

**UNIVERSITY OF EDUCATION, WINNEBA**

**ASSESSMENT OF ENVIRONMENTAL ATTITUDE AND BEHAVIOOFi  
FISHER FOLKS ALONG THE WINNEBA BEACH**



**NANA AKUA OKYEREW A DJANDOH**


**2015**

**UNIVERSITY OF EDUCATION, WINNEBA**

**ASSESSMENT OF ENVIRONMENTAL ATTITUDE AND BEHAVIOUR OF  
FISHER FOLKS ALONG THE WINNEBA BEACH**

**NANA AKUA OKYEREWAA DJANDOH**

**(8130140014)**

The logo of the University of Education Winneba is a circular emblem. It features a central blue and white design with a sunburst pattern in the background. The text 'UNIVERSITY OF EDUCATION WINNEBA' is written around the top inner edge, and 'EDUCATION THROUGH SERVICE' is written around the bottom inner edge.

**A THESIS IN THE DEPARTMENT OF SOCIAL STUDIES EDUCATION OF  
THE FACULTY OF SOCIAL SCIENCES SUBMITTED TO THE SCHOOL OF  
GRADUATE STUDIES, UNIVERSITY OF EDUCATION, WINNEBA, IN  
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD  
OF DEGREE OF MASTER OF PHILOSOPHY (SOCIAL STUDIES)**

**OCTOBER, 2015**

## DECLARATION

### Student's Declaration

I, Nana Akua Okyerewa Djandoh, declare that this thesis with exception of quotations and references contained and duly acknowledged, is entirely my own original work and it has not been submitted, either in part or whole, for another degree elsewhere.

**Signature:** .....

**Date:** .....

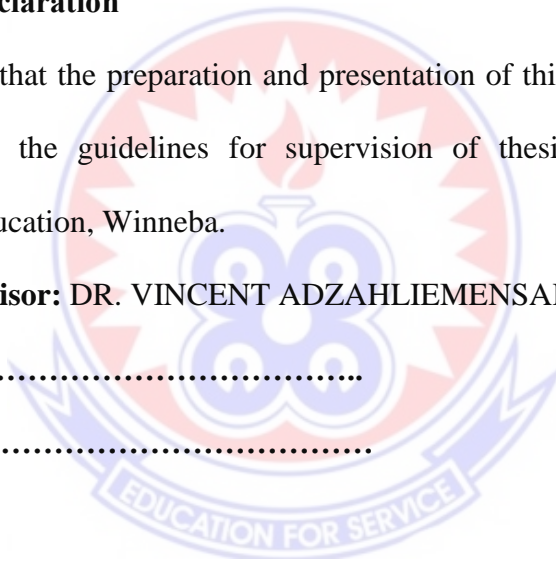
### Supervisor's Declaration

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

**Name of Supervisor:** DR. VINCENT ADZAHLIEMENSAH

**Signature:** .....

**Date:** .....



## **DEDICATION**

This dissertation is dedicated to my late mother, Mrs Mansa Adutwumwaa Djandoh.



## **ACKNOWLEDGEMENT**

My profound gratitude goes to Dr. Vincent Adzahlie-mensah, my supervisor, to all the lecturers in my department; Dr S. O Bekoe, Dr. Lawrence Oduma, Prof. Augustine Y. Quashigah, Dr. J

im Weiler, Prof. Obebe, Mr I. J. Obeng, Dr Harry Golo, Samuel Poatob, and Adam Mohammed. I am extremely grateful Ing. Kwaku Afrishia Djandoh, Ing. Ernest Arkhu Djandoh, J.D. Kittoe, Ben Duadze and all the Shepherds in my life.



