and health of both children and adults are being put at risk by unhygienic living conditions: Five thousand children less than 5years old die every day as a result of poor environmental sanitation. Poor sanitation has a negative impact on an economy as illness reduces productivity. Additionally, the pollution of groundwater, lands, rivers, lakes and oceans endangers the environment (Siwi, 2004).

There has been a global concern about the quality of environment in which human beings live. Many International Conferences, Workshops and Seminars have been held on the impact of degraded environment on human beings and the need to promote environmental qualities (Buckle & Smith 2000).

A United Nations Report (August, 2004) noted with regret that while developing countries are improving access to clean water they are falling behind on sanitation goals (Uwaegbulam, 2004). At one of its summits in 2004, the World Health Organisation and the United Nations International Children Education Fund in a joint report stated that “about 2.4 billion people will likely face the risk of needless diseases and death by the year 2016 because of bad environmental sanitation, decaying or non-existence of sewage system and toilet which fuels the spread of diseases”.

Developed countries however, are not the only ones struggling with rapid accumulation of waste problems. Whilst in the past, waste disposal was perceived as a problem as a result of over populations of nations, today the question of urban waste problem and by extension those of environmental sanitation pose some of the daunting tasks facing most African countries. According to Lyse, (2003) nine (9) out of every ten (10) African cities are facing serious waste disposal problems. The use of environmental resources and the consequent increase in waste generation has brought about the need for proper waste management. This is especially so since our environment also serves as a refuse repository. Environmental problems, besides posing severe risk on human population, are also capable of influencing damage on the ecological system in a locality. Bacteria actions from waste products emits unpleasant smell that can sometimes cause ill-health or, in some cases, death as was

the case in La Cote d'Ivoire where a French Company discharged waste materials in the country's coastal borders that reportedly, killed many people (Boateng & Nkrumah, 2006). One major problem in most communities in Ghana is insanitary environmental attitude among the populace. It is becoming increasingly clear that not only are residents refusing to heed to the messages in the media and the educational fora organised by the Ministry of Health (MOH) and some Non Governmental Organisations (NGOs) on the need to keep our environment clean. Surprisingly, it also appears to give the impression that, the result of these policy interventions have turned to be oblivion as people are still resisting the need to change their attitudes and behaviours towards keeping the environment clean. Consequently, many people are apparently determined to continue to conduct businesses normally in a filthy environment and do not care about contracting diseases including cholera and malaria (The Mirror, Saturday, 2006).

A visit these days to most towns and cities in Ghana will reveal environmental sanitation problems in such areas. Examples of these problems are heaps of uncontrolled rubbish, empty polythene bags, choked drains, indiscriminate littering and open defecating at unauthorised places such as bushes and along the beaches. One cannot boast of Accra as primate city due to the waste the city is grappling with. Kumasi, once referred to as garden city has now also turned into "waste city." Sekondi-Takoradi being referred to as twin and oil city in public cycles has now also turned into "waste city" (Kwasi, 2014: online). The daily news on cholera epidemics in the cities especially Accra is as result of poor environmental sanitation. Unless there is realignment of attitude and behaviour of people towards environmental sanitation, environmental problems will continue to affect human life negatively. In many parts of the city, streets are partially or wholly blocked by waste.

Similarly, open space, market place are clogged with waste. In most cases drains are clogged or totally blocked and many compounds are hemmed in by waste (Asomani-Boateng-Haight, 2003). Environmental sanitation issue has so degenerated that it is common to find elders and young people, educated and uneducated alike relieving themselves side by side in the open and polluting the environment. Even churches, mosque, shrines and universities are struggling to keep their environment clean. It is therefore no wonder that Ghana continues to slip further on its sanitation performance. According to World Health Organisation (WHO) reports, Ghana is currently the 7th dirtiest country globally (Kofi-Tse Fix, 2015). This situation is not so different in many other countries south of the Sahara. In South Africa, Zambia and Zimbabwe garbage is a major eyesore (Chazan, 2000:1; Lyse, Wetherell, 2003:1). Another disturbing phenomenon is the manner in which adults urinate openly anywhere and anytime of the day. Sometimes passers by need to halt for them to finish the shameful and indecent exposure of their bodies before these passersby can move on especially when it involves females. In some areas, there are heaps of refuse at dumping sites. Refuse containers get full and refuse begins to fall unto the ground as people continue to dump more garbage swarms of flies hover over the refuse. Even in areas where communal containers are available, they are left to overflow with waste for a long period before being picked up eventually. This has resulted in some communal container sites evolving into refuse dump sites due to the mountains of uncollected waste accumulated over such cases, residents are tempted to dump waste into gutters and other areas instead of making the trip to the aesthetically displeasing and stinking container sites.

According to *Daily Graphic* report on July 22, 2015, Ghana slipped further on its sanitation performance globally in 2015, thus landing Ghana as the 7th dirtiest country

in the world. This was contained in a report, “Progress on Sanitary and Drinking Water: 2015 Update and NIDG Assessment” jointly issued by the World Health Organisation (WHO) and the UN Children’s Fund. Ghana was only a lead of Madagascar and five other African countries including South Niger, Chad, Togo and Sierra Leone (Wireko, 2015).

Consequently, the first Saturday of every month has been devoted to clean up the heaps of waste that has been blatantly piled up by the public gutters, along the streets and other open spaces in the preceding month. Come to think of it, citizens are left to dump waste indiscriminately throughout the month while authorities look on unconcerned and then on national Sanitation Day, we gear up to clean it up. What happens in between the one month period during which heaps of wastes are allowed to accumulate and for how long can we keep this up? (Monney, 2015: on line). Undoubtedly, this back and forth phenomenon cannot be a panacea to the insanitary conditions in our communities until the foundation of this problem is identified and tackled, any effort in addressing it would be futile (Monney, 2015: on line). Poor environmental sanitation is a societal problem primarily caused by human attitude and behaviour and therefore an attitudinal change would be a significant contribution to solving it. The phenomenon of poor environmental sanitation which is believed to be caused by human attitude and behaviour has crept into several communities in Ghana including Amanfrom a suburb of Asamankese in the eastern region of Ghana. Amanfrom is currently experiencing poor sanitation. From observation, open spaces, private and public spaces are littered with garbage which in most cases clogg drains thereby creating conditions for diseases vectors and posing health risks to residents. The National Environmental Sanitation Policy enunciated the commitment and determination to provide an acceptable level of environmental sanitation to all

citizens, thereby enabling her citizens“ to achieve socially and economically productive lives. It is against this background that the researcher sets out to investigate the phenomenon of environmental sanitation attitude among the residents of Amanfrom and assess the nature and effects on the livelihood of the residents.

1.1 Statement of the Research Problem

The sanitation situation at Amanfrom leaves much to be desired. A cursory observation of Amanfrom reveal waste generated from cooking, commercial, industrial and other human related activities are disposed indiscriminately at unauthorised places such as gutters, streets, big drains, and open places and among others. Residents of Amanfrom tend to dump refuse as if it has no implication on their health and social welfare.

The waste obstructs the free flow of drainages causing periodic flooding in the community around the central business area during the rainy season which creates the necessary condition for mosquitoes to breed. The problem becomes more compounded when the content of the drains are usually emptied on the shoulders of the street to ease the free flow of water in drains.



Figure 1.1: A waste-clogged drain within the Amanfrom community.

Source: Fieldwork, April, 2015

Some residents defecate indiscriminately on undeveloped plots of land, and where public toilets are available, quite greater numbers of the residents in the study area do not use the toilet facility. This has resulted into periodic outbreak of disease such as rashes, cholera, malaria, just to mention but a few. Several efforts to combat unsanitary environmental conditions within Amanfrom have been instituted. This includes communal labour, and periodic clean up exercises by the youth and provision of refuse receptacles at vantage areas by the Lower West Akim Municipal Assembly (LWAMA). Despite all these efforts and measures put in place by the leaders in the community, maintaining a clean environment in Amanfrom has constituted an intractable challenge for successive Assembly Members and the Lower West Akim Municipal Assembly (LWAMA). The sanitation problems besides posing severe health risk on residents of Amanfrom are also capable of influencing permanent

damage on the ecological system in the community. This study is therefore undertaken in order to gain an understanding of the problems and issues involved in the environmental sanitation attitude among the residents of Amanfrom and assist in finding a solution to the problem.

1.2 Purpose of the Study

The purpose of this study is to investigate the phenomenon of environmental sanitation attitude among residents of Amanfrom. Also the study was undertaken with the aim of enhancing the understanding of the problem of environmental sanitation attitude in Amanfrom and to identify possible solutions to the problem. In other words, the research was attempts to answer the question “why are residents in Amanfrom unable to maintain clean and good sanitation?”

1.3 Objectives of the Study.

The specific objectives guiding the study are to:

- i. Assess environmental sanitation attitude among the residents of Amanfrom.
- ii. Ascertain environmental sanitation behaviour among the residents of Amanfrom.
- iii. Identify the determinants of poor environmental sanitation at Amanfrom.
- iv. Examine the effects of poor environmental sanitation on residents Amanfrom.

1.4 Research Questions

The following research questions were formulated to meet the objectives of the study:

- i. What is the environmental sanitation attitude among residents of Amanfrom?
- ii. What is the environmental sanitation behaviour among residents of Amanfrom?
- iii. What are the determinants of poor environmental sanitation at Amanfrom?

- iv. What are the effects of poor environmental sanitation on residents of Amanfrom?

1.5 Justification of the Study

The study was carried out due to the fact that environmental sanitation problems in Amanfrom are real. A cursory observation of the community shows visible aspects of garbage, waste-clogged drains, indiscriminate littering of garbage, food scraps and human excreta at both conspicuous and inconspicuous places which affect the health of residents of Amanfrom. Even in areas where communal containers are available, they are left to overflow with waste for a long period of time before being picked up eventually. At times some individuals deposit refuse beside the waste containers due to sheer laziness and the negative growing culture of creating refuse at any place they deem fit. However, from the literature read, there is no published work which specifically examined “Environmental Sanitation Attitude among Residents of Amanfrom”. Thus the environmental sanitation situation creates a knowledge gap and makes it difficult to find a solution to the worsening environmental sanitation issues in Amanfrom. In view of the above, this study can be justified on the grounds that it will further create understanding of environmental sanitation problems among residents and provide a useful starting point for addressing an otherwise intractable problem. The study will also contribute to both the theory and practice on environmental sanitation issues in the country.

1.6 Significance of the Study

It is envisaged that the findings from the study will add up to the existing body of knowledge on environmental sanitation attitude among Ghanaians as well as serve as a basis for further research. It will also generate information for policy makers such as metropolitan, municipal and district assemblies among others and other stakeholders

in the field of environmental education who aims to equip the individual with relevant knowledge, attitudes, values and skills in order to raise concern and awareness for the environmental problems and the prevention of new ones. Besides, it is hoped the key findings and recommendations that will result from this study will be disseminated in a policy by the researcher, which will be distributed to Non Governmental Organisations (NGOs), institutions and individuals who have expressed concern about the environmental problems which have emerged as a serious issue in the world today (Gore, 1993). As this is done gradually, the public would be sensitised and behave pro-environmentally so that they would contribute their quota to maintaining a sanitary environment.

1.7 Delimitations of the Study

Though the issue of environmental sanitation seems to be a major problem in the West Akim Municipality in particular and the whole country in general, the study has Amanfrom as its focus. The study is also limited to only residents of Amanfrom.

The selected population comprises of all residents of Amanfrom. Since the population is so large, the study was delimited to only a cross section of the residents' population. The researcher had to delimit the selected sample in order to manage it more efficiently.

1.8 Organisation of the Research Report

The goal of this study was to investigate environmental sanitation attitude among residents of Amanfrom. The research report is organised into five chapters. This first chapter covers the background to the study, statement of research problem, the purpose and objectives of the study. The justification for carrying out the study,

significance, research questions, delimitation and definition of concepts and organisation of the entire research report are also presented in this chapter.

Chapter two presents“ definitions and explanations of concepts such as sanitation, environmental sanitation, attitude, theoretical frame work underlying the study, environmental policy of Ghana, followed by determinants of environmental attitude behaviour.

The second part of chapter two concerns itself with the review of related literature on attitude, environment, sanitation, environmental sanitation, sanitation system, environmental management, environmental sanitation management, environmental protection agency, national environmental sanitation policy, objectives of environmental sanitation, environmental awareness, environmental attitude, environmental behaviour, determinants of environmental attitude, behaviour, awareness, environmental sanitation and behaviour, determinants of poor environmental sanitation and effects of poor environmental sanitation among residents of Amanfrom.

Chapter three presents the methodological framework adopted for this research. It consists of the study area, research design, the population, population sample and sampling techniques. It also outlines the instruments for data collection, questionnaire, observation, interviews, data collection procedures, validity, reliability measures, data analysis techniques and conclusion of the chapter was also presented.

This is followed by chapter four which is devoted to the presentation and analysis of the data collected through interviews, questionnaire and observations. This data was analysed both quantitatively and qualitatively by using Statistical Product and Service

Solution (SPSS) Version 23. The fifth chapter constitutes the concluding phase of the report. It summarises the main findings of the research, discuss them and offer recommendations for improvements of the situation, further studies on it and looks at the strengths and weaknesses of the study.

1.9 Operational Definition of Terms

Attitude: It has been defined as individual learnt ideas, concepts and perceptions that is generated towards an object, environment or people.

Environment: It has been defined in this study as the sum total of condition which organisms live.

Sanitation: It is defined in this study as the provision of facilities and services for the safe disposal of human urine, feces and waste materials.

Environmental Sanitation: It has been defined as the principles and practices affecting health and hygienic condition in the environment to promote public health and welfare.

Environmental Management: It has been define in this study as the control of all human activities which have significant impact on the environment.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

Following from chapter one which presented the research problem and the research questions among other things, chapter two examines the pertinent issues or ideas related to the theme of the research which are:

- (i) Theoretical Review
- (ii) Environmental sanitation attitude among residents,
- (iii) Environmental sanitation behaviour among residents
- (iv) Determinants of poor environmental sanitation and
- (v) Effects of poor environmental sanitation on residents.

In line with this, the literature review is organised in two sections. Section one would review literature on certain related concepts and section two would concentrate on review of related works to reflect the research questions raised for the study.

2.1 Theoretical Review

This study is guided by Ajzen's (2002) theory of planned behaviour, which provides a framework for studying human action (Figure 1). According to Ajzen, human behaviour is guided by three kinds of considerations: beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (behavioural beliefs); beliefs about the normative expectations of others and motivation to comply with these expectations (normative beliefs); and beliefs about the presence of factors that may facilitate or impede performance of the behaviour (control beliefs). The combination of the three considerations (attitude towards the behaviour, subjective norm, and perception of behavioural control) guide the individual to form a

behavioural intention. As a general rule, the more favourable the attitude and subjective norm, the greater the perceived control, the stronger should be the person's intention to perform the behaviour in question. Intention is assumed to be the immediate antecedent of behaviour or action.

The theory of planned behaviour is useful to this study because perceptions like behaviour are influenced by our knowledge, beliefs, values, and norms but can be formed without experience and knowledge of the person. The more knowledgeable we are about environmental sanitation, the clearer our opinion tends to be, and the stronger our (feelings) perception. Similarly, being informed about an issue is even more likely to influence behaviour when knowledge is gained from first-hand experience (Fazio & Zama, 1981).

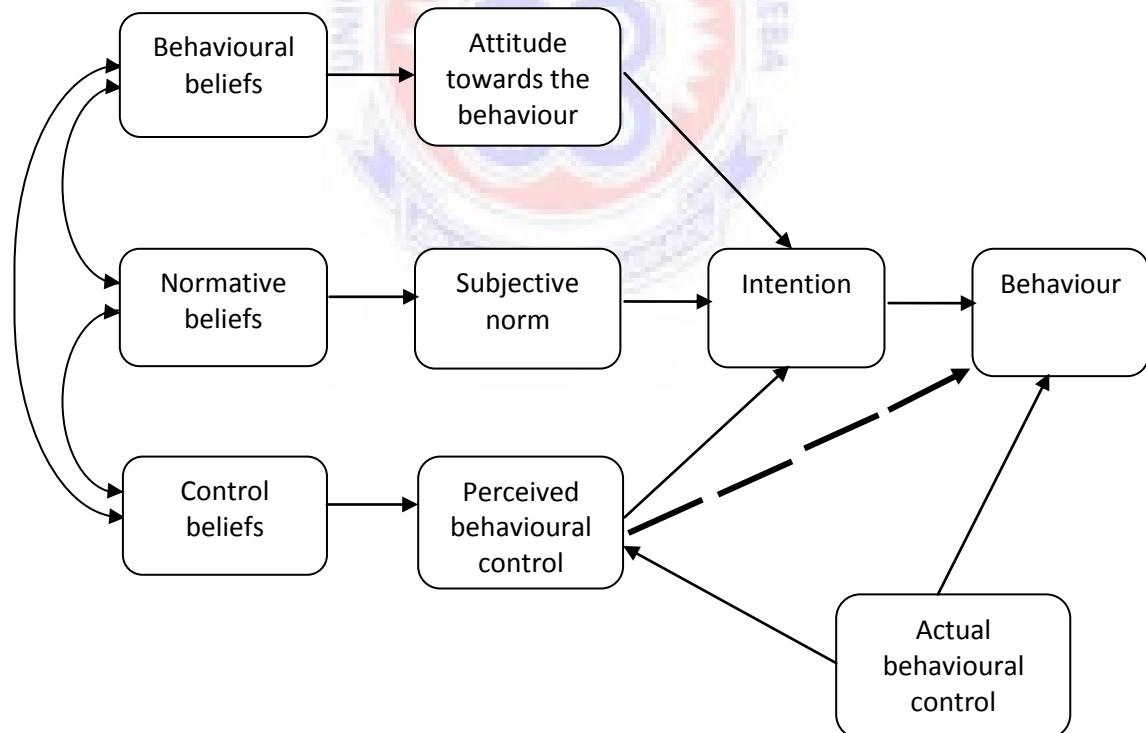


Figure 1.2 The Theory of Planned Behaviour [TPB]. Adapted from Ajzen (2002).

The study found that knowledge about the significance of environmental sanitation will help residents to understand and promote positive attitude consistent with beliefs and feelings towards the environment (Wortman, Laftus, & Marshall, 1992).

2.2 Literature Review on Related Concepts

The key concepts to be reviewed in this study report are:

Attitude, Environment, Sanitation, Environmental Sanitation, Sanitation System, Environmental Management, Environmental Sanitation, Environmental Protection Agency, National Environmental National Policy, Environmental Awareness, Environmental Attitude, Environmental Behaviour, Determinants of Environmental Attitude, Determinants of Awareness and Determinants of Environmental Behavior. Then Relationship between Attitude and Behaviour, Environmentally Responsible Behaviour, Relationship between Environmental Attitudes and Environmental Behaviour and National Environmental Sanitation Policy.

2.2.1 Attitude

Defining an attitude is problematic and there is still no consensus on a definition for it. Also, attitudes are often associated with multiple and even contradictory values (Schultz, 2001). The concept has therefore been defined in various ways by various researchers, usually depending on their specific theoretical review and the constructs they investigated. Plug, Meyer, Louw and Gouws (1986) for example define attitude as a relatively stable, predominantly learnt disposition of an individual towards a specific object (for example, people, things or ideas). Attitude also refers to the way of feeling, learning, thinking, and behaviour to sustain thought that enforced cleanliness (Isangeidigi, 2007).

Thirion (1990) believes that an attitude consists of and is influenced by three components, namely the subject (a person with a specific attitude): the object (at which the subject attitude is directed and the situation in which the subject and object interact with one another). A change in any of these components can cause the attitude to change. An attitude only develops after a person has responded evaluatively to the attitude object and is then expressed or manifested in overt, cognitive, affective or behavioural responses (Willers, 1996). From the above deduction attitude can be defined as an individual learnt ideas, concept, perceptions that is geared towards an object, environment or people.