## TABLE OF CONTENTS

<b>Contents</b>	<b>Page</b>
DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	x
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
Statement of the problem	7
Purpose of the study	8
Objectives of the study	8
Research questions	8
Significance of the study	9
Organization of the Study	9
CHAPTER TWO: REVIEW OF RELATED LITERATURE	11
Introduction	11
Understanding of environment and environmental awareness	11
Environmental Awareness	15
Environmental attitude	27
Environmental behaviour	46
People’s environmental attitude and awareness and it correspondence with their environmental behaviour	49
Conceptual Framework	57
Factors influencing environmental attitude and behaviours	58
The literature examines two main factors that influence environmental attitudes and behaviours. Those factors are examined in this section of the literature review	58
Illiteracy and ignorance	58
Social morals and values	59

CHAPTER THREE: METHODOLOGY	61
Research Approach	61
Research design	62
Population	63
Sample and sampling techniques	64
Data collection tools	65
Environmental attitude scale	66
Environmental awareness scale	66
Environmental behaviour scale	67
Observation	67
Reliability	68
Data collection procedure	68
Data Processing and Analysis	68
CHAPTER FOUR: RESULTS AND FINDINGS	70
Introduction	70
Preliminary analysis	70
Environmental awareness scale	75
Environmental attitude	84
Environmental Behaviour	94
This section examines the data on environmental behaviour	94
CHAPTER FIVE: DISCUSSION	102
Introduction	102
The environment and environmental Awareness among fisher folks along the Winneba	102
Environmental attitude held by the fisher folks along the beaches of Winneba.	103
Environmental behaviour of fisher folks along the beach of Winneba	104
The environmental attitude and awareness of the fisher folks and it correspondence their environmental behaviour	105
CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	108
Introduction	108

Summary of key findings	108
Conclusions	110
Recommendations	111
APPENDIX A: Observation Guide	128
APPENDIX B: Questionnaire for respondents	129
APPENDIX C: Environmental Behavior Scale	130
APPENDIX D: Environmental attitude Scale	131
APPENDIX E: Environmental awareness scale	133





## LIST OF TABLES

	<b>Page</b>
<b>Table:</b>	
4.1.1 Distribution showing the type of housing units occupied by respondents	74
4.1.2 Distribution showing the kind of toilet facilities available in your houses	74
4.2.2 Shows the response from the item; distribution of raw sewage disposed into the sea adversely affects marine life.	76
4.2.3 showing the response to the item, of stagnant water can breed mosquitoes	77
Table 4.2.4 shows response from the item; Pollution of our environment can affect global climate	78
4.2.5. the table below shows the responses to the item, protecting the environment will help individuals to enjoy a quality life	79
4.2.6 Showing our actions in our communities can put some plant and animal species into extinction some time to come	80
4.2.8 Distribution showing whether it is important to save green trees and vegetation	82
4.3.1 Showing environmental education for people cannot help to resolve environmental problems, only technology can	84
4.3.2 Showing the progress of a district should not be held up for the sake protecting endangered birds	85

4.3.3 Distribution showing I believe that information is increasingly necessary to be aware of the effects our actions have on the environment.	86
4.3.4 Showing the laws and government regulate and control so much that there is very little contamination these days.	87
4.3.5 Show the benefits of modern consumer products are more important than the contamination caused by their production and use.	88
4.3.6. Show the item, in my opinion, the more people know about the natural environment, the better their attitude towards it	89
4.3.7 Showing environmental education activities are only useful for children.	90
4.3.8 we should try to conserve the Earth's plants and animals, even though it is expensive.	91
4.4.1 Dumping refuse at approved sites is the right thing to do.	94
4.4.2 Dumping refuse into gutters can cause flooding	95
4.4.3 It is no problem to dump refuse into bins even when they overflow	96
4.4.4 Refuse can be dump anywhere when no one is watching	96
4.4.5 There is no problem defecating along the beach	97
4.4.6 It is improper to pass urine at any place one find him/herself	98
4.4.7 Keeping refuses at home for days can lead to sickness	99
4.4.8 Chocked gutters are breeding places for mosquitoes	99

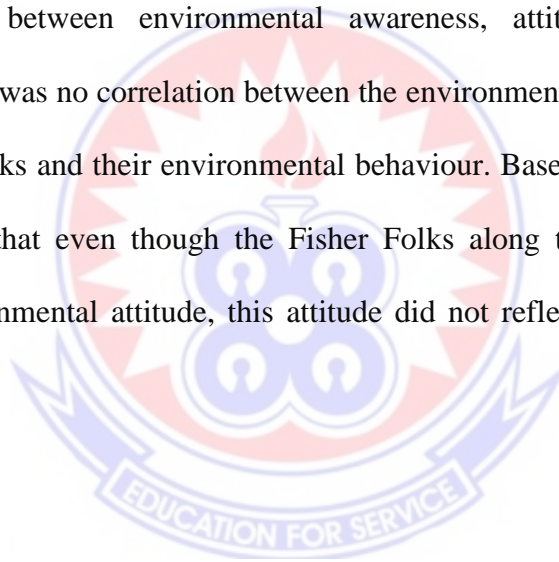
## LIST OF FIGURES

	<b>Page</b>
<b>Figure:</b>	
4.1.1 Distribution of gender of respondents	71
4.1.2 Distribution showing age of respondents	71
4.1.3 Distribution showing educational level of respondents	72
4.1.4 Distribution showing the number of years living in this community	73



## **ABSTRACT**

The research set out to investigate the environmental attitude and behaviour of the Fisher Folks along the Winneba beach. The study was designed and conducted as descriptive survey. One hundred and fifty respondents were sampled. The results from the data collected and analyzed from the field showed that fisher folks along the beach of Winneba have moderate awareness about their environment. It was established that the coastal folks hold moderately positive attitude towards their environment. In terms of the environmental behaviour, data from the field indicated that the coastal folks have low environmental behaviour. It was discovered that in terms of the correspondence between environmental awareness, attitude and environmental behaviour, there was no correlation between the environmental awareness and attitude of the Fisher Folks and their environmental behaviour. Based on the analyzed data, it was concluded that even though the Fisher Folks along the Winneba beach have moderate environmental attitude, this attitude did not reflect in their environmental behaviour.



## **CHAPTER ONE**

### **INTRODUCTION**

The issue of environmental pollution and global warming today has assumed a serious dimension and this threatens the survival of human and all living things (United Nations Environmental Programmes [UNEP], 2009). Widely discussed and poorly understood by most individuals, environmental attitudes and behaviours are fundamentally important when it comes to environmental sustainability and the survival of all living things. The environment is the basis of existence of all the living beings including human beings (Taylor, 2011). The main constituents of the environment and the living world are mutually dependent (Ramsey & Rickson, 1976). This means that one cannot live on its own without the other.

Our immediate environment needs proper management since it supports the lives of human beings and contributes to the eminence of life of people. A hale and hearty environment is important because the health status of a society to a large extent, affects its total productivity and national development. It is therefore necessary that all persons maintain a clean environment. The environment in third world countries; Sub Sahara regions especially Ghana is crippled with poor sanitation (World Health Organization [WHO], 2005). It is therefore, no surprise that the region is battling with the outbreak of primitive diseases such as cholera, chicken pox, scabies etc. According to Tarloy (2011), human attitude and behaviours is the main contributor to the environmental problems which is posing serious threats to sustaining life on earth. The day to day activities of people affect the environment either positively or negatively.

Most natural disasters the world is witnessing currently are the prolonged handiwork of humans. 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, 2003) as it is capable of affecting human beings and all living species (Gore, 1993 cited in O'zden, 2008). The nature of environmental problems has brought serious implications such as choked gutters, air pollution, mountains of garbage, solid, and toxic waste among others. There is a dire need for society to pay serious attention towards protecting life on earth. While WHO is clear on human beings being dependent critically on the proper management of the environment, today's environmental problems arise from the lifestyles of human beings who live in a geographical area (WHO, 2005).

The use of ecological resources and the consequent increase in waste generation has brought about the need for proper waste management. This is pre-requisite since our environment serves also as a refuse repository. One major problem in most communities in Ghana is poor environmental attitude and behaviours among the populace.