2.2.2 Environment.

Definitions of the word environment are very similar in their description of what the word entails. For example, (Bell, Greene, Fisher & Baum, 2001) describe the environment as one's surrounding 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 aspect of one's surrounding such as the wilderness, cities or farmlands; the natural (non-human) and the built (human-made). In its modern concept, environment includes not only water, air and soil but also the social and economic conditions under which we live (Park, 2011). From the above definitions, environment can be explained as the sum total of condition within which organisms live. Such environment can be natural, built and personal. Eni (2005) maintained that humans by nature live in two universes. First is the natural universe of nature consisting of soils, animals, air, water and plants that preceded the existence of human beings by hundreds of millions of years of which the human being is an integral and inescapable part. The second is the world of social institutions and artifacts (built world) that humans deliberately created for themselves using science, technology,

culture, political organisation and many others. This definition is in agreement with the view of Shafer and Stephen (2002). According to them, in relation to human health, the “environment” includes not only the physical and biological elements of nature, but also human-based systems, cultural, economic, political, technological, spiritual and relational that make up the setting in which people live (Re NED, 2006). Yucel and Morgil (1998) define environment as all kinds of biotic and abiotic (social, cultural, historical, climatic, physical) factors affecting a living organism or a vibrant community and the duration of life.

Environment is the entire global system that is everything from the outermost reaches of the atmosphere to the earth’s inner core. Inherent in this are all the factors that influence the environment, from its geology to the fauna and flora as well as the entire prevailing climate”. Michaels (2004) collaborates with this by affirming that the environment is “the sum of all external conditions and influences affecting the development and life of organisms”. To Zimmerman (2008), environment refers to the aggregate of an organism be it a person or group of individuals of population. The definition describing the environment as the total of physical, biological and cultural conditions affecting the life of an individual human being (Fiedeldey, Craffert, Fiedeldey-van Dijk, Marais, van Staden & Willers, 1998 p.9) seems to be the most inclusive one and will be used for the purposes of this study.

The scope of the term environment has been changing and widening with the passage of time. In the primitive age, the environment consisted of only physical aspects of the planted earth' land, air and water as biological communities. As time passed on, people extended their environment, through their social, economic and political functions. As part of the deliberate world created by humans, is the school

environment that constitutes the learning atmosphere for the young minds. Neglecting to manage this environment is to undermine the future of any society.

2.2.3 Sanitation

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). Also, sanitation is explain as the provision of facilities and services for the safe disposal of human urine, feces and waste materials (UNICEF&WHO, 2012). Provide a more elaborate definition for the term sanitation as maintenance of hygienic conditions through services such as garbage collection and waste-water disposed. It deals with the control of all those factors in man’s physical environment which exercises a deleterious effect on his physical development, health and survival (WHO, 2013). The views of WHO (2013) collaborate with the assertion of Alabi (2010) who sees sanitation as the principle and practice of affecting health and hygienic conditions in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. From (UNICEF&WHO, 2012) assertion it could be gathered that sanitation must promote clean environment which may lead to healthy and quality life to help the development of the individual in society. Mensah (2002) defines sanitation as the state of cleanliness of a place, community or peoples. He relates it to the aspects of human health including the quality of life determined by physical, biological, social and psychological factors in the environment. Sanitation is “a general program of environmental health to provide a safe source and distribution of portable water and proper collection of water.” Mensah noted that improving sanitation is known to have a significant beneficial impact on health both in households and across communities (Bellamy, 2007). Uchegbu (2002) referred to

“sanitation as the arrangement for protection of health, especially the removal of human, industrial and domestic waste”. In its broad sense it includes the whole process and procedures of keeping the environment clean from waste (both domestic and industrial, keeping the surrounding air and land free from all that could harm them and make them unfit for human usage and thus cause harm to human beings and other living organisms in the ecosphere and biosphere. The National Sanitation guidelines of Ghana (2000) defines sanitation as a process where people demand, develop and sustain a hygienic and healthy environment for themselves erecting barriers to prevent the transmission of diseases. The process thus involves building, using and maintenance of latrines and other sanitation facilities, such as construction of urinals, hand washing facilities, anal cleansing materials and safe water supply. It also involves learning, behavioural change, organisation, and collective action with other community members. For the purpose of this study sanitation will be used as the principles and practices relating to the collection, removal or disposal and treatment of human excreta, refuse, household waste water, drainage of storm water and treatment of industrial effluent as they impact upon people and the environment.

2.2.4 Environmental Sanitation

The Business Dictionary (2012) defines the term environmental sanitation as: Activities aimed at improving or maintaining the standard of basic environmental conditions affecting the well-being of people. These conditions include:

Clean and safe water supply.

Clean and safe ambient air.

Efficient and safe animal, human and industrial waste disposal.

Protection of food from biological and chemical contaminants.

Adequate clean and safe surroundings.

Environmental sanitation is explained as the principles and practice affecting health and hygienic condition in the environment to promote public health and welfare, improve quality of life and ensure a sustainable environment. The essential components of environmental sanitation include:

Solid waste management

Excreta and sewage management

Food sanitation

Hygienic education and promotion (Chaturvedi, 2006).

It could be seen from the above definition that environmental sanitation is very broad and comprises all that is involved in keeping every environment clean and in good condition for the flourishing of life and the planet.

Environmental sanitation is a key factor that enhances human security (Chaturvedi, 2006). According to the Ministry of Local Government and Rural Development (MLGRD, 1999), environmental sanitation refers to the effort or activities aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements. It comprise 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).

Environmental sanitation therefore involves controlling the aspect of waste that may lead to the transmission of diseases. According to the International Water and Sanitation Center (IWSC, 2006:7) 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. In developing countries, environmental sanitation normally includes drains, solid waste management and vector control in addition to the activities covered by sanitation (DFID, 1998).

2.2.5. Environmental Management

The United Nations Environmental Programme defines environmental management as the control of all human activities which have a significant impact on the environment (UNEP, 2005). Mitchel, (2002) explains environmental management as the actual decisions and actions concerning policy and practices regarding how resources and the environment are appraised, protected, allocated, developed, used, rehabilitated, remediated and restored, monitored and evaluated. To be efficient in managing the environment, institutions have to have a good environmental management system to provide a framework for managing environmental responsibilities in a way that is integrated into overall operations. Environmental Management System (EMS) refers to the management of an organisation's environmental programs in a comprehensive, systematic, planned and documented manner. It includes the organisational structure, planning and resources for developing, implementing and maintaining policy for environmental protection.

2.2.6. Environmental Protection Agency (EPA)

The Environmental Protection Agency is the leading public body responsible for protecting and improving the environment in Ghana. Its job is to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner and healthier world. The Environmental Protection Agency (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 environmental behaviour in the country. According to Vodounhessi, (2006), the Environmental Protection Agency is very collaboration-oriented, which weakens its regulatory abilities. There is also, a need to update enforcement procedures for sanitation bye-laws for example; some fines are “ridiculously low” and still listed in British currency (Amoaning, 2006). This needs updating.

2.2.7. National Environmental Sanitation Policy

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, 1991). 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, 2002).

2.2.8 Environmental Awareness.

Environmental awareness is the main products of environmental education (Djordjevic, 2002). There are different definitions of such concept which is justified since environmental awareness is dynamic in its dimension. The term environmental awareness includes values, readiness to become responsible for the people and quality of their environment. Environmental awareness means the individual consumer perception of the impact of human activities on the environment (Kolmuss & Agyemang, 2002). Among other things, environmental awareness encompasses incorporating knowledge of contemporary issues affecting nature locally and beyond, discovering which actions can make a difference in one's surroundings and self awareness concerning personal environmental philosophies (Kolmuss & Agyemang, 2002). Dunlap and Jones (2002:482) indicate that environmental awareness is about "the degree to which people are aware of the problems regarding the environment and support efforts to solve them or indicate the willingness to contribute personally to their solution." According to Weigel (1983) environmental awareness is an evaluation of one's attitude or behaviour towards the environment. Hanssa and Grey (2012) added that it is the indication of one's perception or mindset towards the environment. Rim (2009) refers to environmental awareness as the creation of mental attitude and behaviour of man towards keeping the environment. Gill and Taylor (1981) opined that environmental awareness is a strong attitude towards preserving the environment. Tewari (2004) also regards the concept as the sense, motivation and action taken towards the sustainability of nature and natural resources and mitigation of the environmental problems and disaster of one's surroundings. Madsen (1996) explained that environmental awareness is necessary to achieve environmental protection and restoration. Madsen (1996) emphasised that the public must have a basic grasp of

environmental problems as they must be committed “to initiate actions, based upon knowledge and understanding”. Luke (1980) and Yau (1990) view environmental awareness as the study of humans to realize an existing connection between human activity and the state of the environment and to favour a safe and healthy environment and the conservation of nature.

Potabenko (2000) summarized the following as the characteristics seen in individuals with the sense of environmental awareness:

A concern of the state of the environment.

An ability to identify the sources of environmental threats.

Recognition of a safe and healthy environment as socially valuable.

An understanding of the necessity to take personal part in prevention of protest creation and other collective action.

A readiness to take a personal part in environmentally concerned actions.

Rou (1995) has also referred to environmental awareness as the general knowledge one holds with regard to the environment, everyone’s behaviour on the environment. Environmental awareness, therefore, involves the sense, motivation and action taken towards the sustainability of nature and natural resources and mitigation of the environmental problems and disaster of one’s surroundings. It is a prerequisite component for pro-environmental behaviour. Assessing the level of environmental awareness is a useful tool in predicting the environmental behaviour of young people. Environmental awareness is defined by Schmidt (2007) as encompassing and incorporating knowledge of contemporary issues affecting nature locally and beyond, discovering which actions can make a difference in your surroundings and personal environmental philosophy. Patel (1994) opines that environmental awareness is the sum total of responses that people make to various thematic aspects of the construct

environmental education. Dunlap & Jones (2002) pointed out that environmental awareness is a global attitude with direct effect on behaviour through behavioural intentions. Raymond (1993) stated that the citizens' environmental awareness will change the pro-environmental behaviour more speedily than other techniques such as legal (Prohibitions, norms, legislation) techniques and economics (tax and subsidies) techniques.

From the above definitions, it could be inferred that environmental awareness is about being conscious of one's surroundings and having concern for the preservation of the environment as well as being responsible in the use of natural resources. That is, it is the knowledge which an individual acquires that leads to the conservation and improvement of the environment.

2.2.9. Environmental Attitude

The concept, environmental attitude, has been defined in various ways by several researchers based on their specific theoretical reviews and the construct each of them investigated. Environmental attitude refers to how people view environmental issues, their perspective, beliefs and level of support, including their feelings towards specific people, issues and objects involved (Wortman, Lafus & Marshal, 1992) are of the view that environmental attitudes are thoughts and feelings that encourage us to act as if we dislike or like a person, an object and issues. They further argue that the relationship between human beings and environment is thus a function of culture (Blair, Jones & Sampson, 1975) consider environmental attitude as interest in relation with a wider related concept such as understanding human life including protecting our physical environment. According to UNESCO (1978) environmental attitude is defined as a set of values and feeling of concern for the environment and motivation

for actively participating in environmental improvement and protection. It has also been defined by Rajecki (1998:78) as an “enduring combination of motivational, emotional, perceptual and cognitive process with respect to some aspects of our environment.” Miller and Lavine (1996:19) stated that environmental attitude is an “evaluative tendency regarding some features of the environment and can typically be phrased in terms of like and dislike or favour and disfavour.”

Environmental attitude refers to how people view environmental issues, their perspective, beliefs and levels of support, including their feelings towards the specific people and object involved. Examples include their beliefs regarding environmental issues, environmental value, sense of responsibility, agreement or disagreement, favour or dislike, opinion and inclination (Caron, 1989; Heberlien, 1981; Hines, Hungerford & Tomera, 1986; Widegren, 1998). However, Widegren (1998) goes further to add that environmental attitude is a characteristic acquired over a long period of time, and the individual will persist in environmental concern and eventually participate in environmental protection if they have that attitude (Hines, Hungerford & Tomera, 1981) define the concept as an individual’s support or opposition toward environmental protection, and his likes or dislikes such as toward energy crises, use of unleaded gas and recycling processes.

(Plug, Meyer, Louw & Gouws, 1986, cited in Whynie, 2003) define environmental attitude as a relatively stable and predominantly learnt disposition of an individual towards specific object (people, things, ideas or the physical environment). Chiken (1993) on the other hand, explains environmental attitude as tendencies that are expressed by evaluating a particular entity (for example, the environment) with some degree of favour or disfavour. Environmental attitude also refer to the way of feelings,

learning, thinking and behaviour to sustain a taught than enforced cleanliness (Isangedigui, 2007) According to Holahan (1982) environmental attitude is people's favourable or unfavourable feeling toward some features of the physical environment or towards an issue which pertains to the physical environment. It can be deduced from these definitions that environmental attitude is a mental state of readiness formed by an individual towards an object or the physical environment and this can be either positive or negative. But this attitude should be directed towards the protection of the environment or improving the quality of the environment. Schultz, Silver, Tabanico and Khazian (2004) also refer to environmental attitude as the collection of beliefs, effect and behavioural intentions a person holds regarding an environmentally related activities or issues. Newhouse (1990) explains environmental attitude as enduring positive or negative feelings about some persons, object or issue. The notion that environmental attitude is an enduring feeling is corroborated by Fishbein (1975) who has noted that "environmental attitude is a learned predisposition response in a consistently favourable or unfavourable manner with respect to a given object, person or a situation". Environmental attitude is in a way perceived as how to be in proper relationships with regard to one's environment, that is how an individual shows concern and act friendly or favourably towards the environment, (Puohiniem 2002). Schmidt (2007) defines it as that attitude which "must be perceived by the individual as connected in some meaningful way to a specific situation to serve as the basis for evaluating a reaction in that situation." Milfont and Duckitt (2010) also see environmental attitude as a psychological tendency expressed by evaluating the natural environment with some degree of favour or disfavour. Other authors argue that environmental attitude is the concern one shows towards the physical environment (Dunlap & Jones, 2002). Muammar (2002) posits that environmental

attitude is about the perception of values about a given environmental issue. Tobint, Tippings, Gallard (1994) also view environmental attitude as a learned belief which develops from an individual's belief, knowledge and values about the environment and governs action to support or sustain the environment. Sdoro (1993) provides a more elaborate definition of the term, environmental attitude as "an evaluation of ideas, events, objects or human beings in relation to their physical environment". Blair, Jones and Sampson (1975) for instance have referred to environmental attitude as "an interest one has in relation with wider related concepts such as the understanding of human life including the protection of our environment". This means environmental attitude does not deal with favourable or unfavourable feelings one has towards an object or issue alone but also the nature of human beings and how they can preserve their surroundings. Drawing from the views expressed above, the definition of environmental attitude to be used in this study refers to the collection of beliefs, affection and behavioural intention a person holds regarding environmentally related activities or issues. This implies environmental attitude has to do with the way a person directly relates to all the things and activities surrounding him or her.

2.2.10. Environmental Behaviour

Environmental behaviour is regarded as the total action exhibited by mankind towards the improvement of environmental quality. These behaviours are recognized as important due to the effects that the consequences of not acting in an environmentally-conscious way, not recycling plastic items will have on society and on the quality of human life in future (Barn, 2007; Stern 2000). Environmental behaviour is defined as all types of behaviours that change the availability of materials or energy from the environment or alters the structure and dynamics of ecosystem or the biosphere (Cronin & Bevenguer, 2000). Efrat and Stander (2012)

refer to environmental behaviour as any active responsiveness to current environmental issues believed to be pro-environmental by the person performing the response. Ajzen (1998) posits that environmental behaviour is a person's active involvement at all levels in working toward resolution of environmental problems. Bamber (2003) also explains that environmental behaviour means the observable and reported behaviour of the individuals, either done or willingness to do in future regarding the protection of the environment. Similarly, environmental behaviour is regarded as the range of human actions or activities, all shaped by intentions to protect both the physical and natural environment (Stern, 2000). According to Kollmus (2002:21) environmental behaviour means a "behaviour that consciously seeks to contribute to positive or negative impact of one's action on the natural and the built environment". Gambal, Schult and John (1994) states that environmental behaviour serves as an active responsiveness to current environmental issues, believed to be pro-environmental by the person performing the action. From the above scholarly literature on the definitions of environmental behaviour, the term can be viewed as one's active responsiveness to current environmental issues, believed to be pro-environmental by the person performing the response. That is, environmental behaviour is regarded as a person's active involvement at all levels in working towards resolution of environmental problems. Environmental behaviour therefore requires transfer of skills and increase in motivation for one to act in environmentally responsible manner. Hooper and Nelson (1991) consider the term environmental behaviour as environmental literacy which requires transfer of skills and increase in motivation for one to act in "environmentally responsible" manner. Kollmus and Agyemang (2002: 240) are of the view that an environmental behaviour is a "behaviour adopted by an individual who decides consciously to minimise his or her

negative impacts on both natural and constructed milieus”. This makes the term the observable and reported behaviour of the individual, either done or willingness to be done in future regarding the protection of the environment.

2.2.11. Determinants of Environmental Attitude

Determinants of environmental attitude could be explained in line with the traditional thinking in the field of environmental education which posits that we can change behaviour by making human beings more knowledgeable about the environment and its associated issues. This thinking has largely been linked to the assumption that increased environmental knowledge would automatically lead to environmental awareness (perceptions) that would in turn lead to pro-environmental attitude that will be expressed as overt and responsible environmental behaviour. It implies that knowledge increases attitude or awareness which in combination would motivate environmentally responsible behaviours. That is behaviour in general is supported by knowledge and attitude but there is not a direct cause and effect progression from knowledge to attitude to behaviour (Monroe, Day & Graiser, 2000).

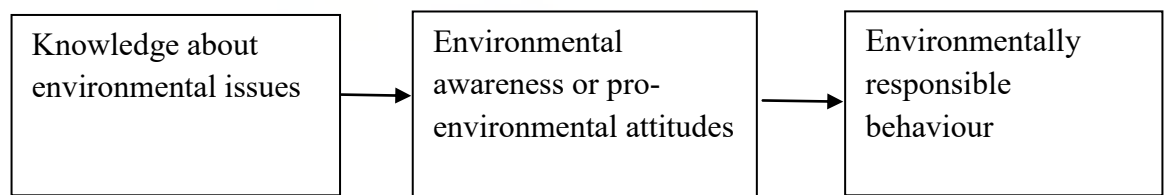


Figure 2.1 A linear Model of Environmentally Responsible Behaviour

From figure 2.1, it is believed that a high level of environmental knowledge will create a positive attitude towards the environment which may result in environmentally responsible behaviour. This is corroborated by Hunger and Volk (1990) cited in Palmer (1998) according to Palmer (1998) knowledge regarding the

environment and the skill of action or behaviour is very important for an individual in changing his attitude. In this regard, when knowledge related to the environment increases, the positive attitude towards environment is directly expanded which further translates into positive environmental behaviour. However, from the various studies on environmentally responsible behaviour that have been undertaken over the past 20 years, most of these research findings suggest that attitudes do not necessarily influence or lead to overt behavioural changes. For example, a positive attitude towards the environment will not necessarily mean that an individual will buy environmentally friendly products or recycle these products (Bell, Greene, Fisher & Baum, 2001). Wicker (1969) found a weak relationship between attitude and behaviour in Baron and Byrne (1987). Although attitudes may not necessarily cause behavioural changes, they may have important casual effect on behaviour. Attitudes are theoretical construct and are not accessible through direct observation (Fishbein & Ajzen, 1975 in Dillion & Gayford, 1997). They must be inferred from measurable responses such as direct observation of behaviour. Since this is often difficult to achieve, responses such as statements of intentions are frequently used as they are considered to be more reliable predictors of behaviour. An individual's behavioural intentions are also influenced by factors such as his or her attitude, social norms and perceptions of personal control over a given situation. The under listed variables are also crucial in determining the environmental attitude of people:

Marital status of an individual: Marital status might influence one's environmental attitude to a large extent; it can be argued that married people are more compliant or more concerned about environmental problems than the others. Especially, when it is compared to singles because, married people are more constrained by their social network and often strongly involved in the community (Title, 1980). They further

might be more concerned with local environmental problems than singles as the “parent effect” makes them seek their children’s future welfare (Dunport, 2004). With regard to educational issues, it is believed that people with formal education have a significant influence on the environment and are therefore willing to contribute meaningfully to its protection and improvement. There is a tendency that higher levels of education might lead to a higher preference for environmental protection (Blomquist & Whitehead, 1998; Engel & Potschke, 1998; Witkzed & Urfer, 2001; Israel & Levinson, 2004; Veisten, 2004).