Beaches in other part of the world are well developed and equipped with appropriate waste disposal systems. Similarly, beaches that are managed by private investors in the country for recreational and hospitality purposes are well kept and the sanitary conditions are well under control. It is a common knowledge that private beaches generate adequate revenue that can take care of the waste generated by holiday makers and those who patronize their beach. In the same light, the other beaches occupied by indigenes or locals also operate brisk business most especially in the area of buying and selling. The coastal folks mostly fishermen and fishmongers make their daily livelihood at the beach by selling sea foods, a product which is patronized by both the rich and the poor, homes and restaurants, so why they seem not

to be bothered by the insanitary condition at the beach, the place where they get their main livelihood, is very puzzling.

It is no clandestine that the beach is a versatile venue. Apart from it being the main venue or source of sea food, it is also used as a sight for relaxation for both indigenous people and foreign emigrants. Previously, the beach was the highest revenue generation point for Ghana Tourist Board. Every sea is linked to a lagoon, which is sometimes linked to a wet land known as Ramzah site. A Ramzar is a wetland that is haven or home to different species of birds including migratory birds. Ghana is one of seven countries blessed with such natural habitat, in the past people used to pay to watch these birds at the Munyi lagoon, the main lagoon that is linked to the sea from the eastern part of Winneba. Due to encroachment and most importantly pollution of the area, the once beautiful haven full of birds can now only boast of a handful of birds. The place is now a dumping site. Not only has the revenue generated from this venue reduced but the place has now become the home of all varieties of degradable and non-degradable filth especially product from polythene. This affects the health of people living in and around these areas (Lyons & Breakwell, 1994)

In spite of health and environmental programmes organized by the various agencies, the already poor environmental conditions keep worsening with filth and other health related issue. The Municipal Assembly has revenue collectors at the beach every day of the week with the exception of the weekends. Where does the revenue go, the few trash bins in these areas are always overflowing and unattended to. The country loses so much revenue whenever it rains. Not only are houses, people and property destroyed but also the outbreak of cholera. The money spent on medication and the extension of cholera facilities can be used in other sectors of the economy like education and the creation of more employment. In Ghana, issues of

poor sanitation conditions and waste management practices cut across every part of the country, especially, the coastal part. Sanitation and waste management conditions at Winneba especially moving close to the beach leaves much to be desired. The area is submerged in filth owing to poor sanitation and waste management practices, making the area prone to outbreak of diseases. It is becoming progressively clear that not only are people refusing to heed to the many messages in the media and the educational forum organized by the Ministry of Health (MOH) and some Non-Governmental Organizations (NGOs) on the need to keep our environment clean, but it also appears that some are not bothered about what happens in our localities, as those people are still resisting the need to adjust their behaviours and attitudes towards the environment. Consequently, many people are determined to continue to conduct business normally in a filthy environment and do not care about contracting diseases including cholera and malaria (The Mirror, Saturday, 2006:2)

Solid and liquid wastes from homes, institutions and schools are not properly disposed in Ghana. People's perception and attitude towards refuse disposal are either limited or primitive. As a result, some residents feel at ease disposing garbage indiscriminately instead of dumping it in a refuse container. This garbage ranges from plastic which are non-degradable to packaging items, food scraps, empty water sachets, pieces of papers, and a host of others. The end results of these attitudes impart so much on global warming.

One of the development indicators for the attainment of the Millennium Development Goals Seven (MDGs 7) is the efficient management of garbage not only in the cities but all other communities and institutions as well. It appears Ghana has progressed in its development efforts, but insanitary conditions in the cities and communities including some institutions of learning, seems to be an embarrassing



situation. Apart from the health risks, insanitary environment brings embarrassment and discomfort to inhabitants. Bacteria action from waste products emits unpleasant smell that could sometimes cause ill-health or in some cases death as was the case in La Cote d'Ivoire where a French company was reported to have discharged waste materials in the country's coastal borders that killed many people (Boateng & Nkrumah, 2006).

The phenomenon of indiscriminate refuse disposal practices which are rooted in human attitude and behaviour has crept into our educational institutions of learning right down from the basic schools to the tertiary institutions. Refuse such as empty water sachets, polythene bags, fruit peels, pieces of papers, food scraps and all sorts of garbage generated from dormitories, classrooms, kitchen, halls of residence, lecture halls etc. find their way into drains, lawns, gutters, bushes and unauthorized places. People go as far as dump rubbish beside dustbins instead of putting them in the dustbins or refuse receptacles. These insanitary conditions, if not properly checked will affect the health status and academic work in many schools.

Initial visit to some coastal towns reveal that, in spite of the environmental education being carried out and the use of other environmental related programmes to sensitize citizens on environmental attitude, the level of environmental consciousness is still low among fisher folks in Winneba. Some fisher folks do not show signs of concern for the environment and global warming in general. They are sometimes compelled, before they take part in the cleaning of their environment. An example is when an NGO visited five coastal towns and villages and reported people have poor attitude towards their environment and for that matter their beaches were very dirty. It is critical to assess the attitude of people towards their environment for promoting

sustainable development and improving the capacity of the people to address environmental and developmental issues.

Normally, it is expected that students who have undergone some form of environmental education in some subjects will be conscious of the environment so that they can in turn serve as catalyst to influence their peers positively to be environmentally friendly. Unfortunately, this ideal situation is not the case in most schools and communities along the coast of Ghana. Some have blamed the society of the existing environmental problems whereas others think schools ought to do more in stimulating environmental consciousness or awareness. In the midst of these arguments, the need to examine the problem on a systematic basis becomes clear and very essential.

A review of environmental reportage in Ghana's major daily newspapers over the first three months of 2004 revealed that 94 articles on environment were published in the Ghanaian Times, The Daily Graphic and The Mirror. Out of this number, 30% focused on educating the public about some behaviours and attitudes that adversely affect the environment and the steps that could be taken to avert the negative impact. About 44% was concerned about sanitation, and 13.8% were on water pollution. The remaining 12.2% articles were on noise and air pollution, conservation and preservation of our forest and the destruction of the biodiversity (Nii-Okpe, 2004).

The Human Development Report (2006) maintains that all other things being equal, improving access to environmental cleanliness would increase and sustain the benefits of access to safe water and will also reinforce the links that environmental friendliness has with other areas of the society to ensure quality of life.

Considering all that have been said so far about the need to maintain sanitized environment, it is crucial to find out what really could be done especially in our

schools to address the issue of managing the refuse which is one way of preventing environmental problems. It is based on this background that the research set out to investigate the phenomenon of environmental attitude among inhabitants of Winneba in the Effutu Municipality. The study was centered on the fisher folks living along the beaches of Winneba because little or no literature is found on the environmental attitudes and behaviour of people of this particular geographical area of the country.

### **1.1 Statement of the problem**

A cursory observation of the environment along the beaches in Winneba, shows visible aspects of environmental challenges, mainly related to the issue of poor waste disposal. To be specific, this includes accumulation of garbage in front of or close to homes, open defecation on the beach, seashore littered with plastic waste, heavy littering during events over the weekends, waste-clogged drains, and weedy lawns interspersed with empty water sachets around the beaches., black polythene bags, fruit peels, biscuit and toffee wrappers, pieces of papers and all sorts of garbage are also seen at locations along the coast or close to the sea.

Household waste in the form of organic and inorganic are left in heaps for weeks and later set on fire which tends to generate toxic fumes that can be dangerous to the health of the inhabitants. The unhealthy environment created by this poor attitude could lead to the outbreak of diseases like malaria, typhoid, cholera, dysentery among other. It becomes necessary to conduct a study to find out what might have contributed to the situation as described in Winneba.

## **1.2 Purpose of the study**

The purpose of this study was to assess the environmental awareness, attitude and behaviour of the residents of the beaches along the coast of Winneba and determine, whether there was correspondence between their environmental awareness and attitudes on one hand and their environmental behaviour on the other.