On the other hand, informal education matters greatly. The informal education as expressed here, concerns the training and education one acquires at home, from friends and other acquaintances (White-head, 1991; Blomquist and Whitehead, 1998; Carlson & Johnsson-Stenman, 2000; Hidano, 2005). In addition, well-informed citizens who know about environmental problems might have stronger environmental attitudes, because they are likely to be aware of the possible damage that results from the situation (Danielson & Van Houtven, 1995). The socio-economic status of an individual also forms a significant part in influencing his or her attitude towards the environment. The prevention of environmental damage is not only on the consumption of public goods, but also on normal goods. Thus, demand may increase with income (Franzen, 2003). Wealthier citizens may have a higher demand for a clean environment and less environmental damages. This is not always so in all cases. The opposite situation does exist in most communities in Ghana where in some residential areas both the rich and the poor are seen disposing off refuse indiscriminately despite the availability of litter bins.

Aside from this, an additional factor that compliments the economic situation of individuals is their occupational status. Witzke and Urfei (2001) found that some labour groups such as persons engaged in the household or maternity leave had higher environmental preferences. Blomquist and Whitehead, 1998; Engel and Potschke, 1998; Witkzed and Urfer, 2001; Israel, Lavinson & Veisten (2004) in their study explained that unemployed people, occasionally, lower their preferences for environmental protection policies. However, the latter relationship sometimes is neither clear nor significant at all (Engle & Potscke, 1998; Witzke & Urfei, 2001).

Some studies have shown that age is negatively correlated with the willingness to contribute to additional environmental protection since older people will not live to enjoy the long-term benefits of preserving resources (Whitehead, 1991; Carlson & Johnasson-Steriman, 2000). In effect, it could be speculated that relatively young people would develop positive environmental attitude as compared to relatively old people. The above is substantiated by Howell and Laska (1992) in their findings which indicated that, younger people are more concerned about environmental problems than older ones. However, there are two age effects, a life cycle or ageing effect due to being at a certain stage of age and a cohort effects cover the difference of attitude between different age-cohorts due to generational differences in socialization, life experience and economic conditions (Vlosky & Vlosky, 1999). In this sense, Nouri, Karbassi and Mirka (1998) showed a strong relationship between age and environmental concern.

Gender is another crucial factor in people's attitude towards the environment. Experimental and empirical studies have shown that gender differences in other areas such as charitable giving, tax morale, bargaining or household decision making play a

role in once attitude to the environment (Brown-Kruse & Hummels, 1993; Nowell & Tinkler, 1994; Andreoni & Vesterlund, 2001, Eckel & Grassman, 2001; Torgler, 2006). Thus, it is likely gender may have a link with people's attitude with the environment. It is often argued that gender, tradition, socialisation, cultural norms, women's roles as caregivers, nurturers and giving encouragements to others to be cooperative and the feel of compassion lead to a higher concern for the maintenance of life and the environment. The "traditional" domain of women working at home induces a greater likelihood to engage privately in behaviour aiming at the preservation of the environment. Simply put there is the likelihood that women would be more positive towards the environment than men.

Similarly, one's place of residence can also be seen as predictor of environmental attitudes. Bell, Greene, Fisher and Baum (2001) cited in Whyntie (2003) for example found that urban and rural residents in the US view natural environment differently. Other findings from attitudes in the US suggest that urban residents are more likely to be environmentally concerned than rural ones (Fiedeldej, Craffert, Fieildelay-van Dijk, Marrias, Van Staden & Willers, 1998). Lyons and Breakwell (1994) agree that place of residence and academic achievements are related to environmental concern. They also believe that urban people are more positive in their attitudes toward the environment than the rural people and that those with high academic achievement tend to be more environmental concern than those with low academic achievement. The above assertion by Lyons and Breakwell (1994) is not wholly true in all communities in most African countries especially in Ghana. Since in some rural communities in Ghana which are ruled by traditions, customs, religious beliefs, cultural practices, and sanitation ethics among others the rural folks always show a lot of concern and also behave pro-environmentally. As a result of this, some rural

dwellers tend to be more environmental concern than some people living in the urban communities.

Schultz (2000) believes that people's attitudes towards the environment and the type of concern they develop towards it are associated with the degree to which they view themselves as interconnected with nature. What Schultz (2000) is trying to put up here is that people's perception and view of the environment go a long way to affect how they relate to environment. Stern and Dietz (1994) agree and add that a person's attitude towards the environment is based on the relative importance that a he or she places on him or herself, other people and the natural environment. In other words, a person's attitude towards the environment is based on his or her general set of values. People with different value orientation will ultimately have different attitudes towards the environment. These differences are based on demographic variables such as level of education, age, gender, ethnicity, socio-economic status and place of residence among others which are the likely possible determinants of environmental attitudes.

2.2.12. Determinants of Environmental Behaviour

According to Ajzen and Fishbein (2005), attitudes make the greatest impact on human behaviour only when there are favourable conditions. That is to say for one to be influenced by certain attitude implies the person has failed to perform what is expected of him or her. Attitudes give stimulus for behaviour to emerge, these are influenced by personal, social or informational factors, and they help evaluate behaviour in a positive or negative way, surrender to or resist social pressure and behave in one way or another. Moreover, as indicated by Ajzen and Fisbein (2005) the same factors also make an impact on person's perceptions whether he or she is able to exhibit such behaviours or keep it suppressed. These personal, social or

informational factors have a direct influence on behavioural intentions that help to predict behaviour.

Determinants of environmental behaviour can also be seen in the Theory of Reason Action which is also known as subjective norm and this reflects a person's perception of social pressure regarding the performance of behaviour. In line with environmental behaviour protection, subjective norms can be viewed as beliefs. These beliefs explain whether planned conservation behaviours have to be implemented or not. To illustrate, green lifestyles which are becoming even more fashionable and socially desirable these days forms belief about sustainable consumption (Trad 2008, cited in Riethmuller and Buttris 2008). Green lifestyles can influence not only behavioural intentions (Kaizer & Gutscher 2003; Kaizer & Scheuthle 2003) but also behaviour itself (Valle et al., 2005). Apart from attitudes towards behaviour and subjective norm expressed in the Theory of Planned Behaviour, it goes further by adding another determinant that is, the Theory of Reasoned Action which is the base of Theory of Planned Behaviour and this distinguishes two determinants that predict behavioural intentions: personal attitudes towards behaviour and subjective norm. The first determinant refers to positive or negative evaluation of a particular behaviour which is formed by individual's behavioural beliefs. For example, if a person believes that by buying certified organic goods he or she contributes to the reduction of environmental pollution but helps in the conservation of natural resources, then it can be stated that personal attitudes towards the performed behaviour are positive. Respectively, if a person is convinced that eco-label are nothing more but marketing tricks, his or her attitudes towards buying these goods will be negative. Another determinant is the Perceived Behavioural Control (PBC) which refers to a person's perception (Ajzen, 1992). PBC affects both behavioural intentions and behaviour itself. In terms of

environmental behaviour, PBC explains how a person perceives his ability to perform such behaviour, which depends not only on his attitudes and societal constraints, but also a personal belief about contributing to solving environmental problems. For instance, it is more likely that people will behave more environmentally friendly if they understand their personal impact on the environment (Birgelen, Semeijn & Keiche, 2009). Respectively, if someone perceives behaviour as too complicated (i.e. recycling), it is less likely that such behaviour will be performed. Education, population pressure and happiness are also significantly correlated with environmental behaviour (Suneetha, 2007). By this assertion, a person's level of education together with population pressure is significant determinants that affect behaviour towards the environment.

2.2.13. Determinants of Environmental Awareness

Environmental awareness is an important issue in environmental protection (Tobias, 2003). It is assumed that people, who are more environmentally aware, are more likely to tolerate and participate in measures that lessen the burden of the environment. Furthermore, most activities and measures undertaken to protect the environment affect lives of people at some point in time. Efforts to raise awareness usually focus on education as the classical method. The education here has to do with formal education, which is undertaken from the basic through to the tertiary level. Hence, efforts are being made to inculcate environmental consciousness or awareness among the masses. It is education which can make human beings conscious and knowledgeable about the environment and environmental problems. The main purpose of environmental education in schools and the public is to acquaint and sensitise the populace on environmental problems, concerns and awareness. Additionally, it is an idea to inculcate in them a healthy personal and social attitude as

well as behaviour towards the environment. Thus, the public must be aware about the environment and problems associated with it so that they can play their roles very effectively in solving environmental problems. As a result of this, it is necessary to know how residents are aware of their environment and its problems.

Media coverage, including newspaper reports, radio broadcasting, television and internet programmes also play a role in ensuring environmental awareness. Topics on the political agenda and campaigns that focus on emotional involvement of the population also help to direct public attention to environmental issues and raises people's awareness on the environment.

Duroy (2005) in his study showed that economic influence has a marginal direct influence on environmental awareness but no direct effect on environmental behaviour. According to Duroy (2005), the level of subjective well-being and the level of income equality rather do have direct effects on environmental awareness. Duroy's (2005) argument on economic influence having marginal direct influence on environmental awareness but no effect on environmental behaviour is difficult to accept wholesale. This is because the economic influence of an individual could affect one's environmental behaviour towards the environment by either being friendly or unfriendly. His assertion cannot stand the test of time as a person's environmental behaviour, might depend on the knowledge, preparedness, awareness and concern that the person has in protecting the environment and also one's favourable behaviour towards the preservation of the environment.

2.2.14. The Relationship between Environmental Attitude and Behaviour

Various studies on environmentally responsible behaviour have been undertaken over the past 20 years. Most of these research findings however, suggest that attitudes do

not necessarily influence or lead to overt behavioural changes. For example, a positive attitude towards the environment will not necessarily mean that an individual will buy environmentally friendly products or recycle these products (Bell, et al., 2001). Wicker, (1969) in fact found a weak relationship between attitude and behaviour (In Baron & Byrne, 1987). Although attitudes may not cause behaviour, they may have important causal effects on behaviour. The question is therefore when and how attitudes will have causal effects on behaviour.

Attitudes are theoretical constructs and are not accessible through direct observation (Fishbein & Ajzen, 1975 in Dillon & Gayford, 1997). They must be inferred from measurable responses such as direct observation of behaviour. Since this is often difficult to achieve, responses such as statements of intentions are frequently used as they are considered to be more reliable predictors of behaviour. However, an individual's behavioural intentions are influenced by factors such as his or her attitude, social norms and perceptions of personal control over a given situation. This is the basis of a psychometric model developed by Ajzen and Fishbein (1980 in Dillon & Gayford, 1997) in their theory of reasoned action and in Dillon and Gayford's (1997) subsequent theory of planned behaviour.

According to Dillon and Gayford (1997), Ajzen and Fishbein's theory of reasoned action provides a theoretical review within which the relationship between attitude and behaviour can be studied. In their theory they distinguish between beliefs, attitudes, intentions and behaviour. Beliefs involve knowledge or opinions concerning the attitude object; attitudes involve emotions and evaluations with respect to that object; intentions refer to the behavioural aims; and behaviour involves the actual action itself (Dillon & Gayford, 1997).

Fishbein and Ajzen (in Dillon & Gayford, 1997) postulated a specific pattern of effective relations among the four components. In their view, for instance, actual behaviour is, first, a function of behavioural intentions, and second, a function of attitudes that, in turn, is affected by knowledge. A critical assumption in their theory is that knowledge and attitudes influence actual behaviour only through behavioural intentions.

According to them, behavioural intentions are the best predictors of actual behaviour. In line with this theory at least four environmentally related dimensions could be distinguished; knowledge and opinions concerning the environment; attitude towards the environment; willingness to make personal sacrifices in favour of the environment (behavioural intention) and environmentally responsible behaviour (Dillon & Gayford, 1997). They also stress that knowledge affects actual behaviour only through attitude and behavioural intentions.

According to Dillon and Gayford, (1997) the principle of Ajzen and Fishbein's theory is that it integrates attitude, subjective norm and perceived behavioural control. Dillon and Gayford, (1997) furthermore believe that these variables exert powerful influences on behavioural intentions. They have therefore adapted Ajzen and Fishbein's theory and described the variables in the following way:

An attitude is an individual's beliefs about the outcomes of the behaviour (known as the „behavioural belief“), combined with the value placed on those outcomes (known as the „outcome evaluation“).

A subjective norm is the individual's perception of the social pressure to perform or not to perform a particular behaviour based on his or her beliefs (known as „normative

beliefs“) about the wishes of peer group, family and important others and his or her „motivations to comply“ with this pressure. Just as beliefs concerning consequences of behaviour underlie an individual’s attitudes and normative beliefs underlie his or her subjective norms, so beliefs about resources and opportunities (known as „control beliefs“) underlie an individual’s perceived „behavioural control“. Perceived behavioural control is thus the degree of control that an individual thinks he or she has over his or her actions. This perception reflects past experience as well as an anticipation of impediments and obstacles (Dillon & Gayford, 1997).

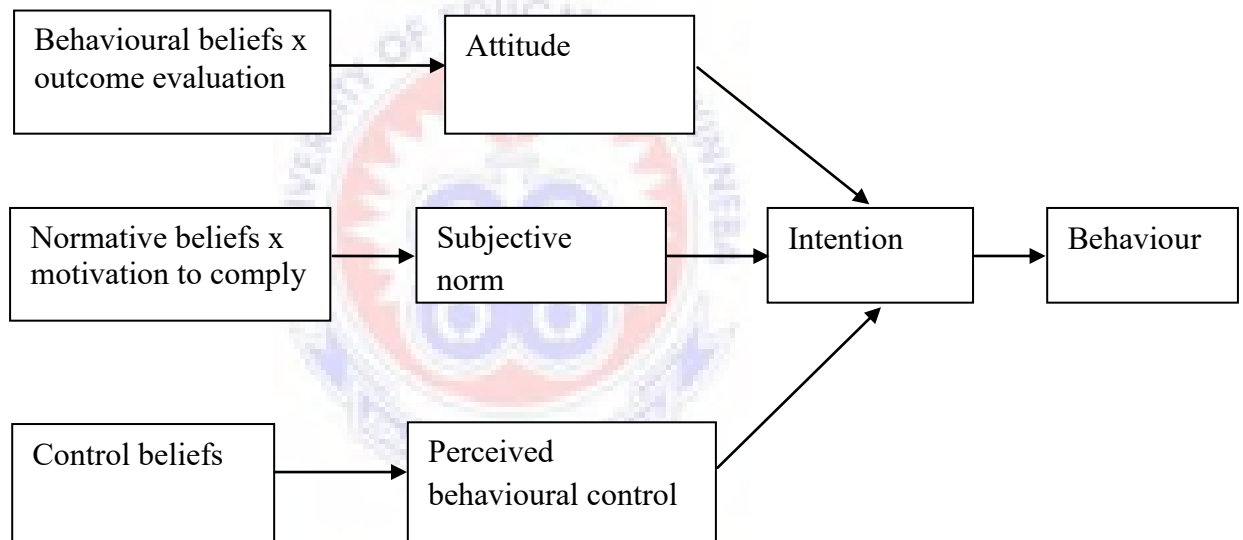


Figure 2.2 Dillon and Gayford’s (1997) Model of Planned Behaviour

The model has been used in a wide range of contexts for investigating human behaviour in a variety of social groups and cultures (Dillon & Gayford, 1997). Questions focused on personal intentions rather than the way respondents felt those in society expected them to respond. 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. As Ajzen (1988) in Dillon & Gayford, (1997, p. 288) has observed „in the final analysis, a person's behaviour is explained by considering his or her beliefs. Since people's beliefs represent the information (be it correct or incorrect) they have about themselves and about the world around them, it follows that their behaviour is ultimately determined by this information.“

This model allowed comparison between three different kinds of normative influence: family, close friends and those considered experts. Responses in relation to the normative influences of family and close friends often showed a broader distribution, indicating that these influences are often fairly weak. There was generally a tendency for more strongly held positive views relating to normative beliefs based on the opinions of experts. The responses relating to personal control over a given situation also showed fewer strong positive responses, suggesting that many respondents felt that their personal control over many of the issues were limited (Dillon & Gayford, 1997).

The results of the study conducted by Dillon and Gayford, (1997) showed that within the broad range of questions relating to different aspects of environmental issues, most of the respondents gave positive responses. The most consistent positive distributions across the different elements of the model were those concerning the recycling of glass. A possible explanation may be that in areas where the issue appears to be most straightforward, where there is reasonable information available and individuals are able to exercise more control over both their behaviour and its outcomes, they tend to make supportive statements about environmentally responsible intentions (Dillon & Gayford, 1997). The results show among other things, the

composite importance of the influences of attitudes, subjective norms and perceived control of behavioural intention, with attitudes appearing to be the most consistently associated with behavioural intentions (Dillon & Gayford, 1997).

From the above, one can infer that people sometimes give careful and deliberate thought to their attitudes and the implications of those attitudes on their behaviour. The best predictor of how a person will act in a given situation is the strength of his or her intention with respect to the situation (Dillon & Gayford, 1997). For example, a person may have an intention to engage in certain behaviour, and not necessarily be driven by an attitude.

The following factors may play a role. The person's attitude towards the behaviour in question, for example, a very shy person may be too timid to participate in anti-cruelty to animals demonstration. The second factor known as subjective norms refers to the person's belief about how others will evaluate the proposed behaviour. If the person believes others, especially significant others will view the proposed action and hence him- or herself in a very positive light, it may strengthen his or her intention to engage in that particular action or behaviour.

The person thus has a vested interest in performing that particular behaviour (Baron & Byrne, 1987). The ease or difficulty with which a person perceives a proposed behaviour, will also impact on whether the person will actually engage in that overt behaviour or not. For example, a person may support the notion of recycling but view the act of engaging in recycling as time consuming and inconvenient and hence refrain from doing so. The perceived consequences of behaviour therefore influence intentions, which in turn strongly influence or predict actual behaviour.

Other less obvious factors are also related to attitude strength. One is direct experience. Attitudes formed by direct experience tend to be stronger and to predict behaviour better than other attitudes (Baron & Byrne, 1987; Bell, et al., 2001). Attitude accessibility, which refers to how readily an attitude comes to mind, is another factor that may play a role in how attitudes affect behaviour. It stands to reason that strong attitudes come readily to mind and therefore exert more influence on behaviour than weaker attitudes.

Direct experience and vested interest also make the attitude accessible, and are therefore two factors that increase the effect an attitude has on behaviour (Baron & Byrne, 1987). Another factor that may strengthen the attitude and behaviour relationship is the amount of information or knowledge that is available. According to Eagly and Chaiken, (1993), the less information an individual possesses about an attitude object, the more unstable the attitude will be.

Although Wicker, (1969) found a weak relationship between attitude and behaviour, other studies show that attitude can in fact predict behaviour under some conditions (Willers, 1996). Bright and Tarrant, (2002) believe that strongly held attitudes are more likely to predict related behaviour than weakly held attitudes. Some studies confirmed this as they showed that the relationship between general attitudes (for example, attitudes about religious or political issues) and behaviour tend to be weak whereas the relationship between specific, narrow and precise attitudes (referred to as attitude specificity) and behaviour tend to be quite strong (Baron & Byrne, 1987). According to Newhouse, (1990), the more relevant or important an object is to one personally, the more predictable will the behaviour of the person towards that object. The careful consideration of the pros and cons of engaging in a certain behaviour or

not however, is not always an option. There are situations that require immediate action and do not allow for careful deliberation or reflection. In these situations, the person's attitude, coupled with his or her perception of appropriate behaviour (social norms) and previous experience, will influence immediate behaviour or reaction on that person's part. One can thus postulate that attitudes are related to behaviour. When these attitudes are strong and important, are acquired through direct experience and influence the person's self-interest and are accessible, they can have stronger effects on behaviour.