## **1.3 Objectives of the study**

The specific objectives that guided the study were to

- Assess the level of environmental awareness among the fisher folks along the beach of Winneba.
- Assess the environmental attitude among the fisher folks along the beach of Winneba.
- Assess the environmental behaviour among the fisher folks of Winneba.
- Determine the extent to which the assessed environmental awareness and attitude correspond with environmental behaviours.

## **1.4 Research questions**

The following research questions were formulated in line with the objectives of the study.

1. What is the level of environmental awareness among the fisher folks of Winneba?
2. What is the environmental attitude held by the fisher folks of Winneba?
3. What are the environmental behaviours exhibited by the fisher folks of Winneba?

4. To what extent do the environmental awareness and attitudes of the respondents correspond with their environmental behaviours?

### **1.5 Significance of the study**

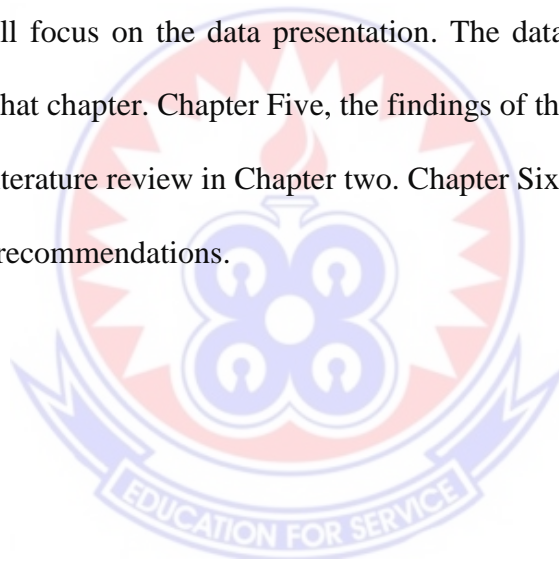
It is envisaged that the findings from this study will add up to the existing body of knowledge on environmental awareness, attitude and behaviour of inhabitants of coastal communities in Ghana. Currently, there is little literature about the fishing communities along the coast of Winneba, therefore this study will not only add to the existing limited literature but also serve as a basis for further research. It would also generate information for policy makers such as Ministry of Local government, Environmental Protection Agency (EPA), Metropolitan, Municipal and District Assemblies among others and other Stakeholders in the field of the environment which aims to equip the individual with knowledge, attitudes and skills in order to raise concern for the environment and to work towards solutions of environmental problems and the prevention of new ones. More importantly, it will inform organizers of sensitization programmes with regards to the right approach or methods of disseminating or creating environmental awareness that will results in a positive change in both environmental behaviours and attitudes of the people

### **Organization of the Study**

This study has been divided into six chapters. The first chapter is about the introduction to the whole study which includes the background of the study; statement of the problem; purpose, objectives of the study, research questions; significance of the study. Chapter Two of the study focuses on the review related literature. The following are the themes that were discussed; the environment and environmental

awareness, the environmental attitudes of people along the Winneba beach, the environmental behaviour of the people along the winneba beach and the correspondence between the environmental awareness and attitude on one hand and environmental behaviour on the other hand

Chapter Three presents the methodological framework that was adopted for this research. It consists of the study area, research design, the population, sample population and sample and sampling techniques. It also outline the instruments for data collection, observation, data collection procedures, validity, reliability measures, data analysis techniques and conclusion of the chapter would also be presented. Chapter Four will focus on the data presentation. The data collected was presented and analyzed in that chapter. Chapter Five, the findings of the research were discussed in line with the literature review in Chapter two. Chapter Six focused on the summary, conclusions and recommendations.



## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **Introduction**

This chapter reviews literature on how people's environmental awareness, attitude and behaviours affect the sustainability of the environment. Literature was organized under the following themes; the environment and environmental awareness, the environmental attitude, the environmental behaviour and the correspondence between the environmental awareness and attitude of the people on one hand and their environmental behaviour on the other.