2.2.15. Environmentally Responsible Behaviour

Various studies on environmentally responsible behaviour have been undertaken over the past 20 years. Some of these studies showed that the process is more complex than the one illustrated in figure 1 and that prediction of environmentally responsible behaviour depends on various factors that interact (Bell, et al., 2001; Hungerford & Volk, 1990). Research focused mainly on identifying the demographic and personality characteristics of those most likely to engage in environmentally responsible behaviour (e.g. Hines, Hungerford & Tomera, 1987) and on the effects of behavioural interventions on environmental behaviour. The most enduring avenue of research in this area, however has been to examine how cognitive and psychosocial variables influence environmental behaviour.

Variables studied have included the influence of perceived costs and benefits of the behaviour (e.g. De Young, 1990); inconvenience of performing the behaviour (e.g. Humphrey, Bord, Hammond & Mann, 1977); barriers and facilitating conditions to performing the behaviour (e.g. Derksen & Gartrell, 1993); knowledge or difficulty of the behaviour (e.g. De Young, 1989); perceived effectiveness or control required to

perform the behaviour (e.g. Hines, et al., 1987); attitudes toward the behaviour (e.g. Hines et al., 1987) and social influences on the individual performing the behaviour (Taylor & Todd, 1995).

Taylor and Todd (1995) believe that people generally seem to be sensitive to environmental issues, and may have a positive attitude toward environmental programmes. Yet, despite these positive attitudes, participation in environmental programmes such as waste management programmes for example, varies widely (Bell, et al., 2001). Little is known about how an individual's beliefs and attitudes are related to behaviour. Hopper and Nelson (1991) suggest that this is because the literature lacks an integrated theoretically based model to understand the relationships between environmental beliefs, attitudes and behaviour. Schultz (2000) agreed to the argument and added that this may be because most of the research on environmental issues have been based on traditional social psychological theories of attitudes, resulting in most of the research on environmental concerns, motives and behaviours, being fragmented and hence difficult to integrate into an organised theory.

2.2.16. Relationship between Environmental Attitudes and Environmental Behaviour

To reiterate, the underlying assumption has been that people who are knowledgeable about the environment have positive attitudes toward the environment and manifest these positive attitudes in environmentally responsible behaviour (Kuhlemeier, Van den Berg & Lagerweij, 1999). Research has already shown that this assumption is untrue. For example, research by Dunlap, (1991) in Scott and Willits (1994) indicates that despite the growing concern among US citizens of the need to protect the environment, few have adopted a more environmentally responsible lifestyle. Dunlap

goes further and offers a few reasons to explain this discrepancy. He suggests that public concern for the environment may decrease because of the increase in governmental attention to environmental issues, as people tend to believe that the government will now take care of and deal with the problems. Secondly, people tend to see institutions and big companies as the culprits, not individuals; hence they fail to change their ways. Thirdly, people may be willing to change some aspects of their lives (e.g. recycle household waste), but not others (e.g. using public transport instead of driving). Dunlap also feels that people may not have sufficient information about how to act in ways that are more environmentally responsible. He believes that those who are more environmentally aware are more likely to engage in environmentally responsible behaviour if there is strong leadership in regard to environmental protection, emphasizing the urgency for people to change their lifestyles (Scott & Willits, 1994). Scott and Willits (1994) offer the following explanation for the discrepancy. According to them all the media coverage of environmental problems and issues resulted in people learning the language of environmentalism, without developing a simultaneous behavioural commitment. They add that people may simply be unaware of how their personal behaviour impacts on the environment. In other words, people may simply lack the necessary information on what specific actions they can engage in to become more environmentally responsible.

It is now also believed that environmental knowledge does not necessarily lead to positive environmental attitudes that are manifested in overt and responsible behaviour toward the environment. The following findings support this statement (Kuhlemeier, Van den Bergh & Lagerwey, 1999) found that attitudes and behaviour of individuals who are knowledgeable about environmental issues do not differ from those individuals who do not possess that environmental knowledge. This led them to

conclude that environmental knowledge does not necessarily lead to pro-environmental attitudes or a willingness to engage in environmentally responsible behaviour, especially not when this requires making sacrifices on their part or inconveniencing them.

However, a willingness to make sacrifices (a behavioural intention) is more likely to lead to environmentally responsible behaviour than an environmental attitude on its own. One can therefore say that a more positive environmental attitude and greater willingness to make sacrifices are more likely to lead to more environmentally responsible behaviour.

Kuhlemeier, Van den Bergh & Largerwey (1999) however found that the behavioural intention „willingness to make a sacrifice“ combined with a positive environmental attitude did not necessarily lead to more environmentally responsible behaviour on the part of people. This raised the question of why these people did not put their behavioural intentions into practice more often. They offer a possible explanation for this. According to them, residents may not have sufficient knowledge of the consequences of their behaviour on the environment. They suggest that environmental education be used to provide people with knowledge of and skills in using environmental strategies.

It is particularly important that the link between environmental problems and residents' personal lifestyles be stressed. It is also important to raise the awareness of residents to the environmental choices they face as for example residents, consumers, garbage producers and travelers (Kuhlemeier, et al., 1999). The different studies showed that people were unaware of the impact of their own individual lifestyles on

the environment. People also felt that they did not possess the necessary knowledge (information) or skills to make a tangible difference in their environments.

Vaske and Kobrin (2001) believe that place attachment facilitates the development of environmentally responsible behaviour. They operationalise place attachment as place dependence which refers to a functional attachment to a specific place and place identity which refers to an emotional attachment to that specific place. According to them a person will engage in environmentally responsible behaviour towards a place (natural setting) if they have emotionally meaningful ties to that place. Environmental education programmes should therefore be designed in such a way that they help individuals form an emotional attachment to their immediate environment and the broader or global environment.

Much of the preceding research is based on data that is over 15 years old. It is imperative to update this data to ascertain whether these findings are still applicable as such information is crucial when designing new environmental education programmes (Scott & Willits, 1994).

2.2.17. National Environmental Sanitation Policy

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 equipment transfers. The policy then lays out its strategy to deal with these problems. Key items in the strategy include:

- i. Defining the roles and responsibilities related to environmental sanitation of institutions from the national ministries down to unit committees, community organisations, and the individual;
- ii. The privatisation of environmental sanitation services;
- iii. The creation of a National Environmental Sanitation Policy Coordinating Council (NESPoCC) and a District Environmental Sanitation Fund (DESF);
- iv. The phasing out of pan latrines (by 2010). Targets were set for 2020 (except for the phase-out of pan latrines, which was targeted for 2010).

This has allowed the government a lot of flexibility. Each of the above components is discussed below.

- a) 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 Tayler and Salifu in 2005 identified loopholes in the activities and coordination between some ministries and institutions and thus recommended an update to include the roles of the MWRWH and Community Water and Sanitation Agency (CWSA), and to clarify the roles of some other institutions and ministries (e.g., Ministry of Health).
- b) 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 an 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:
 - i. Cleansing within and in the immediate environs of the property they occupy, including access ways and the drains and roads abutting the property;
 - ii. Temporary storage of wastes within the property and disposal thereof outside the property, as may be directed by the competent authority;
 - iii. Taking measures to prevent the breeding of disease vectors within and in the immediate environs of the property they occupy;
 - iv. Ensuring that the wider environment is not polluted or otherwise adversely affected by their activities;
 - v. Hygienically disposing of all wastes they generate in public areas by use of an authorised public toilet or solid waste container as appropriate;

- vi. Participating in all communal environmental sanitation exercises organised by the community or its representatives (MLGRD, 1999 p. 6).
- vii. 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 clear opportunity for Lower West Akim Municipal Assembly (LWAMA) to enact strict environmental sanitation bye-laws to make the residents responsible for environmental sanitation in Amanfrom to ensure good environmental sanitation practices.

2.2.18. Environmental Sanitation Attitude among Residents

Environmental sanitation refers to as a kind of “mindset” representing a learnt predisposition for a certain opinion (Kelly, 1971). This definition signifies that individuals have different opinions to situations so long as environmental problems are concerned. Most people have non-charlatan attitude towards waste disposal. These kinds of persons could be perceived as one who litters the environment like no man’s business with no regards or respect to the environment. They do not consider the need to appraise or talk to people and neighbours about environmental sanitation. For example, if an individual is littering the environment with papers or any form of waste anywhere they do not seem to exhibit any annoyance or correction to such a situation. That is they are oblivious to pollution that happens within their surroundings. Such persons contribute to environmental degradation as their attitudes may go a long way to pollute the environment which may result in the outbreak of diseases. They do not consider living in a clean surrounding as essential hence they cannot keep clean

environment. They play passive role in sanitation activities and refuse to co-operate with others in cleaning up residential surroundings because of their negative attitudes. Some educated and enlightened residents also participate in this misconduct. According to Starhrl, (1992) the main reason for the incessant growth of volumes of waste in most communities is as a result of the ignorance of some residents towards the effect of indiscriminate dumping of refuse and the care-free attitude of some residents, who know what, should be done but, they are careless about it. Human attitudes that lead to filthy environment are influenced by waste generation and disposal in some towns and villages in Ghana. This is supported by the study of Simon, (1994) who states that, “everybody wants their refuse to be taken away nobody wants to take part in disposal and management or showing pro-environmental attitude.” Nest, (1999) adds that people lack the interest in management of waste they generate. He further explains that although waste is generated by people, they show no concern towards its final disposal. From the above argument one can conclude that the reason of indiscriminate disposal of refuse in most communities may be due to the lack of interest, knowledge and environmental awareness they exhibit towards keeping their environment clean that is, most residents are insensitive to their environment. This assertion is collaborated by the views of Adalakum (2003). He asserted that promotion of environmental quality depends on how individuals and community see themselves in relation to their environment. He stated categorically that, “it is the way people perceive their environment that they will treat it” meaning when their environment is resourceful a serious attention could be attached to it due to its usefulness to the benefit of society. Quite apart from this, it is the way the environment is treated that it will in turn support life that is, clean and good maintenance of the environment promotes sanitary conditions and quality resources

that could be harnessed to produce human needs. He also believes that, illiteracy, ignorance, poverty and greediness are some major contributors of environmental pollution because each influences people's attitude and behaviour towards the environment.

A resident who is ignorant of his/her action on his or her environment will likely have wrong perception about the effect of those actions on his health. A community that understands the link between a clean environment and a good health can save time, money and avoid agonies which might be the consequences of poor sanitation (Noibi, 1992). He further argued that, environmental deterioration had risen to a large extent because people are not aware of the implication of their attitudes towards the environment. A person level of ignorance of the environment can be said to be positively related to the degree of his or her attitude towards the environment (Hook, 2008). That is, human ignorance is a function of an attitude that will enable one to display a kind of attitude towards the environment. This implies an individual's uncertainty about the environment and issues regarding the environment will determine his or her attitude towards environmental sanitation.

Management of household waste is tied to the perceptions and socio-cultural practices of the people. Moreover, accumulation of waste in undesignated areas could be reduced through creating environmental awareness among residents on how to manage household refuse and subsequently educating them about the hazard that indiscriminate disposal of waste could cause to the physical environment and themselves (Abrokwah, 1998). Since cultural derivatives, beliefs, perception and attitudes are learned responses set; they can be changed by educating individuals to be conscious of their environment. This means people's negative attitude towards the

environment could be changed for better through environmental education and awareness owing to the fact that people's negative behaviour is regarded as a major barrier to the successful implementation of pro-environmental sanitation (Evison & Read, 2001).

A study conducted in Ghana at Kodiabe which involved direct observations at disposal site from five divisions focused on the way in which refuse materials were disposed. Another study which was also conducted in Nigeria showed that the perception of domestic waste disposal practices indicate people's attitude and perception of sanitation issues (Banjo, Adebambo, Haight, 2009). Similarly a study done in Khulna, Bangladesh found that city residents in some communities think because they pay taxes to the central government it is the duty and responsibility of the city authorities to employ cleaners, conservatory labourers, sweepers to provide them with a clean environment so they litter the environment indiscriminately with the expectation of government employing labourers to tidy the environment.

Babitski (2011) is of the view that the role of human perception is of the most significant item to be considered if we want to find solution to sanitation problems. If we understand how human perceives information on environment applies it, we could make a future forecast and increase efficiency in the learning of environmental issues and management to improve sanitation issue in our societies.

A community may have several refuse receptacles and waste containers in place however, their perceptions or lack of understanding about the dangers of indiscriminate waste disposal may prevent them from using this waste bins. This implies that studying the way people perceived various environmental problems is very important in the formulation of decision about environmental sanitation and

attitude (Babitski, 2011). This seems to suggest that if an effective waste management system is to be put in place, people's perceptions are critical and must be considered in order to modify their attitude by inculcating in them environmental awareness to achieve sanitary environmental condition in a community. Human perception forms an integral part of attitude which can be influenced to enable an individual to behave pro-environmentally. Attitudinal change is also one of the cardinal objectives of environmental education. It is therefore more important to inculcate in the citizenry a sustained culture of environmental ethics and discipline capable of engendering lasting environmental friendliness. It is believed that people's perception and habits, values, beliefs and attitudes must change in order to fit them into a new social order. How can this be done? This can be done through environmental education which can create public awareness on issues concerning the environment and how to sustain it to support life. This can help to change people perceptions and habits, inclination and attitude, thereby reducing their negative attitude on the environment. That is why the crusade for environmental quality should focus more on the human front of changing perception, knowledge, consciousness, values and attitude rather than physical front which normally deals with existing environmental problems and their interim solutions. Thus, "litter clean-up campaigns," seminars and workshops which merely attack the symptom of environmental problems rather than the problems themselves. Such significant interventions may likely create in the individual both young and old a new image of attitudinal change and it is the new image of attitudinal change that may result in environmental knowledge, consciousness, awareness hence bringing about pro-environmental behaviour and attitude among residents in a community.

2.3.0. Environmental Sanitation Behaviour among Residents

The sanitation problem in most communities these days is a social dilemma which is primarily anthropogenic in nature, that is, it is caused by human behaviour and therefore a behavioural change would be a significant contribution in solving it or as it is capable of addressing its root causes (Getner, 2009). If each of us produce little or no garbage or behave reasonably towards the environment by being conscious and handling our refuse well, there will be no waste to manage and hence no waste problems which may pollute the physical environment. Therefore there is an opportunity for every resident to act single handedly in finding a solution to an emerging sanitation problem. Individuals contributions are perceived to be ineffective to address a sanitation problem in a society however if we become environmentally unconcerned and unaware for the environment to be polluted, we will suffer due to our failure to become environmentally conscious and moreover to co-operate to address the environmental issues. From the above reasoning sanitation problems can be viewed as a social dilemma (Getner, 2009). This means that each resident in a community need to be pro-active in solving environmental sanitation problem in a society before it gets out of hand. Otherwise when there is pollution resulting in an outbreak of diseases the whole society will suffer. This is supported by the views of Efrat, et al., (2012) who refer to environmental behaviour as any active responsiveness to current environmental issues believed to be pro-environmental by the person performing the response. Agbola, (1993) aptly put it that, “the root cause of many communities environmental problems can be traced to the way and manner in which the imbibed behavioural patterns and acquired values are superimposed on the environment.” According to Agbola, (1993) imbibed behavioural patterns are cultural in origin. The above view is corroborated by Oregon and Gerro, (2006). They

stated that the cultural and social norms have substantial influence in the shaping of human behaviour. Cultural values can motivate individuals to exhibit environmental responsible behaviour for the sustainability of a hygienic society. The cultural background of residents would tell a lot about their environmental behaviour. This presupposes that in a community with residents from different backgrounds, there is the likelihood that they will all behave differently towards the environment. However, other variables such as age, knowledge, religion, education, gender, among others can correct poor environmental behaviour for the better. Therefore the relationship between human behaviour and environment is thus a function of cultures or socialisation, the level of society's technological development, the perceived magnitude of existing environmental problems and the levels of education. Promotion of environmental quality depends on how individuals and communities see themselves in relation to their environment. It is the way people perceive the environment that they will treat it. The environments will also support life depending on the way it is treated (Adelakun, 2003). This implies when residents pollute the environment there is the tendency for them to experience an outbreak of diseases such as cholera, typhoid, malaria and among others. On the other hand, when residents keep their surroundings clean by becoming environmental conscious and behave pro-environmentally; it will promote good health and productivity. This is in agreement with the assertion of Adejobi and Olorunimbe (2004). They opine that, wherever there are human beings and human activities waste generation is unavoidable. The generation of waste automatically comes with the task of environmental problems and waste collection. Waste generation in itself is not a problem when it is properly handled to promote sanitary environment to support life. However, the problem occurred when waste generated is not properly managed which could result in

environmental pollution that it is capable of destroying human life and other living species in a geographical area and may be felt in another geographical territory (Gore, 1993). This is the essence of world leaders concern for pro-environmental environmental attitude and behaviour among people.

Adelakun (2003) is of the opinion that illiteracy, ignorance, poverty and greediness are some of the major contributors of environmental problems in the society because each influence resident's behaviour towards the environment. A person who is ignorant of his/her behaviour or actions on the physical environment will likely have different perception about the effect of that behaviour on his/her health (Adelakun, 2003). A community that understands the link between a clean environment and good health can save time, money, energy in protecting the environment by behaving pro-environmentally and also lay down systems and structures that can protect future occurrence of poor environmental sanitation (Noibi, 1992). "Disposing of refuse indiscriminately may be an incorrect method of getting rid of waste from our various homes but it has become the norm which is commonly practiced in most communities in Ghana" (Finnie, 1973:123). From the earliest civilization, waste generation and its management has been part of human existence. Cardinali (2001) observes that the older generation had the option of burning their waste or dump them in a hole. These methods were possible due to the fact that human population was by then small and moreover most people were using organic products and wrappers which were biodegradable in most African countries. For example, a lot of people were using leaves, papers as wrappers in Africa and paper bags, boxes, raffia bags made from canes, raffia palm and baskets for shopping and keeping their goods. These items were biodegradable and environmentally friendly. Apart from this, there was the existence of environmental ethics, traditions, customs, taboos, local bye-laws together

with the Sanitary Health Inspectors among a host others who were effectively working and supervised efficiently by their various agencies. With time, due to technological advancement, civilisation, habits, infiltration of western culture, urbanisation, behaviour or lifestyle evolution just to mention but a few, it has become environmentally detrimental to continue to dispose waste using primitive or outdated methods. Beside this, plastic products, packages, cans and metals among others, have replaced the organic wrappers and containers which were previously used hence making it virtually impossible to use the traditional system or practices of disposing refuse and this has resulted in the environmental problems experienced by several communities these days. The current waste disposal practice (littering behaviour) causes accumulation of garbage, illegal dumping sites, environmental degradation and spread of diseases. This implies, the recent upsurges of diseases in most communities are due to the filthy nature of the environment which is due to indiscriminate disposal of refuse by residents.

The findings of environmental sanitation behaviour among residents in Australia by Williams, Curnow and Stiker (1997) show that Australian residents were observed both to dispose refuse indiscriminately and also use bins appropriately. Men and women were equally likely to litter. Children below the age of 15 are less likely to dispose waste indiscriminately and adults above the age dispose waste indiscriminately than this group. Unemployed and uneducated respondents have higher rates of littering than the educated and employed people. Inadequate of refuse receptacles were not major factors causing indiscriminate littering because a lot of littering occurred within few meters of localities where one could find dustbins. One could deduce from this study that, the unemployed might litter due to the frustration of not getting jobs moreover, because they are not gainfully employed they feel life

and society is unfair to them so to register their frustration and anger, they litter indiscriminately to draw the state attention to their plight! The uneducated may also behave negatively towards the environment due to the fact that they lack the knowledge about environmental sanitation and the essence of keeping their surroundings clean in other words, they are unaware of the consequences of their behaviour to the detriment of the environment. With the idea of lack of bins there should have been an alternative method of keeping the refuse in individuals' containers and keeping them at an appropriate place till dustbins are provided or residents should have moved to a locality where one can be found. This behaviour could have improved the sanitation in their locality. From the above study it could be deduced that poor sanitation can be caused by anger and illiteracy among residents in a locality.

According to (Marrias & Wise, 2004: 470) "the waste disposal pattern is a part of a complex phenomenon in waste disposal management." This means that dealing with refuse is a dicey issue since each society has different people and each person has an alternative way of managing garbage. Waste disposal has been considered as a social behavioural problem, the National Litter Education and Prevention Organisation in the United States found that people litter for three reasons: Lack of a sense of ownership that is in an environment or a space belongs to the state; believe that someone else has to pick up their litter and an area is already littered so it does make it a problem when others litter the same environment. By implication, it means that individuals' behaviour towards the environment may depend on the way some residents in the society also behave towards the physical environment, the knowledge, and impression they have about the environment.

Normark (2010) argued that, once individuals regard things as having no economic value, they discard them. This means the discarded item is a useless material in the environment. The reality is that products lose economic life or value but retain some physical form that is eventually discarded as a refuse. According to Perry, Juhlin and Normark 2010, some authors differentiate between passive and active behaviour towards environmental sanitation. The former means that garbage is not deliberately discarded in the environment while the latter means that garbage is placed or left unsorted in the environment. From the above arguments which ever angle one looks at the discarding of the refuse it constitutes a negative behaviour towards the environment which poses a health risk. The ideal situation is that residents must gain environmental knowledge through environmental education which must translate to environmental awareness, consciousness and attitude resulting in pro-environmental behaviour among residents. Respondents to the above study conducted by Perry et al., (2010) had various reasons for indiscriminate disposal of refuse.

Torgler, Garcia-Valians and Macintyre (2008) observe that if people notice others disposing refuse into the environment indiscriminately their tolerance to littering increases to the point where it becomes easily accepted behaviour. Each person has an image of the environment. The preference, evaluation, decision and subsequent behaviour is therefore based on the pictures of the world in his or her head rather than in the world of objective reality (Tuan, 1972). He added that no two individuals or groups behave in the same way towards the environment. This is because individuals acknowledge only what has value for his biological survival and satisfaction. Thus there exist several subjective factors that modify environmental perception and behaviour. This include quality of information available, past experience, culture and

socio-economic characteristics which work together to influence the way people behave towards the environment.

2.3.1. Determinants of Poor Environmental Sanitation at Residents

An essential factor which is responsible for poor environmental sanitation is the fact that some temporarily residents that is people residing in a geographical area within a short while tend to ignore sanitation programs because at any time, they can leave their place of abode a typical example is the slum dwellers in Agbogbloshie around Accra central in Ghana. The place looks filthy with poor drainage system and absence of appropriate toilets and refuse dump. In Uganda, studies have shown that residents who lived in areas temporarily as a result of socio-economic, political, security, health and commercial purposes may not know the time they are to spend in a place so they tend to behave anyhow towards the environment by keeping unsanitary environment (Nakayenga, 2001). In addition, in an attempt to search for better means of living in cities as a result of unreliable rains in the past, loss of soil fertility and increase in cost of living in the rural areas due to population increase, poverty among others, some rural folks migrate to the cities and stay in temporary structures without basic facilities such as toilets, water, incinerator, refuse receptacles etc. Refuse generated by such migrants are disposed in their immediate surroundings turning the community into slums (Mtung, 2006).

In Ghana, Boadi and Kuitunen (2004) pointed out some of the problems affecting environmental sanitation. These include: weak institutional capacity and lack of resources, both human and capital. They also indicated that, home collection of waste is limited to high and, some middle income areas while the poor are left to contend with the problem on their own. This leads to indiscriminate disposal of waste in

surface drains, canals and streams, creating unsanitary and unsightly environments in many parts of the city.

Furthermore, MLGRD, (2004) summarizes the challenges of poor environmental sanitation in Ghana as follows: poor planning for waste management programmes; inadequate equipment and operational funds to support waste management activities; inadequate sites and facilities for waste management operations; inadequate skills and capacity of waste management staff; and negative attitudes of the general public towards the environment in general. It can therefore be said that the main challenges facing environmental sanitation in developing countries and for that matter Ghana include: inadequate funds to support waste management, inadequate equipment to support waste storage, collection and disposal, low collection coverage and irregular collection services, crude open dumping and burning without air and water pollution control and appropriate structures and systems put in place to work efficiently to solve environmental sanitation problems in various communities in Ghana.

The waste disposal situation in cities in most poor countries has also been attributed to the general dearth of qualified personnel in the waste sector (Onibokun, 1999; Ogawa, 2005). According to Onibokun, (1999) most municipal authorities are unable to attract suitably qualified personnel for the various aspects of waste management such as planning, operations and monitoring. Ogawa, (2005) collaborated with this statement when he also stated that developing countries characteristically lack the technical expertise required for waste management planning and operation and this is usually the case at both national and local levels. He emphasised that many personnel in charge of waste management have little or no technical background training in

engineering or management. Without sufficiently trained personnel, however, waste management projects cannot be effective and sustainable.

Ogawa (2005) has noticed that in many cases, 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. Lohse, (2003) has also observed that local governments in developing countries generally lack the required capacity and technical expertise to accomplish effective and sustainable waste management programmes.

Kendie (1999) argues that the recent upsurge in waste disposal problems stems from the fact that , “attitude and perception towards waste and the rating of waste disposal issues in people’s mind and in the scheme of official development plans for some communities have not been adequately considered. Satterthwaite (1998) explained that the environmental sanitation problem emanates from poverty and lack of funding as a result of low level of economic growth in several developing countries. Agbola (1993) traces the root cause of poor environmental sanitation to imbibed behavioural patterns and acquired values which are given expression in the people’s culture. Post and Obiri-Opere (2003) have pointed to non-performance and weakness in the waste management institution as the bane of the waste problems in most residential areas in Ghana. From the various studies mentioned above it could be seen that existing culture of a group of people, lack of funding, non-performance and weak institutions, structures and systems are responsible for poor environmental sanitation among residents.

Lessons were also drawn from the study by Mmerekhi, Li and Locto 2012 in the study entitled “household perceptions on waste management practices in developing

countries”. “The case of Donga area,” the study reveals that lack of waste disposal services had resulted in waste accumulation and unsanitary environmental conditions in Donga. Local authorities were not able to organise adequate collection and safe disposal of the waste generated by the residents in the area. In furtherance, local authorities had difficulties in enforcing standards regulation, bye-laws and penalties on waste disposal to promote positive environmental attitude among citizenry due to poor waste management system in the area.

Similarly, a study done in Khulna, Bangladesh found that city dwellers think because they pay taxes, it is the responsibility of the city authority to provide them with a nuisance-free habitable city (Anim & Hossain, 2005). Local governments are responsible for the collection and disposal of the waste generated within their jurisdiction, as well as for the operation and maintenance of their equipment. However, local government usually lacks the authority and resources to provide satisfactory and economically viable services. Lack of these services promotes indiscriminate littering among residents.

Effective and efficient waste management depends upon an equitable distribution of responsibilities, among all the local governments (Naid, 2009). General waste management in Ghana is perceived to be the responsibility of the Ministry of Local Government and Rural Development, which supervises the decentralised Metropolitan, Municipal, and District Assemblies (MMDAS). However, regulatory authority is vested in the Environmental Protection Agency (EPA) under the auspices of the Ministry of Environment and Science. The (MMDAS) are responsible for the collection of final disposal of waste through their Waste Management Department and their Environmental Health and Sanitation Departments. There is a growing

perception that inadequate education about the importance of proper sanitation by a body such as Health and Sanitation Departments and its allies account for the poor environmental sanitation practices among most residents in Ghana. Other factors which account for this situation is poor attitude and lack of concern about environmental issues, high levels of poverty and misguided waste disposal practices (Oteng-Ababio, 2012).

Improper disposal of refuse is caused by social, economic, behaviour, attitude and political circumstances and expectation. Household's economic status influences their method of disposal of wastes. People with higher incomes are more likely to use improved methods of waste disposal practice. This assertion is not wholly true, since one's attitude towards the environment does not depend only on income but also one's value-orientation by placing much importance on the environment and have an in-depth knowledge that promotes positive environmental sanitation (Stern & Dietz, 1994). Weak enforcement of sanitation laws and pressure on existing sanitation facility can lead to improper disposal of wastes (Sule, 1981). He added that the major factors responsible for poor sanitary conditions in Nigeria cities are improper management of refuse and weak enforcement of laws governing environmental sanitation practices in most residential areas.

The direct charging for use of public waste collection dumps and waste collection centers in urban areas of Ghana was introduced with the emergence of Structured Adjusted Programmes (SAP) in Ghana in the 1980s (Kwasi, 2014). In line with this policy other private registered waste collection companies whose systems of operation is similar to the operations of the recent Zoom Lion Company Ghana Limited and many others also offer waste collection services for individuals in some residential

areas in Ghana for a fee. Per their arrangement, household who could afford to pay for their services are registered and given litter bins and periodically the refuse receptacles are emptied by their workers. Individuals who could not afford these private services resort to the public dump site or use an alternative means of disposing their garbage. According to Kwasi (2014), this has fuelled the improper disposal of refuse into open environments by low-income people who are not able to pay the fees. The improper disposal of wastes has led to choked gutters leading to perennial flooding occurrences during the rainy season in Accra and epidemics such as cholera which are also experienced in most parts of the country. The “twin disaster” which occurred in June 3, 2015 was partly due to blockage of the Odawna drain in Kwame Nkrumah circle by solid wastes which were disposed into the drain by hawkers, pedestrians, market women and habitants who reside around the Odaw river causing flood around circle and its environs. Improper disposal of refuse is a common practice in many African countries. For example, Ayotamuno and Gobo (2004) in their study on sanitation in Nigeria cities pointed out that indiscriminate disposal of refuse had become a common practice in many cities in the country. Most of the garbage was located close to Markets and public places. Uncollected garbage produces foul odour and constitute a source of environmental nuisance (Oformaa & Eze, 2001). Kalland (2002) assert that some religious groups could be linked to poor environmental attitude and go on to suggest that some religions actually encourage environmental pollution through indiscriminate disposal of refuse among its members around their places of worship like the shrines for instance where one can identify dead animals, rotten materials, garbage, filth and bloodstains.

Aside from this, some Christians and Muslims keep their environment unkempt during days of worship and festivities such as weddings, Easter convention, Christmas

and among others. Whereas authors such as Crief (1973) believes that religions, particularly Judeo-Christians, have very little direct influence on human's negative environmental attitude and others including, (Azizan, 1990; Bryer, 1999; Dwevedi, 1990; Fowler; 2003; Letcher 2003; Mawil, 1990; Vesilind & Gunn, 1999; Wiber, 1998; Zaini 1993a, & Ujang 1993b) believe that it is the interpretation of religions that cause environmental attitude to be positive or negative. These authors believe that the sacred texts and teachings of the prophets and founders of those religions are somehow innocent of people's negative attitudes or behaviours towards the environment. Welber (1998) also explains that moral values from religion that are inculcated by families, governments, non-governmental organisations, churches, mosques, schools among others are important in shaping attitude. However, he thinks that the roles played by these institutions are insufficient to improve environmental sanitation attitude among residents (Nasr, 1990). This means the various religious groups find it difficult to use their doctrines to create environmental consciousness and awareness among the people to behave pro-environmentally. Hence, the insanitary environmental condition in most of our communities in Ghana may be due to the inability of the teachings of the various religions to transform individual's attitude to behave pro-environmentally.

Efforts in waste collection are mostly limited to the cities and major towns in the metropolis. The people in the rural areas and slums setting are sometimes left out consequently; inhabitants of these places are compelled to handle their waste issues using their own initiative and the available resources at their disposal. Often, this results in unhealthy and questionable methods of waste disposal. It is important to note that regardless of economic status and affluence, every human being generates waste. There may only be variation in type and volume of waste generated. The

consequences of pollution however do not discriminate; the effect of poor sanitation in a given geographical area may be felt in another area. This is the essence of global concern for sanitary environment among residents of every community in Ghana. That is individuals should exhibit pro-environmental attitude that must promote clean environment which may lead to healthy and quality of life among residents.

2.3.2. Effects of Poor Environmental Sanitation on Residents

Poor sanitation causes economic losses associated with the direct cost of treating sanitation-related illness and loss of income through reduced or lost productivity. In addition, poor sanitation also leads to time and effort losses due to distant or inadequate sanitation facilities, lower product quality resulting from poor water quality, reduced income from tourism (due to high risk of contamination and diseases) and clean up cost (WHO, 2008). Several studies have also been conducted to estimate the economic costs associated with poor sanitation. In Ghana and Pakistan, for example, the indirect effect on child mortality of environmental risk factors mediated by malnutrition has added more than forty percent (40%) to the cost indirectly caused by child mortality. If one takes into consideration the effect of such malnutrition on improved school performance and delayed entry into the labour market, the cost would double to ninety percent (90%) of the Gross Domestic Product (GDP) (WHO, 2008).

Uncontrolled refuse dumps have a negative environmental impact on the lives of people in a community. The United State Environmental Protection Agency (1998) acknowledges that some dumps have grown from small to large unmanageable waste problems over the years. As waste decomposes it produces lachate (a mixture of toxic and non-toxic liquids and rainwater) that could contaminate the drinking water. Also

areas used for illegal dumping are accessible to the general public, especially children and domestic animals, who are vulnerable to the physical and chemical hazard posed by waste (United State Environmental Protection Agency, 1998). Several authors seem to agree that a clean and attractive environment is a pre-requisite for long term economic growth, according to the United State Environmental Protection Agency (1998).

Poor environmental sanitation constitutes a major source of environmental health hazards. Environmental hazards account for an estimated twenty-five percent (25%) of the total burden of diseases worldwide. Nearly thirty-five percent (35%) of ill health problems in Sub-Saharan Africa are caused by environmental hazards (WHO, 2009).

According to Cunningham and Saigo (2003), improper sewage and waste disposal as well as being aesthetic nuisance is also a dangerous contributor to the pervasive nature of some diseases such as typhoid, cholera, dysentery, malaria etc. The health implications of poor environmental sanitation cannot be ignored. There are reports that unsanitary environmental conditions can cause, waste, air and land pollution which can affect human life and other living species (Bartone, 2000; Buckle & Smith, 2000).

Osei and Duker (2008) argue that the burning of domestic waste has been associated with respiratory illness. Households that are serviced inconsistently by waste collection companies sometimes burn their waste. In these households, respiratory diseases are more common in mothers and children. One suspected cause of this association is that these households are prone to burn their waste, and burning is an activity primarily performed by women and children. Women and children may be

exposing themselves to harmful fumes and consequently presenting with a higher incidence of respiratory disease.

Disposal of refuse was not a major problem in the past because human population was relatively small, lands were available in abundance both in the country side and in the cities for absorption of waste, and nearly all waste were biodegradable (Techobanoglous, Theisen & Vigil, 1993). However, in the modern era of rapid urbanisation, solid waste disposal and collection are common problems partly due to the non-degradable nature of many wastes. Uncollected waste produces foul odour and constitute a source of environmental nuisance which has a potential of spreading air borne diseases (Oformata & Eze, 2001). Bryant (1998) observes poor sanitation as having a serious effect on the environment.

He further states that fecal matter do pollute water sources and degrades the surrounding environment. Inadequate sanitation, through its impact on health and environment, has implications for economic development, (UNICEF, 2001). People absent themselves from work due to excreta-related diseases. Poor health keeps families in a cycle of poverty. The national cost of productivity, reduced education potential and curative health care is substantial. One estimate puts the cost of health expenditure at \$3.5- billion per year (RSA, 2000).

The increasing pollution of rivers and shorelines negatively impact on businesses such as tourism and agriculture, which are vital to nations' economic growth. Lack of excreta management also poses a fundamental threat to global water resources. The White Paper on Basic Household Sanitation (RSA, 2001) highlights the benefits of improving sanitation: reduced morbidity and increased life expectancy, savings in health care costs, and saves one from taking sick leave. Inadequate sanitation

facilities, inadequate disposal of waste and poor sanitation practices, result in loss of privacy and dignity, exposure and increased risks to personal safety (RSA, 2001). People are forced to use the bush as their toilet facility. They are exposed to dangerous situations where they can be assaulted or attacked by wild animals.

Songsore and McGranahan, (1996) reported on the lack of substantive toilet infrastructure means that citizens at times resort to defecating outside. Past studies have found more than two-fold increase in childhood diarrhoea prevalence due to neighborhood outdoor defecation. Insufficient communal facilities can lead to open defecation along beaches, drains, and open spaces. In this environment there is a tendency for fecal material to become intermixed with household refuse. Street runoffs also become a potential source for human infection when drains become contaminated with fecal matter. Studies have found endemic fecal pathogens including parasitic worms, protozoan, bacteria, and viruses at concentrations sufficiently enough to create the potential for human infection.

Boadi (2005) wrote that water pollution is another important potential outcome of inappropriately managed refuse. The unregulated leachants from refuse near waterways increase the technical difficulty of providing clean water and subject city residents to urban flooding risk. Urban floods occur when drainage systems and other storm control devices overflow because of waterway blockages. Indiscriminate dumping and refuse overflow can all be sources of drainage blockage. While it is true that seasonal rains can cause flooding in all parts of Accra, the poorer residences with their weaker drainage infrastructure are more likely to experience flood damage.

He further noted that the poorer population of Accra bears a disproportionate amount of the environmental health risk burden. The most vulnerable populations are

sanitation workers and the migrant workers from the North. Migrant workers frequently resort to scavenging to provide income. Scavengers can be seen in broad daylight searching through refuse at open dumps for materials, plastic, slivers and metals that can be sold back to processing factories. These scavengers are exposing themselves to harmful leachants and chemicals without any protection.

Sanitation workers are hired by private companies. However, they receive little or no protective clothing from the waste management companies which employ them. These workers earn low wages and thus are not able to purchase appropriate clothing for their protection. Thus, they experience more exposure, and as a consequence have a higher turnover rate, higher incidences of sick days and work-related accidents and higher mortality than the rest of the city population (Domfeh, 2010).

The significant economic benefits of good environmental sanitation are not well known; the media often emphasis on health benefits, but the time savings and opportunity cost are equally significant issues. Environmental sanitation management ensures that there is prudent allocation of limited resources tailored to the needs of the people to ensure economic sustainability and improvement in the lives of the masses. Quite apart from that, a healthy people produce more and miss fewer days in their production of goods and services. Subsequently, a healthy community is often a more lucrative market for goods, services and investment (WHO, 2009).

Every dollar spent on improving sanitation generates economic benefits (about nine times) that far exceed the required sanitation investments. The cost of inaction is enormous. Achieving the MDG for sanitation would result in \$66 billion gained through time, productivity, averted illness and death. It is estimated that a 10 year increase in average life expectancy at birth translates into a rise of 0.3-0.4 per cent in

economic growth per year (WHO, 2008). Improved environmental sanitation management reduces environmental burdens, increases sustainability of environmental resources and allows for a healthier, more secure future for the population.

On the consequences of improper disposal of refuse (Booth, Martin & Lankester, 2001) reveal that residents who live closer to filthy areas have an increased risk of health related problems. This according to them is especially the case of young children who play in areas where garbage is thrown, and scavengers who earn their living by sorting through rubbish. According to Booth et al., (2001) diseases such as malaria, filariasis, and mosquito-borne diseases are of the effects of poor environmental sanitation in societies. Lucas and Gilles (2003) collaborated with the assertion of Booth et al.,(2001) stated that different types of waste pose different problems but in general, failure to manage and dispose waste properly expose residents to increase risk of infectious diseases.

2.3.5. Summary

This chapter has provided a review of the pertinent issues related to the research problem. It looked at the meanings of the basic concepts: Attitude, environment, sanitation and environmental sanitation. Environmental attitude, behaviour, determinants of environmental attitude and behaviour were also presented. The various works reviewed established that for residents to develop pro-environmental attitude, they need to be sensitised through environmental education to create awareness and concern among residents. The issue of environmental sanitation attitude, behaviour, determinants and effects of poor environmental sanitation among residents were also discussed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The preceding chapter reviewed the related literature on environmental sanitation attitude among residents. The focus of this chapter is to describe the methods and procedures that were used in gathering data for the study. The themes discussed in this chapter include the study area, research design, population, sample population, sampling and sampling techniques and instruments for data collection (questionnaire, field observation and interviews). The data collection procedures, validity, reliability of the instruments and methods of data analysis are also presented in this chapter.