#### **Understanding of environment and environmental awareness**

The concept environment seems to transcend a particular definition, Parsons & Carlson (2004) sees environment as an all-embracing term describing the terrestrial, aquatic and atmospheric systems of the world. In its widest use, Parsons & Carlson (2004) explains, environment refers to all the biophysical features, organic and inorganic resources and all bio-diversity disposable to humankind. According Curringham, (2002). Environment (from the French word: to circle or surround) can be defined as (1) the circumstances and conditions that surround an organism or group of organisms, or (2) the social and cultural conditions that affect an individual or community

The concept of environment encompasses all the natural resources which intertwine in a complex global ecosystem embodying many sub-systems. Disruption in such systems, which is as a result of cumulative indiscriminate degradation which takes place in localized environments such as villages, towns and cities, twist the

delicate ecological balance and have dire consequences for mankind, and thus provide a compelling justification for the preservation of the environment. (www.academia.edu).

Barrow (1995) contributing to literature on environment defined it as the sum total of conditions within which organisms live. Barrow (1995) suggests that environment is the result of interaction between living (biotic) and non-living (abiotic) parameters. According to Schaefer (1997) cited in Stephens et al (2002), 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.

### **The Coastal environment in Ghana**

According to Oteng-Ababio (2011) the coastline of Ghana is approximately 550km long. He explains that the zone is generally described as low lying and below the 30m contour above sea level, thus making it prone to erosion. Its vulnerability to erosion is further intensified by its zonal orientation and the fact that it is an open coast that enables swell waves to break obliquely to the shoreline, generating long shore currents that carry sediment alongshore (Armah, 1991 cited in Oteng-Ababio, 2011).

The coastal communities in Ghana are mostly permanent indigenous settlements, many of which are centuries old. The settlers live and permanently earn their livelihood at these settlements. In recent years, private property developers, both foreign and local, have also acquired land along the coast for residential and



commercial purposes. Thus, in a way, human settlement and activities affect coastal ecosystems ([www.academia.edu](http://www.academia.edu) , [www.researchgat.net](http://www.researchgat.net) , [www.marstone.co.uk /](http://www.marstone.co.uk/) )

Coastal areas are generally at risk subject to possible impacts from climate change largely due to the global sea level rise in most coastal regions of the world including Ghana (Oteng-Ababio, 2011). Such changes have occurred over a wide range of sequential and spatial scales that reflect impacts such as movement of the earth crust, and variations in sea level and climate. The physical shoreline change is also influenced by coastal engineering structures and other human activities. Although the coastal environment can retain some degree of natural character, increased human activities and modification reduces the “naturalness” (Dahm, 2000).

Though the impact of climate change is global, it inevitably has greater adverse effects on the poor rural population in the developing countries. This is due to the fact that these populations depend on the basic nature for their livelihoods sustenance. Climate change has had its clang on African population which include sea level rise with attendant ocean surges, coastal flood, coastal erosion, desertification and flash flood disasters along most inland waterways (Oteng-Ababio, 2011).

High concentration of human populations along the coasts of Ghana, especially, in the Effutu Municipal area makes coastal ecosystems some of the most impacted and altered worldwide (Adger, Arnelland & Tompkins, 2005). For example, it is estimated that about 40% of the human population is compressed into 5% of the inhabited land-space along the margins of ocean, seas and great lakes (Olsen, 2009). In addition, a United Nations Environment Programme report in 2009 confirmed that key habitats supporting coastal ecosystems such as mangroves are declining in most parts of the world (UNEP, 2012).

The current poor state of Ghana's coastal zone is as result of all-embracing pressures largely from anthropogenic sources, resulting in environmental and socio-economic impacts on the functioning of the coastal ecosystems (Oteng-Ababio, 2011). Drivers of degradation include population increase, poverty, over-exploitation of fisheries resources, farming, industrial and extractive activities. Oteng-Ababio (2011) adds that another pressing consideration for Ghana is the impact of global environmental change on its coasts and coastal resources. Projected increase of flooding in coastal areas might further impact marine ecosystems and coastal livelihoods (EPA, 2011). Damage to the coastal zone is estimated to reach €4 million per annum by 2020s, rising to €4.75 million per annum by the 2030s (World Bank, 2010). The severity of marine and coastal ecosystem degradation also affects the access of coastal communities to goods and services necessary for life.