3.1. The Study Area

The study was carried out at Amanfrom. Amanfrom is a suburb of Asamankese in the Eastern Region of Ghana. The study area is a heterogeneous society dominated by the Akyems; there are significant numbers of Ewes, Anums, Gas, and few people from northern region of Ghana, together with foreigners from neighbouring countries around Ghana. The major occupations of the people of Amanfrom are petty trading, farming, carpentry, dress making, and among others. Due to its nearness to the heart of Asamankese which serves as a central business area, Amanfrom has attracted a lot of people who migrated to settle there, thereby increasing the population and the sanitation problems in the area. Amanfrom is not well-planned and this makes it look like a shanty town with water, drainage and sanitation problems. It is as a result of this that the decided wants to investigate the environmental sanitation attitude among the residents and to ascertain the nature of the problem and its effects on the livelihood of the people

3.2. Research Design

Burns and Grove (2003:195) define a research design as “a blueprint for conducting a study with a maximum control over factors that may interfere with the validity of the findings” Parahoo (1997:142) describe a research design as “a plan that describes how, when and where data are to be collected and analysed”. Polit (2001:167) defines a research design as “the researcher’s overall plan or strategy for answering the research question or testing the research hypothesis.

The research design adopted is a case study. Case study is a systematic inquiry into an event or a set of events, which aims to describe and explain the phenomenon of interest. It tends to examine social unit as a whole (Bromey, 1990). The unit may be a person, a family, a social group, a social institution or even a community (Bromey, 1990). Here the researcher intends to study the aspects of “the how and why” of the social unit, which means, he/she not only tries to explain the complex attitudinal pattern of the social unit. The design allowed the researcher to investigate and understand the current environmental sanitation attitude among residents of Amanfrom. This approach was preferred because it provides a systematic way of looking at events, collecting data or gathering indepth information, analysing information, reporting results and drawing a logical conclusion. It is used to narrow down a very broad field of research into one easily researchable topic.

3.2.1 Research method or approach

The research used mixed methods for the study. A mixed method entails the use of both qualitative and quantitative research. Qualitative research approach employs the use of non-numerical data while quantitative research involves the use of numerical data (Bryman, 2012). In order to achieve the objectives of the study, both secondary

and primary data were collected. Secondary data involved the collection of data from existing literatures such as books, journals, articles websites of Ghana and other environmental organisations.

Primary data on the other hand were obtained directly from randomly selected participants. This includes interviews, application of questionnaire and field observation.

The research study employs various methods and strategies to obtain relevant information to provide answers to questions posed and assisted in drawing suitable conclusion after the data had been analysed.

3.3. Research Population

Parahoo (1997:218) defines population as “the total number of units from which data can be collected” such as individuals, artifacts, events or organisation. This means a population comprises all the possible cases (persons, objects, events) that can be selected and used for a study. In research, population refers to the sum total of the phenomena of interest to the researcher. The population for this study consisted of all residents of Amanfrom with the household as the unit of analysis. In the year 2010, the population of Amanfrom was given as 1,200 with a male-female ratio of 510:630 respectively (The West Akim Municipal Assembly Statistical Unit, 2015).

3.4 Sample size

Polit (2001:234) defines a sample as a "proportion of a population". The sample for the study was 140 respondents: One hundred and twenty (120) made up of residents of Amanfrom and 20 respondents drawn from various institutions such as Sanitation and Health Inspectorate Unit and Zoom Lion Company Ghana Limited in Asamankese

Table 3.1. Distribution of Respondents for the Study

Categories of respondents	Number of respondents	Percentages
Residents who are literate	60	42.86
Semi-literate residents and uneducated	68	48.57
Assembly men	1	0.71
Officials and workers from Zoom Lion Company Limited Ghana	6	4.29
Sanitary Health Inspectorate Units	5	3.57
Total	140	100.00

3.5. Sampling Techniques

The specific techniques employed in the study to select respondents include convenience sampling and purposive sampling. Convenience sampling (also known as haphazard sampling or accidental sampling) is a type of non probability or random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity and availability at a given time are included for the purpose of the study (Dornyei, 2007). The convenience sampling was done through the lottery method where some letters of the alphabet were written on pieces of papers (A & B) and were kept in a box. Any resident who I met accidentally in a house or outside their homes who picked the alphabet „A“ was selected for the study. This method however, was applied in areas where residents seem to be many. In localities where the residents are few any resident I met by chance was chosen for the study. This amounted to 120 respondents. Purposive sampling was also used to select respondents from various institutions in the study area. This comprises 20 officials from Sanitary Health Inspectorate Unit and personnel from Zoom Lion Company Ghana Limited who offered useful information by answering questionnaires and also interviewed on issues that described environmental sanitation attitude among residents of Amanfrom. Purposive sampling was used because of the convenience of

location, role played in the community and availability of respondents (it is the officials from Sanitary and Health Inspectorate Unit who are in charge of sanitation and have indepth knowledge about the study). This was done in order to get indepth information on the issue of the research that is, environmental sanitation attitude among residents of Amanfrom. Parahoo (1997:232) describes purposive sampling as a “method of sampling where the researcher deliberately chooses who to include in the study based on their ability to provide necessary data”. The rationale for choosing this approach was due to the fact that the researcher was seeking information from the officials“ on environmental sanitation attitude among residents of Amanfrom, which the participants would provide by virtue of their experience. In this study only the officials who were eligible were purposively chosen to participate in the study. Merriam (1998:61) posits that “purposive sampling is based on the assumption that the investigator wants to discover, understand and gain an insight into phenomenon and therefore must select a sample from which the most information can be learned”.

3.5. Ethical Issues

The research process was guided by the following considerations:

- i. Informed consent was sought from respondents and officials before engaging them in the study.
- ii. Anonymity: the names of respondents for the study were not used to protect the identity of respondents.
- iii. Confidentiality: responses from study subjects were kept in strict confidence and only used for the purpose of the study.

3.6. Instrument for Data Collection

The research instruments used to gather data for this study were a semi-structured interview schedule, questionnaire and observations. The questionnaire which contained a set of 31 items was administered to respondents, in selected household in the Amanfrom community while some respondents drawn from the household and institutions were interviewed on 21 items. The questionnaire and the interview items were focused on the research questionnaire formulated. Field observations were also conducted to collect data using an observational checklist as a guide to observe phenomenon in the study area.

3.7.1 Pilot-test

The questionnaire was pre-tested in a pilot-test carried out at Asamankese-Noyem in the Eastern Region of Ghana. This suburb was selected because it shares similar characteristics such as waste generated from cooking, commercial, industrial and other human related activities are disposed indiscriminately at unauthorised places. Notable among these places are gutters, streets big drains and open places just to mention but a few with the study area in the Region. The pilot study enabled the researcher to restructure the questionnaire to help elicit the right responses.

3.7.2 Questionnaire

Questionnaire was the main instrument used to collect data for the study. According to Bryman (2004), questionnaire is a collection of questions administered to respondents. A questionnaire was designed for the residents of Amanfrom to solicit information that include, environmental sanitation and behaviour, determinants of environmental sanitation and attitude and effects of poor environmental sanitation attitude among residents of Amanfrom.

Both Closed-end and open-ended questions were used to solicit quantitative data. Hundred (100) households were selected. Systematic sampling technique was employed by using a sampling interval of three with every fourth house included in the sampling process. The linear layout of housing units enabled the use of a uniform sampling and this ensured that the sampling interval was drawn from across the whole study area. I chose questionnaire because majority of the respondents were literate. Again the questionnaire was used because of large size of the sample involved in the study.

3.8. Observation

The phenomenon under study environmental sanitation attitude among residents of Amanfrom is one which lends itself to direct field observation. Thus, in addition to questionnaire and interviews, a field observation was also conducted as part of the data collection exercise. This involved structured observations of waste situations and other conditions that affect environmental sanitation which was assessed through a structured observation checklist in terms of attitude, behaviour, determinants of environmental sanitation and effects of poor environmental sanitation among residents of Amanfrom. A camera was used to capture images or scenes appropriate to the study regarding indiscriminate disposal of refuse by residents and collection methods used by Waste Management Companies. A checklist was also used to assess the measures adopted by the community to solve sanitation problems such as embarking on clean-up exercises, placing of receptacle bins at vantage points in the study area and punishing and cautioning those who litter indiscriminately.

3.9 Interview (semi-structured interview schedule).

Interviews were conducted with twenty (20) officials and personnel using an interview guide. The selected persons were the officials from, Zoom Lion Company Ghana Limited and Sanitary and Health Inspectorate Unit. The interviews were tape-recorded because most questions were open-ended. This implies that most questions had follow-up questions and therefore writing responses would be both time consuming and energy sapping. Tape-recording of responses“ make the exercise easier and faster and further allowed me to collect more information from the respondents within a short period of times.

3.1.1. Data Collection Procedure

Formal permission was sought from the Assembly Member of Aman from before the researcher administered the questionnaire to the sampled respondents. Respondents who did not understand some questions were provided some guidance by the researcher during the collection of the data. The researcher personally led a team of assistants to collect the data from the respondents in their various homes within a three week period.

3.1.2. Validity

Validity is the test of whether collected data accurately gauge what is being measured (Babble & Mouton: 2001, Denzin & Lincoln: 2000, 2002; Mills, 2003). A number of measures were taken to achieve validity of the research instruments. The instruments were designed cautiously comparing the questions with the objectives stated for the study. The initial draft was reviewed after which I showed it to my colleagues who were also using questionnaires in their studies to review it. The researcher pre-tested the instruments with colleagues and also showed them to my supervisor. The

researcher modified the content of the instruments to ensure its content and face validity based on the assessment, suggestions of colleagues and the supervisor. There was a pilot interview which ensured a good preparation of the items.

3.1.3. Reliability

A pilot test of the instrument was carried out with fifty (50) in Anum in the Eastern Region of Ghana. These respondents used for the pilot test did not form part of the sample for the study. The reliability of the Amanfrom respondents“ questionnaire was determined using the split half method. Reliability according to Wisker (2008: 322) “relates to how well you have carried out your research. It is considered reliable if another researcher carrying out the same research activity with the same kind of group would be likely to replicate your findings although their findings need not be identical.”

To ensure reliability of the research instruments, I carried out the pilot study. Besides, the questionnaire and the interview schedules were made available to my peers and supervisor for review and comments. Again, to obtain reliability of the study, I administered the questionnaire twice to the same group of respondents and compared the results to find the extent to which the results of the two administrations correlate.

3.1.4. Data Analysis

The data obtained by means of questionnaire were quantitative in nature and were therefore analysed using the Statistical Product and Services Solution (SPSS) Version 23. The data were displayed in tables and pie charts for analysis. The qualitative data from interviews were however subjected to text analysis while some of the observed situations were photographed for qualitative analysis and interpretations.

3.1.5. Summary

This chapter has outlined the methodology employed in conducting the study. Basic concepts such as the study area, the research design employed and sampling procedure were duly presented. The methods that were used to gather the data: questionnaire, interviews and observation were also discussed. In addition, the reliability and validity measures that were taken to authenticate the results of the study were presented. Lastly, the procedure in which the data would be analysed in the subsequent chapter was stated. The next chapter is devoted to the presentation and analysis of the data collected for the study.



CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

The previous chapter described the methods and procedures employed in carrying out the study. The current chapter is devoted to the presentation and the analysis of the data in an attempt to answer the research questions on the topic under study: “A study of environmental sanitation attitude among residents of Amanfrom”. In line with the research objectives, the presentation and the analysis of the data are organised under four themes; environmental sanitation attitude; environmental sanitation behaviour, determinants of poor environmental sanitation and the effects of poor environmental sanitation on residents of Amanfrom.

Table 4.1: Demographic Distribution of Participants

Participants	Gender	Respondent Frequency	Percentage
Literate Residents	Male	20	14.29
	Female	40	28.57
Uneducated and Semi-literate	Male	20	14.28
	Female	48	34.29
Assembly Members	Male	1	0.71
	Female	0	0.00
Workers from Zoom Lion Company Limited Ghana	Male	3	2.14
	Female	3	2.14
Health Sanitary Inspectors	Male	2	1.43
Health Sanitary Inspectors	Female	3	2.14
Total		140	100

Source: Field Data, 2016

4.1. Assessing Environmental Sanitation Attitude among Residents of

Amanfrom.

The first objective of this study was to assess the environmental sanitation attitude among residents of Amanfrom. Following this, the research aimed at assessing residents attitude towards environmental sanitation with the aid of a question posed to

them. The respondents were therefore asked, how they feel when they see their neighbours littering. A summary of the responses are captured in Table 4.2

Table 4.2: Feeling of Residents toward Indiscriminate Disposal of Refuse

Responses	Frequency	Percentage
Very bad	61	61
Bad	30	30
Normal	9	9
Total	100	100

Source: Field Data, 2016

In answering the question, how residents feel when their neighbours dispose refuse indiscriminately, Sixty-one percent (61%) and thirty percent (30%) of the respondents see it as a very bad attitude and bad attitude respectively, nine percent (9%) responded it is a normal practice in the community. It could be seen from the above responses that the majority of the residents see the attitude of their neighbours towards environmental sanitation as a disturbing phenomena. This means majority of residents are aware of the environmental problems that exist in the community which stems from residents poor attitude towards the physical environment. The above assertion is supported by Kelly (1971) who posits that individuals have different opinions to situations as long as environmental problems are concerned. Most residents have negative attitude towards waste disposal. These kinds of persons could be perceived as those who litter the environment without any regard or respect to the environment as depicted by figure 4.1



Figure 4.1: A boy disposing refuse at an unauthorised refuse site created in front of the public toilet facility
Source: Fieldwork, April, 2016

The residents were further asked whether individuals complain about the nature of the sanitation situation of their surroundings.

Table 4.3: Complaints made by Residents in connection with their Environment

Responses	Frequency	Percentage
Indiscriminate discharge of waste	44	44
Defecation at unauthorized places	46	46
Others	10	10
Total	100	100

Source: Field Data, 2016

From Table 4.3 Forty-four percent (44%) of the respondents mentioned indiscriminate discharge of waste materials as a major complaint, while forty-six

percent (46%) mentioned defecation at unauthorised places with ten percent (10%) mentioned other complains. The above responses indicate residents are aware of the factors responsible for the pollution of their environment and their poor attitudes toward the physical environment seem to play a significant role in causing poor environmental sanitation among the residents. The field observation which was done alongside the interviews with some residents and the Assembly Member confirmed during an interview that the attitude of individuals in the community towards environmental sanitation is poor. This is because residents have the habit of littering the environment anyhow and also discharging refuse into drains without knowing the effects of those garbage on their surroundings. Majority of the residents were very worried about the sanitation situation in the study area. The Assembly Member further stated that the toilet facility is not kept clean although residents are charged a fee of twenty pesewas (20p) each time one visits the toilet facility. The stench that emanates from the toilet facility makes individuals including drug addicts defecate at unauthorised places because they cannot cope with the filthy nature and the stench surrounding the toilet facility. This situation is supported by the study of Starhrl (1997), who posits that the main reason for the incessant growth of volumes of waste in most communities is as a result of the ignorance on the part of some residents toward the effect of indiscriminate disposal of waste and the care-free attitude of some residents, who know what should be done but they are reckless about it. He further stated that human attitude that leads to filthy environment is influenced by waste generation, open defecation and improper waste disposal practices. The assertion by Starhrl (1997) is in agreement with the views of Simon (1994) who opines that “every resident wants his or her refuse generated to be taken away but

nobody wants to take part in pro-environmental attitude.”Aside these, residents were asked who had responsibility for the cleaning of their surroundings.

Table 4.4: Opinion on Who are Responsible for the Cleaning of their Surroundings

Responses	Frequency	Percentage
Residents	70	70
Zoom Lion Company Limited Ghana	22	22
Others	8	8
Total	100	100

Source: Field Data, 2016

Table 4.4 shows the summary of residents’ view with a large percentage of seventy (70%) of the respondents indicating residents are responsible for ensuring clean surroundings, it is likely that the minority twenty-two percent (25%) may not support in the cleaning of their environment. This may partly explain why Amanfrom is engulfed in fifth and yet some residents seem unconcerned. This give credence to the findings of Songsore (1992) that with the establishment of the Waste Management Department (WMD) of Metropolitan, Municipal and District Assemblies, the public think the various Assemblies should be mainly responsible for dealing with causes of waste problems and its management in the society. In order to change this mindset, it is suggested that the general public must be educated to see the problem as a shared responsibility of both the individuals in the respective communities and the various Assemblies. In line with this, the residents were asked how they dispose refuse.

Table 4.5: Means of Disposing Refuse by Residents

Responses	Frequency	Percentage
Deposit them in a waste container	20	20
Send them to the incinerator	31	31
Burning	12	21
Deposit them into any open space	27	20
Others	10	10
Total	100	100

Source Field Data, 2016

From Table 4.5 about twenty percent (20%) and thirty-one percent (31%) of the respondents indicated they deposit their waste into waste containers and at the incinerator respectively. Twelve percent (12%) indicated that they burn their refuse in open space but the problem is whether all the refuse are burnt into ashes or not and what happens to the unburned waste is not known. Whether it will be carried by the wind back to the surroundings especially the papers and rubbers among the waste or it will be re-burnt remains uncertain. About twenty-seven percent (27%) claimed they deposit garbage at any available space they find. The other ten percent (10%) were undecided but also had alternative ways of disposing refuse. The critical question is where do those who do not use the waste container neither the incinerator deposit waste when they refuse to use the incinerator or waste containers? This is an indication that residents have alternative means of disposing refuse apart from the using of waste containers and the incinerator which is obviously indiscriminate disposal of garbage. It confirms the information obtained from an Assembly Member who chaired the Sanitation and Health Committee of Amanfrom. He complained that residents create unauthorised refuse sites where and when they want. These areas include disposing waste into depressions, drains, at roadside, bushes and uncompleted buildings. While a few households employ the services of Zoom Lion Company Ghana Limited. The view of the Assembly Member for Amanfrom collaborates with the work of Marrias et al., (2004). According to their study the waste disposal pattern is part of a complex phenomenon in waste disposal management. This literally means dealing with refuse is a dicey issue since, each society has different people with diverse culture, perception, attitude, behaviour and each person has an alternative way of managing his or her garbage. Waste disposal practice has been considered as a social behavioural problem. The National Litter Education and Prevention

Organisation in the United States found that people dispose refuse indiscriminately for three reasons: Lack of a sense of ownership that is, an environment or a space belongs to the state, the belief that someone else has to pick up refuse created by another person and the idea that an area is already littered so it does not make it a problem when others litter the same environment. This was confirmed at Amanfrom by the figure 4.2.



Figure 4.2 Unofficial waste site created behind a mini market in Amanfrom
Source: Fieldwork, April, 2016

From the Table 4.5 it means that individuals' behaviour towards the environment in a society may depend on the way some residents in the society may behave towards the physical environment, the knowledge and impression they have acquired and created about their own surroundings.

In addition to the question in Table 4.5, a follow up question was asked. This was to ascertain whether there were enough waste containers and incinerator in the

community for the disposing of refuse? The results in Table 4.6 show an interesting dimension to the phenomenon.

Table 4.6: Quantities of Waste Containers and Incinerators in the Community for the Disposing of Waste

Are there enough waste containers and incinerator?	Frequency	Percentage
Yes	18	18
No	35	35
Few	42	42
Others	5	5
Total	100	100

Source: Field Data, 2016

From Table 4.6, Eighteen percent (18%) of the respondents think the number of waste containers and incinerators were sufficient. Thirty-five percent (35%) said the incinerators and waste containers were woefully inadequate to serve the waste of the entire Amanfrom population whereas forty-two percent (42%) said the waste containers and incinerators were few. It is a likely situation that the few waste containers available in the study area are responsible for indiscriminate disposal of refuse. This was confirmed by the head of the Zoom Lion Company Ghana Limited designated for Amanfrom during an interview. According to him, the refuse receptacles and the number of incinerators in the community are few. Since the same refuse receptacles are used by residents from other communities outside Amanfrom such as Asamanketewa, Mataheko, and part of Anum, Noyem, and among others. The pressures on these few facilities are very high. Hence, causing other residents who stay far away from the waste containers to use alternative means, which include indiscriminate disposal of refuse into drains, bushes and backyard of houses etc. The respondents were further asked whether the residents use the waste container and the incinerator.

Table 4.7: Residents usage of the Waste Containers and Incinerators

Responses	Frequency	Percentage
Yes	40	40
No	14	14
Sometimes	44	44
Others	2	2
Total	100	100

Source: Field data, 2016

The responses in Table 4.7 show that forty percent (40%) of the respondents indicated that they use waste containers and incinerator whilst forty-four percent (44%) indicated they sometimes use the waste containers and the incinerator. Fourteen percent (14%) of the respondents do use neither the waste containers nor the incinerator. This means that although the numbers of refuse receptacles in the community are few they could be used to manage and minimise negative attitude of the residents towards environmental sanitation situations in Amanfrom. This could be done if a serious attention is taken by residents and state holders of the community to monitor the sanitation problem in the community. The field observation which was done alongside the household interviews and the administrations of questionnaires it was discovered that, some residents deliberately would not use these few refuse receptacles for reasons personally known to these residents. This negative behaviour was confirmed by some households during an interview and they suggested that the culprits should be arrested and sanctioned. These actions exhibited by a section of the residents of Amanfrom is in line with the findings of Finnie (1973) who stated that disposing of refuse indiscriminately may be an incorrect method of getting rid of waste from various home but it has become the norm which is commonly practiced in most communities in Ghana. These conditions needed to be discouraged completely by individuals in the community in order to promote pro-environmental behaviour among residents in a locality. It became essential for the researcher to ascertain how

long it takes residents to dispose refuse in Amanfrom. The residents were therefore asked how long it takes for one to dispose refuse.

Table 4.8: Time Spent to Dispose Refuse at the waste container or the Incinerator

Time spent to dispose refuse	Frequency	Percentage
5 -10 minutes	20	20
11-5 minutes	29	29
16-20 minutes	36	36
21-25 minutes	7	7
More than 25 minutes	8	8
Total	100	1 00

Source: Field Data, 2016

From Table 4.8 above, twenty percent (20%) of the respondents spend 5-10minutes to dispose their waste in the waste container. Twenty-nine percent (29%) responded they spend 11-5 minutes in disposing their refuse. Thirty-six percent (36%) stated it is a big problem to spend such time to dispose off waste in the waste containers since the distance is far away from their residence. This implies that, the time spent to dispose off waste in the waste containers add up to the dumping of garbage at unapproved sites though the behaviours of residents cannot be ruled out outright so long as this problem is concerned that is, the poor culture of handling refuse in Amafrom. The field observation and interview conducted confirmed that there were limited number of waste containers and incinerators available in some selected areas of Amanfrom. This has resulted in littering and heaping of waste at the shoulders of some roads thereby making the environment filthy and the roads temporarily unusable. This further explains the reasons why people resort to burning of refuse, dumping of waste in open spaces, gutters, uncompleted buildings and weedy building plots. Furthermore, there is the likelihood that those who frequently use the waste containers and the incinerator are much closer to them. Those who are at a distance from the waste containers are likely to be in the majority when compared with those who litter

indiscriminately. Aside from this, it became necessary to know the actions or behaviours of residents that make their surroundings unclean.

Table 4.9: Behaviours or Action of Residents that make the Surroundings Unclean

Responses	Frequency	Percentage
Defecating at undesignated places	17	17
Dumping of refuse in choked gutters	30	30
Indiscriminate littering	30	30
Dumping of human waste into gutters and the streams	20	20
Others	3	3
Total	100	100

Source: Field Data, 2016

From Table 4.9, out of the 100 respondents, seventeen percent (17%) said defecating at undesignated places, thirty percent (30%) also attributed it to dumping of refuse into choked gutters whereas another thirty percent (30%) linked it to indiscriminate littering with twenty percent (20%) of the respondents maintaining that it is the dumping off human waste into gutters and streams. This shows that the residents have extensive knowledge on the behaviours that make their environment filthy but could not help bring sanity into the community by sensitising residents to behave pro-environmentally. In furtherance, it indicates that making the environment unclean is principally the result of human behaviour and attitude as mentioned by Salifu (2006), that the basic problem underlying the challenges of sanitation in Ghana is behaviour and attitude exhibited by individuals in the society. He further emphasised that indiscriminate littering, defecating at unauthorised places, dumping of refuses into gutters, spitting, urinating and ejection of phlegms indiscriminately have all added to the environmental sanitation problems in most communities in Ghana including institutions of learning; right down from the basic schools to the universities.



Figure 4.3 Unofficial waste dumping at the roadside near a Central Market in Amanfrom

Source: Fieldwork, April, 2016

The residents were further asked whether they pay fees for disposing of refuse.

Table 4.10: Residence Opinion on Payment of Fees before Disposing of Refuse

Do you pay for disposing of refuse?	Frequency	Percentage
Yes	19	19
No	81	81
Total	100	100

Source: Field Data, 2016

From Table 4.10 Nineteen percent (19%) responded they do pay for the services of refuse collection which is carried out by Zoom Lion Company Limited Ghana. Eighty-one percent (81%) of the residents claimed they do not pay for disposing of their waste. Through field observation in some localities it was discovered that some residents engage the services of the Zoom Lion Company Limited Ghana. This is done through the door to door waste collection service where individuals are given wheel-dustbins and the bins are emptied periodically and the users pay a monthly fee.

It was also note worthy to find out why some residents defecate at unauthorised places.

Table 4.11: Respondents View on Why Some Residents Defecate at Unauthorised places

Why some residents defecate at un authorised places	Frequency	Percentage
Inadequate public toilet facilities	34	34
Absence of toilet in some homes	25	25
Payments of fees before using toilet facilities	39	39
Others	2	2
Total	100	100

Source: Field Data, 2016

From Table 4.11 Thirty-four percent (34%) of the respondents attributed it to indiscriminate defecation at unauthorised places to insufficient toilet facilities in the community. Twenty-five percent (25%) responded that it was due to residents not having toilet facilities in their various homes. The majority of the respondents constituting thirty-nine percent (39%) answered it was a result of the payment made before a resident use the toilet facility. The analysis from Table 4.11 shows that there is generally a big problem so long as the usages of toilet facilities are concerned in Amanfrom for which immediate and serious attention must be paid to address such phenomena. Otherwise, this problem will continue to escalate day in and day out as the absence of toilet facilities in some homes and the payment of a user fee of twenty pesewas (20p) before an individual could use a toilet facility is a recipe to promote several residents to defecate around. Many residents cannot afford the toilet user fee of twenty pesewas (20p) per a visit to the toilet facility especially children, the aged, pensioners and the unemployed. During the observation it was discovered that some residents ease themselves into dark polethene bags and deposite them in the neighbourhood which is popularly called “flying parcel”. The opened defecting and littering in Amanfrom is shown by the figure 4.3



Figure 4.3 Indiscriminate defecation and littering around the public toilet facility

Source: Fieldwork, June, 2016.

4.2 Determinants of Environmental Sanitation Attitude among Residents of Amanfrom

The third objective of the study was to identify the determinants of the environmental sanitation attitude among residents of Amanfrom. The data gathered with the various tools indicated that residents' attitude has an important influence on determining the environmental sanitation in Amanfrom. Environmental attitude means a kind of "mind set" representing a predisposition for a certain opinion (Kelly, 1971). This definition signifies that individuals have different opinion to situations so long as environmental problems are concerned. Majority of people have negative attitude towards waste disposal. This kind of persons could be perceived as those who litter the environment with no regard or respect to the sanity of the physical phenvironment. They do not consider the need to appraise or talk to people and neighbours about

environmental sanitation. For example, if an individual is littering the environment with any form of garbage anywhere, they do not seem to exhibit annoyance or correction; such persons contribute to environmental pollution that happens within their surroundings. In line with this, the study aimed at ascertaining essential factors which are responsible for poor environmental sanitation among residents of Amanfrom.

The first mind boggling issue was the indiscriminate disposal of refuse as residents could have used the limited waste containers and incinerators available to manage the sanitation problems in the community and later on appealing to the Zoom Lion Company Limited Ghana through the Lower West Akim Municipal Assembly for more dustbins, waste containers and other refuse receptacles to be provided to the community in dealing with the sanitation problems.

As discussed in Table 4.7, the insufficient refuse receptacles are clear reasons why residents use unapproved places to dispose refuse. In this situation, residents use the quick means of littering so far as they are not caught and punished. This shows that the absence of enough refuse receptacles is a major determinant of the poor environmental attitude among the residents of Amanfrom. This however, cannot be said to be the only factor that causes poor environmental attitude among residents of Amanfrom. It was also significant to find out the patronage level of the few refuse receptacles that are available in the community. As discussed in Table 4.7 only forty percent (40%) of the respondents indicated they use the refuse receptacles and forty-four percent (44%) of the respondents sometimes use the refuse receptacles. The researcher therefore asked residents factors that are responsible for making their surroundings filthy.

Table 4.12 Factors Responsible for Poor Environmental Sanitation

Determinants of poor environmental sanitation	Frequency	Percentage
Open defecation	20	20
A negative growing culture of creating refuse dump in open space	63	63
Out of sheer laziness	11	11
Others	6	6
Total	100	100

Source: Field Data 2016

From Table 4.12, ten percent (10%) of the respondents recounted open defecation. Sixty-three percent (63%) of the respondents mentioned it is due to a negative growing culture of creating refuse dump in any open space, twenty percent (20%) of the respondents also mentioned open defecation among the residents whereas eleven (11) attributed it to a sheer laziness on the part on the residents. The laziness on the part of the residents and negative growing culture of creating refuse in any available space may best explain the indiscriminate waste disposal attitude among the residents since most of them will not have to break their neck just to dispose waste appropriately. This situation is strongly supported by the field observation made as it was identified that residents deliberately deposit refuse beside the waste containers, behind the public toilet and backyard of houses among others instead of the refuse receptacles available in the community. Moreover, other residents defecate at unauthorised places which worsen the sanitation situation at Amanfrom.

This phenomena also collaborates with the views of Starhl (1992) who argues that the main reasons for the incessant growth of volumes of waste in most communities are as a result of ignorance of some residents on the effects of indiscriminate dumping of waste, care free attitude and negative culture of creating filth at any place they deem fit to be used as a waste dump. According to him, these residents know what should be done to keep the environment clean but they deliberately exhibit negative attitude

towards the environment. The above assertion of Starhl, (1992) is in line with the view of Nest (1999) who stated that, people lack interest towards the management of the waste they generate. According to him, although waste is created by people, they show no concern towards its final disposal which normally results in poor environmental sanitation problems among the populace in a locality. From the above arguments, one could deduce that the main causes of poor environmental sanitation in Amanfrom are due to wrongful perceptions, a negative growing culture of creating filth and a deliberate attempt not to adhere to norms that may promote pro-environmental attitude and behaviour among residents in a particular geographical territory. In an interview with the sanitary inspector designated for the study area, he said, there is a yearly outbreak of cholera and other diseases. To actually understand the above issue in connection with the outbreak of diseases the researcher asked the respondents which of the following diseases are prevalent in the community?

Table 4.13: The Most Prevalent Disease in the Community

Which of the following diseases are most prevalent in the community?	Frequency	Percentage
Cholera	29	29
Malaria	34	34
Typhoid	27	27
Rushes	5	5
Others	5	5
Total	100	100

Source: Field Data, 2016

From this analysis that is Table 4.13, the prevalent disease in the community is malaria according to thirty-four percent (34%) of the respondents. The study further shows that about twenty-nine percent (29%) of the respondents stated cholera while twenty-seven percent (27%) stated typhoid as the next frequent occurring diseases. The situation as presented in Table 4.14 partly explains the people's negative attitude towards the environment and its impact on the health of residents in Amanfrom.

According to WHO (2009), poor environmental sanitation constitutes a major source of environmental health hazards. Environmental health hazards account for an estimated twenty-five percent (25%) of the total burden of diseases worldwide. Nearly thirty-five percent (35%) of ill health problems in Sub-Saharan African are caused by poor environmental sanitation. According to Cunningham and Saigon (2007), improper sewage and waste disposal as well as being aesthetic nuisance is also a dangerous contributor to the pervasive nature of some diseases such as typhoid, cholera, dysentery, malaria among others which are common phenomena in the study area. Poor environmental sanitation can cause, air and land pollution which affect human life and other living species (Bartone, 2000, Buckle & smith, 2010). Subsequently, it was also significant to determine whether the residents were aware that poor environmental sanitation affects the livelihood of the residents.

Table 4.14: Opinions on Effects of Poor Environmental Sanitation

Would you agree that poor environmental sanitation affect the livelihood of the residents of Amanfrom?	Frequency	Percentage
Strongly Agree	30	30
Agree	42	42
Disagree	18	18
Strongly disagree	10	10
Total	100	100

Source: Field Data, 2016

As part of the attempt to find out from residents whether environmental sanitation affects the livelihood of the residents of Amanfrom, respondents were asked to indicate their opinion on the question on Table 4.14. In this regard, the data gathered showed that thirty percent (30%) of the respondents strongly agree to the issue whilst forty-two percent (42%) agree. Eighteen percent (18%) and ten percent (10%) disagree and strongly disagree respectively. There is the likelihood that those in the

minority forms part of those who are not aware of the effects of poor environmental sanitation on their livelihood and therefore have the habit of creating filth in their environment. These groups of residents and others in the community need to be educated on the importance of environmental education to create positive environmental consciousness and awareness in them which may translate into pro-environmental attitude and behaviour among the populace. According to Adams (2014), environmental awareness means the creation of general consciousness of environmental issues in the people and also by helping to bring about changes in people's perception, attitude, behaviour, knowledge, values and other necessary skills needed to solve environmental related problems. The lack of environmental awareness among the residents can be attributed to the opinion leaders' low commitment to environmental issues and waste management problems in particular which makes it impossible to sensitise the residents on environmental sanitation and the need to behave pro-environmentally. In an interview and observation in the study area, it was discovered that several of the residents have a very poor attitude towards environmental sanitation in general and waste disposal in particular. This is shown in the indiscriminate disposal of refuse and the "flying polythene bag parcel" a situation where people defecate into black polythene bags and deposit them at the backyard of their neighbours or throw them into gutters and undeveloped building plots even in broad day light; a phenomenon which greatly contributes to filth in the community. Basically on this, the researcher inquired whether there has been any attempt by opinion leaders or the Municipal Assembly in conjunction with the Sanitary Inspectorate Unit to educate the residents on how to keep their environment clean.

Table 4.15: Responses of Residents on Environmental Education

Has there been any attempt by the opinion leaders or by the Municipal Assembly to educate the residents on how to keep their environment clean?	Frequency	Percentage
Yes	28	28
No	72	72
Total	100	100

Source: Field data, 2016

From Table 4.15 twenty-eight percent (28%) of the respondents answered in the affirmative while seventy-two percent (72%) responded in the negative. This shows that little education has been given to the residents on how to keep their environment clean.

4.3 Conclusion

This chapter presented and analysed the data gathered for the study. This was done in relation to the research questions that guided the study and the perceptions of the participants about a study of environmental sanitation and attitude among the residents of Amanfrom. From the analysis of the various responses it was evident that inadequate waste containers, and incinerators, limited number of toilet facilities, defecating at unauthorised places, indiscriminate disposal of waste, lack of environmental awareness and consciousness among residents and a negative growing culture of creating waste dumps at any available space among others contribute to the poor environmental sanitation and attitude among the residents of Amanfrom. The next chapter presents a summary of findings, recommendations and conclusions made on the study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

Following from chapter four which presented and analysed the data, this final chapter is devoted to concluding the study by summarising and discussing the key findings and making recommendations for addressing the study of environmental sanitation and the attitude of residents of Amanfrom. This chapter also reflects over the entire research process, pointing out its strengths and limitations. Finally, a number of areas related to the topic under study that requires further research are identified.

5.1 Summary of the Research Findings

The study sought to examine environmental sanitation attitude among residents of Amanfrom and was guided by four objectives which were:

1. To assess environmental sanitation attitude among residents of Amanfrom.
2. To ascertain environmental sanitation behaviour among residents of Amanfrom.
3. To identify the determinants of poor environmental sanitation at Amanfrom
4. To examine the effects of poor environmental sanitation on the residents of Amanfrom.

The study identified that majority of the residents in one way or the other have a negative attitude towards the environment, yet at least sixty-one percent (61%) said they feel very bad when they see their neighbours littering while thirty percent (30%) see it as a bad attitude. It could be seen from Table 4.2 page (89); that the majority of the respondents have a negative attitude towards the environment.

The study also found out that the general environmental sanitation attitude among the residents of Amanfrom is very poor. This is manifested in the indiscriminate discharge of waste materials into gutters, drains, unauthorised places and waste clogged drains and among others. The most surprising aspect of the phenomena is that most residents interviewed confirmed this as discussed under Table 4.3 (page 90); in the previous chapter. All the respondents sampled complained that the sanitation situation in the study area was relatively poor. The researcher found out that environmental sanitation problem in Amanfrom is basically due to indiscriminate disposal of waste in the community that is, households and businesses were illegally dumping waste everywhere they could. This has resulted in the creation of illegal dumpsites due to inadequate waste containers, incinerators, dustbins and non-usage of the limited refuse receptacles. Also, laziness on the part of households as well as negative growing culture among the residents was identified as some residents create refuse dumps at any place so long as it is convenient to them.

From Table 4.6 (page 95); eighteen percent (18%) of the respondents think the number of waste containers and incinerators in the area are insufficient and thirty-five percent (35%) and forty-two percent (42%) indicated that they were woefully inadequate and very few respectively. They are considered the major factors that contribute to indiscriminate disposal of waste in the study area. During the field observation it was noticed that the number of refuse receptacles were inadequate to serve the community and the adjoining communities which share the same facilities with Amanfrom. It was also discovered from the study that the distance or time spent to dispose refuse from various homes contribute to indiscriminate disposal of refuse Table 4.8 (page 97); explains the situation.

Twenty-nine percent (29%) of the respondents take 11-15 minutes to dispose refuse while thirty-six percent (36%) complained it takes them 16-20 minutes to that and this is not convenient to many of the inhabitants. During the field observation it was discovered that because of the limited nature of the refuse receptacles and toilet facilities and the fact that these facilities are all placed at the central part of the community it makes it difficult for the majority of the residents to use these facilities and these issues also contribute to the poor environmental sanitation situations in Amanfrom. Often this results in unhealthy and questionable methods of waste disposal practice among the residents. This is supported in the work of Edmison (1981) in his study on waste management in Kumasi, where he pointed out that most sites used for refuse dumps are chosen without taking into consideration the distance to be covered by residents. Therefore in matters like this, he recommended that disposal sites should be sited close to waste generators. Adelaide (1995) also observed that disposal sites in several communities are sited quite a distance away from inhabitants or traders. This phenomenon gives credence to the fact that long distance sanitary sites discourage inhabitants and sellers from making use of them. This enables individuals to create their own refuse dump at any site convenient to them. This poor culture of handling of refuse is seen among the residents of Amanfrom.

Furthermore, it was realised that payment of a fee of twenty pesewas (20p) for the usage of the toilet facility which is absent in several homes is a major cause of sanitation problems in Amanfrom. It implies that those who cannot pay must visit that of their neighbours or use any means appropriate to them. This problem is in line with the assertion of Cotton and Ali (1993) that the major problems of not providing enough public toilet facilities in some communities and the unaffordability of individuals to put up toilet facilities are the main causes of poor sanitation problems in

several communities in Ghana. The study of Asamoah (1998) reveals that inadequate sanitary facilities results in indiscriminate dumping of refuse and defecation at places not designated for such purposes. He suggested that enough toilet facilities (KVIP) and waste containers should be provided in various communities to reduce sanitation problems. This study has revealed that some determinants of poor environmental sanitation within Amanfrom was indiscriminate disposal of refuse as it was confirmed by the Assembly Member for the Amanfrom Electoral Area and the sanitary officer designated for the community during an interviews (see Table 4.12 on page 103). Out of the hundred (100) respondents, twenty percent (20%) mentioned open defecation as one of the factors responsible for poor environmental sanitation and sixty-three percent (63%) indicated it was due to a negative growing culture of creating refuse dump at any open space seventeen percent (17%) of the respondents attributed it to out of sheer laziness on the part of the residents. These actually show that residents have knowledge about attitudes that make their surroundings unclean but cannot translate that knowledge to pro-environmental attitude and behaviour. The knowledge exhibited by the respondents regarding causes of poor environmental sanitation among residents of the study area seems to be in variance with the work of Kollmus & Agyemang (2002). They stated that the deeper the knowledge about environmental problems and the way to solve them, the higher is the probability that individual is involved in action to protect the environment. Additionally, well-informed citizens who know about environmental problems might have stronger positive environmental attitude and behaviours (Kollmus & Agyemang 2002).

In summary, it was discovered in the study that environmental sanitation attitude among residents of Amanfrom is very poor. If the situation is not seriously addressed, their livelihood, health and personal hygiene will deteriorate further which will go a

long way to affect the image of the community and the country at large. On the basis of these findings, the study proceeds to make some recommendation for policy action and further studies.

5.2 Discussion of Findings

The current study has shown that the issue of environmental sanitation has become a problem to Amanfrom starting at the face of the residents while they look on helplessly. As noted earlier, the problem largely results from a negative growing culture of indiscriminate disposal of waste, inadequate refuse receptacles and public toilet facilities among others. Apart from this, there is lack of bye-laws on waste disposals and how to check the rather poor waste-handling attitude of the residents. Also, providing enough public toilet facilities and encouraging individual house hold to own toilet facilities are lacking. The poor sanitation usually results in the outbreak of diseases such as malaria, typhoid, cholera, rashes among others. In view of the above, the solution to the sanitation problem in Amanfrom resides in both the residents in particular and all stakeholders in general.

5.3.1 Recommendations

The study makes some recommendations aimed at improving the environmental sanitation attitude among residents in the studied area in order to ensure a healthy and clean environmental sanitation among the residents.

5.3.2 Provision of Enough Waste Containers and Other Forms of Refuse

Receptacles.

Adequate waste containers and refuse receptacles should be provided and placed at all vantage points in the community. Also litterbins should be placed around areas where commercial activities like hawking and selling takes place to minimise the dropping

of litter indiscriminately. In addition to this, residents should be educated on how to use the refuse receptacles. There should be cautioned not to drop litter on the lids of dustbins. Also, the Zoomlion Company Ghana Limited should ensure regular emptying of the refuse receptacles to avoid the refuse spilling over and scattering around by stray animals, birds, scavengers and the wind.

5.3.3 Strict Enforcement of Regulation on Waste Disposal.

The study has shown that the residents had a very poor attitude of waste handling which complicate the refuse disposal problems in the community. To prevent this negative attitude from worsening, the Assembly Member and the Unit Committee Members must strictly enforced rules and bye-laws on refuse disposal including littering and fly-tipping. Once environmental education has been carried out and enough refuse receptacles are placed at all vantage point within the community, there will be no excuse for residents who litter the environment and such residents should be punished severely.

5.3.4 There Should be Regularity of Waste Collection by Zoomlion Company Limited of Ghana.

Particularly in highly populated areas around the central business area, the Zoomlion Company should intensify their activities on waste collection to avoid heaping of waste at the shoulders of the street, over flowing. At least, waste should be collected four times in a week in these areas. There should be regular monitoring of waste collection by the Lower West Akim Municipal Assembly (LWAMA). This will keep the place constantly clean and prevent any possible outbreak of communicable diseases such as cholera and typhoid.

5.3.5 Provision of Permanent Land Space for Waste Disposal

The Lower West Akim Municipal Assembly (LWAMA) in conjunction with the opinion leaders in Amanfrom should consider it necessary to provide a permanent dumpsite for waste disposal. There is also the need to provide adequate land space for the final disposal of waste collected from the community. In this regard, the Assembly Member must play leading roles by citing an appropriate place for the purpose of refuse disposal.

5.3.6 Periodic Clean-up Exercises

There should be periodic clean-up exercise in the entire community and this should be followed up with education on environmental sanitation to address the growing negative culture of disposing refuse among the populace. Besides, church services, mosque services together with other social gathering should be used to raise environmental awareness among the residents of Amanfrom.

5.3.7 Enough Toilet Facilities should be Built

There should be a bye-law from the Lower West Akim Municipal Assembly and the Sanitation and Health Inspectorate Unit to make it mandatory for each household to have a toilet facility. Land lords who fail to comply with these directives should be sanctioned or prosecuted at the law court. Moreover, the Municipal Assembly should provide enough toilet facilities to match up with growing population in the study area. Similarly, adequate lighting system should be provided to make the toilet facility accessible in the night. The administration of the public toilet facility should be entrusted to the Assembly Member and the Unit Committee Members to handle instead of giving it to an individual to handle in the name of partisan politics. Minors,

the aged, pensioners and the unemployed should be allowed to use the toilet facility free of charge.

It is hoped that these recommendations, when considered for action by the opinion leaders in Amanfrom, residents and the Lower West Akim Municipal Assembly would help address the environmental sanitation problems and its related issues in Amanfrom.

5.5 Reflection on the Research process

Having completed the study, there is the need to reflect on the research process and to point out the strengths and limitations of the entire research. This will be done by discussing the strengths and limitations of the approach that have been used to carry out this study as well as outlining a number of areas where further research is commended to complement the current study.

5.6 Strengths and limitation of the study

The strength of this study depended on the adoption of mixed methodology, that is, the use of quantitative and qualitative approaches (questionnaires, interview coupled with field observation). I gained firsthand information on the environmental sanitation attitude among residents through direct field observation which enables one to observe and make note on a situation in a study area. Also the interview helped in meeting key informants face to face using records and note books for recording responses from the respondent.

Quite apart from this, the use of the questionnaire helped to reach out to the sampled hundred (100) residents within manageable time frame, finally, familiarity with the study area helped in adjusting to some situations which have made it possible for data collection.

While the study has been successful in collecting and analysing data to address the research objectives, it is still limited in a number of ways. This include the unwillingness of some stakeholders in the community to be interviewed, some sampled groups lacking the courage to speak to the issue for fear of the researcher leaking the given information to the press which will harm the reputation of the community; that is divulging poor sanitation information in the study area to the general public.

Again, the interview was limited to forty (40) selected group of people for the study which the researcher thinks should have been more, considering the total number of residents in the community. A wider involvement of residents would, have given the researcher a large audience for the field work which might have yielded richer and more elaborate data for the research. Additionally, the time frame within which the study was conducted was limited, especially for the collection of data. The researcher however, ensured that these petty challenges did not affect the quality of the work done.

5.7 Conclusion

The study set out to investigate environmental sanitation attitude among residents of Amanfrom. The study adopted mixed methodology using a combination of interviews, questionnaires and field observations in the data gathering process. The key findings of the study include the following: A negative growing culture of creating refuse dump at any available space deemed fit by the residents; adequate waste containers and permanent place of disposing off refuse in Amanfrom, an attitude of hiding collected refuse and gathered refuse under hedges and limited number of public toilet facilities which encourage the inhabitants to defecate in

unauthorised places; most households not having private toilet facilities in their homes and the inability of opinion leaders to create environmental awareness among the residents. The solution to the environmental sanitation problem lies in creating environmental awareness or consciousness among the residents through environmental education and providing the necessary logistics that will assist and prevent the residents from polluting the environment which will possibly lead to preservation of the environment. The study recommends that efforts should be made by all stakeholders including the Assembly Member, Unit Committee Members and the Lower West Akim Municipal Assembly (LWAMA) to assist and improve environmental sanitation in Amanfrom.

5.8 Suggestions for Further Study

The present study examined on the environmental sanitation attitude among residents of Amanfrom. In the course of the study, however, a number of issues have been identified that critically affect the study of environmental sanitation among residents but which remain under researched. The areas include problems of solid waste management, environmental awareness among residents, refuse disposal behaviour among residents and impact of environmental education on sanitation practices. It is therefore suggested that these areas should be critically examined in future research works so as to create better understanding of environmental sanitation attitude and related issues which will positively contribute to an improve and sustainable livelihood in several communities in Ghana.

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APPENDICES

APPENDIX 1

UNIVERSITY OF EDUCATION, WINNEBA

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF SOCIAL STUDIES EDUCATION

Questionnaire for a study on environmental sanitation and attitude among residents of Amanfrom

Questionnaire for household

Dear resident,

I am carrying out a study on environmental sanitation and attitude among residents of Amanfrom. The purpose of this questionnaire is to investigate your attitude, behaviour towards environmental sanitation and the determinants and effects of environmental sanitation among residents of Amanfrom. The ultimate aim of this study is to find possible means of improving environmental sanitation among residents of this community.

As a resident of this community your views and ideas are considered very important for the success of this study and it would be very much appreciated if you could spend a little time to answer this questionnaire

Thank you for your assistance.

1. How long have you lived in this community?
 - a. Years..... b. Months..... c. Weeks.....
2. How many people live in your house?
3. How do you feel when you see residents littering the environment?
 - a. Very bad [] b. bad [] c. normal [] d. others []

specify

4. Are the residents in this community actually disturbed by the nature of their surroundings?
- A. Yes [] B. no [] C. somehow []
- D. others [] specify
5. Have they ever complained about the filthy nature of their surroundings?
- A. Yes [] B. No [] C. Always [] .D Sometimes []
6. If yes what actually do they complain about?
- A. Indiscriminate littering [] B. defecation at an authorized places []
- C. Others [] specify
7. Who is responsible for the cleaning of your surroundings?
- A. Residents [] B. Zoom Lion Company Limited [] C. others []
- Specify
8. How do you dispose refuse?
- A. Deposit them in a waste container [] B. send them to the incinerator [] C. burning [] D. deposit them into any open space. [] F. others []
- specify.....
9. Are there enough waste containers and incinerators in the community for disposing refuse?
- A. Yes [] B. no [] C. few [] E. others [] specify.....
10. Do the residents use them?
- A. Yes [] B. no [] C. sometimes [] D. others []
11. How long does it take one to dispose refuse?
- A. 5mins [] B. 10mins [] C. 15mins [] D. 20 mins []
12. Do you pay for disposing refuse?
- A. Yes [] B. no []

- If yes how much does it cost you?.....
13. How often do you pay?
- A. Daily B. weekly C. monthly.
14. Why do some residents defecate at unauthorised places?
- A. Inadequate public toilet facilities [] B. absence of toilets in some homes []
- C. payment of a fee before using the place of convenience []
15. Do you have toilet facility in your house?
- A. Yes [] B. no [] C. others [] specify.....
16. If no what toilet facility do you use?
- A. The public toilet facility [] B. nearby bush [] C. others []
- specify
- D. that of neighbours []
17. If you use the public toilet facility do you pay when you use the facility?
- A. Yes [] B. no []
- If yes how much do you pay?.....
18. Can residents' behaviour influence or affect their surrounding positively?
- A. Yes [] B. No [] C. others [] specify.....
- If yes how can it affect the environment?.....
19. Can residents' behaviour also affect their surrounding negatively?
- A. Yes [] B. No [] C. Others [] specify.....
- If yes can you please explain?
20. Do residents often use the waste containers and incinerators?
- A. Yes [] B. No [] C. Sometimes [] E. others []
- Specify.....

21. In your view why do residents litter the environment indiscriminately?
- A. Out of ignorance [] B. insufficient dustbins/incinerator []
 - B. C. sheer laziness []
 - D. negative culture of creating refuse dump in the community []
22. Apart from the above can you suggest other reasons why residents litter the environment.....
23. In which part of the community do we have serious littering?.....
24. What are the possible causes.....
25. Which of the following diseases are prevalent in the community?
- A. Cholera[] B. malaria [] C. typhoid [] D. rushes [] E. others []
- Specify
27. What are responsible for such diseases?.....
28. Would you agree that poor environmental sanitation affects the livelihood of the people?
- A. Strongly agree [] B. agree [] C. disagree [] D. strongly disagree []
29. Has there been any attempt by the opinion leaders or the Municipal Assembly to educate the residents on how to keep your environment clean?
- A. Yes [] B. no []
30. If yes mention some other things you were advised not to do.
.....
.....
31. Suggest some appropriate measures that can be implemented to keep your environment clean.

Thank you for your assistance.

APPENDIX 2

LETTER OF INTRODUCTION INTERVIEW WITH RESIDENTS

Dear Sir,

REQUEST FOR AN INTERVIEW

I am an MPhil student of the University of Education, Winneba carrying out a study on environmental sanitation and attitude among residents of Amanfrom as part of my research project. As a stakeholder in this community your views are important in this study and I would be grateful if you could grant me an interview on this important topic.

I would like to assure you that the information you provide in the interview will be treated confidential and anonymous and will be used solely for the purpose of this research.

Thank you for your assistance.

Position:

Venue:

Date:

1. How would you describe the sanitation condition in Amanfrom?
2. Is improper or indiscriminate disposal of garbage a major problem in this community?
3. What do you consider to be the major causes of littering in the community?
4. Do you have any permanent place of disposing refuse?
5. Do the residents actually use them?
6. Do you have enough waste containers or incinerators?
7. Why do people defecate at unauthorised places?

8. Do you have enough public toilet facilities in the community?
9. Do individuals have toilets in their houses?
10. Do residents pay for using the place of convenience?
11. If yes how much do they pay?
12. Would you attribute the using of unauthorized places as places of convenience to the fees being charged for using the toilet facilities?
13. What about those who can't pay for the fees charged for using the place of convenience?
14. What do you consider to be the causes of indiscriminate refuse disposed in the community?
15. Does the environment situation cause diseases in the community?
16. Which diseases are common in the community?
17. Have you had any opportunity of educating the residents on how to keep their environment clean?
18. Do you have any difficulty in solving environmental sanitation problems in the community?
19. Suggest some possible measures that can be adopted to provide clean environments in Amanfrom
20. Do you have any further comments or questions regarding this discussion?

Thank you for your time and assistance.

APPENDIX 3

Interview with the Assembly member of Amanfrom

1. Are you aware of the problems associated with improper disposal of refuse in Amanfrom?
2. What is your general impression about the environmental sanitation in Amanfrom?
3. Is littering or improper disposal of refuse a major problem in Amanfrom?
4. What do you consider to be the major causes for littering of the environment?
5. Do you have enough waste container or incinerator in the community?
 - a. Yes [] b. No [] c. Few []
6. If yes do you use them?
7. Are the waste containers emptied regularly?
8. How many dump sites are there in your community?
9. What do you have to say on the distance to the dumpsite?
 - i. Too far [250m–More] []
 - ii. Far [200 – 250] []
 - iii. Quite far [15–200] []
 - iv. Close [100–150] []
 - v. Too close [less than 100m] []
9. What are the methods for disposing the waste?
 - i. Burning
 - ii. Crude dumping in water bodies and open spaces
 - iii. Land fill
 - iv. Others [] specify

10. List some of the common diseases that affect the residents of your community as a result of poor sanitation?
11. Who is responsible for the cleaning of the community?
12. Do you often take the chance to educate your community on the need to clean their surroundings?
13. A. yes [] B. No []
14. If yes what are some of the lessons you teach them?
15. What do you suggest should be done to improve sanitation in Amanfrom?
16. Who is responsible for the cleaning of the environment?
17. Do you have enough toilet facilities in Amanfrom?
A. Yes [] B. No [] c. others specify []
18. Do the residents pay for its usage?
19. If yes how much do they pay?
20. Do the residents actually patronise it?
21. Do you see the work of the Zoom lion to be very important in your community?
22. Would you offer any possible assistance for waste management in Amanfrom?
23. Do you have any further comments or questions regarding this discussion?

Thank you for your time and assistance.

APPENDIX 4

Interview with Zoom Loin Company Ghana Limited workers and Coordinators

1. How would you describe the environmental sanitation at Amanfrom?
2. In your view what are the residents' attitude towards sanitation?
3. In your view what is responsible for the indiscriminate disposal of refuse in Amanfrom?
4. Do they have places for disposing of refuse?
5. Are the residents provided with enough waste containers?
If yes are the waste containers emptied regularly?
6. Do various household have toilet facilities in their homes?
7. Those without toilet facilities do they resort to the use of public toilet?
8. Are the public toilet facilities enough to cater for the residents?
9. Does one need to pay for using the facility?
10. What about children and adults who cannot pay?
11. Are/is the toilet facilities kept clean and maintained always?
12. Do you see the work of the zoom lion important in Amanfrom?
13. Do your outfit experience challenges in line with their duty in Amanfrom?
14. Where are the problems if there are any in the community?
15. What are your suggestions on how to keep proper environmental sanitation in Amanfrom?
16. Do you have any further comments or questions regarding this discussion?

Thank you for your assistance and time.

APPENDIX 5

Interview with sanitary inspectors

1. What is your general impression about the environmental situation in Amanfrom?
2. Is improper disposal one of the major problems in Amanfrom?
3. What do you consider to be the major causes of poor sanitation in Amanfrom?
4. How many dumpsites are in Amanfrom?
5. How far are the dumpsites from the community?
6. Does the community have enough waste containers?
7. What could be done by the following persons or institutions to ensure good sanitation
 - i. Household
 - ii. Opinion leaders
 - iii. The District Assembly
 - iv. Youth
8. Which diseases are common because of the filthy nature of the community?
9. What are the causes of the diseases?
10. Are there enough public toilet facilities in the community?
11. What about individual homes?
12. Do the residents pay for the usage of the public toilet facilities?
13. What about those who cannot pay for the fees?
14. Do they have any alternative?
15. If yes what alternatives do they have?
16. Are the waste containers emptied regularly?
17. Have you had the opportunity of educating the residents on how to keep their environment clean?

18. In your usual inspection what happens to those who live in filth?
19. Do the residents have difficulties in solving sanitation problems?
20. Suggest possible measures that can be used to solve sanitation problems on Amanfrom?
21. Apart from what have been discussed do you have something else to say?

Thank you for your time and assistance.



APPENDIX 6

OBSERVATION CHECKLIST FOR ENVIRONMENTAL SANITATION AND ATTITUDE AMONG RESIDENTS OF AMANFROM

Examples of environmental sanitation problems are provided below. Please indicate how serious you view each example by using the following numbers next to the examples:

Grading Scale:

Not very serious [1]

Somehow serious [2]

Very serious [3]

NO.	AREAS OF OBSERVATION	GRADING SSCALES		
		1	2	3
1	Indiscriminate dispose of refuse into gutters or drains when it is raining in an attempt for the runoff to carry them away.			
2	Littering of immediate surroundings and streets during the night especially by hawkers.			
3	Unauthorised refuse sites created at the back of houses, abandon urinals, in front of public toilets etc.			
4	Scattering of used toilet rolls and papers around the public toilet facilities.			
5	Splashing of urine all over the floors and corridors of the cubicles and the floors of public toilet facilities and urinals.			
6	Defecating at the entrance of public toilet facilities, urinals etc. during the night.			

7	Hawking and other forms of businesses being transacted around choked gutters, unkempt and littered environment.			
8	Some neighbourhood sometimes not swept, unkempt and stinks.			
9	Common household waste items (example, Food waste, papers, plastics) deposits in the balconies, corridors and verandas of some selected houses.			
10	Odour or stench emanating from gutters drains especially during the afternoons as a result of waste-clogged drains and indiscriminate urinating around some localities during the night.			
11	Depositing of refuse swept from the various homes on the shoulders of streets.			
12	Incidence of residents hiding collected refuse under hedges weedy building plots, bushes, bridges and artisans depositing refuse created during the days" work at open spaces etc.			
13	Incidence of residents easing themselves into black polythene bags i.e. "flying parcels" leaving them around public toilet facilities, undeveloped building plots, gutters etc.			

Any other comments or observations made pertaining to environmental sanitation and attitude among residents of Amanfrom from?

Thank you for your time and assistance.