Coastal communities in Ghana have a huge and growing population along the beaches due to massive and continuous migration of people into these communities in search of jobs or permanent settlement (Lawson, 2014). These people are not catered for in the original plan and due to the increasingly high cost of living, they are forced to live outside the "mainstream" community in unplanned and illegal pre-urban settlements along the beaches. The result of the attitudes and behaviours of these settlers is the creation of slums along the beaches.

After trying the usual strong arm tactics of dealing with squatter settlements and their attitude towards environmental sanitation, local authorities have begun to acknowledge that the situation needs to be handled in a better, more constructive way, which will present beneficial possibilities to both the populace and the authorities. This has led to discussions of possible intervention strategies to create opportunities for the development of areas outside the main city, thereby encouraging a spread

rather than the current concentration of development in and around the main city; plans are focused on resettlement rather than legalising existing illegal settlements through introducing various land home ownership schemes and providing basic infrastructure and services to the people in these areas ([www.roughguides.com](http://www.roughguides.com))

Considering the dangers of lack of access to sanitation facilities, improper wastewater management practices, and the poor environmental attitudes and behaviours, it is imperative that a study is conducted to investigate the environmental awareness, attitude and behaviours of coastal communities in Winneba in the Effutu Municipality of Ghana.

The MDG 7 points to sanitation as a key element in sustainable development. In the context of sanitation, sustainable development would mean, access to sanitation for all that does not withdraw more fresh water resources than necessary if at all, and which does not pollute soil, surface or groundwater, and also allows for the essential nutrients in human waste to be recycled back into the environment in a way that will not adversely affect human health. The MDG is yet to materialize.

### **Environmental Awareness**

Environmental awareness can be viewed as the perception of an individual consumer and its impact on the environment (EPA, 2014). This means, environmental awareness encompasses incorporating knowledge of contemporary issues which affect nature, both locally and beyond, as well as discovering actions that can make a difference in one's surroundings. Dunlap and Jones (2002: 482) comment 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”. Citing (Weigel, 1983; Asare, 2005; Kolmus and Agyemang 2002; Hassan, 2012) mentioned that environmental awareness is an evaluation of, or an attitude towards facts, one’s own behaviour or other’s behaviour with its consequence on the environment. According to these authors it is the indication of one’s conscious state of being towards one’s own environment. Environmental awareness therefore implies the creation of general consciousness of environmental issues and their causes in the people and also brings about change in people’s perception, attitude, knowledge, values and necessary skills to solve environment related problems.

Environmental awareness brings about a strong sense of responsibility towards the conservancy of the environment. It also brings sense, motivation, and proactiveness towards the sustainability of nature and natural resources. Environmental problems and disaster can all be attributed to poor awareness (Gill and Taylor, 1981; Tewari, 2004; Madsen, 1996). All these assertions and explanations is a proof that environmental awareness is necessary to achieve environmental protection and restoration. Being aware of our environmental activities at the same time taking responsibility for our action will have a far-reaching effect, starting from our own background to our global system. The public must have basic grasp of environmental awareness in order for them to be committed or to be proactive towards issues of the environment. Linke (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 worthwhile tool in envisaging the environmental behaviour of people. In the view of environmentalist like Patel and Patel (1994) and Schmidt, (2007), environmental awareness is about being informed of one's surroundings and having concern for the preservation of the environment as well as being responsible in the use of natural resources. From the above definitions, it could be inferred that, this is the reason why in order to investigate the environmental behaviours and attitudes of the fisher folks of the Effutu Municipality towards sanitation, it is very necessary to assess their level of environmental awareness.

### **Institutional arrangement for environmental awareness**

The literature in Ghana indicates that, there are forums on environmental awareness usually organized by institutions such as Natural Resources and Environmental Governance (NREG) with the support of United Nation Environmental Programmes (UNEP). Most of these programmes are organized for some selected individuals from the various environmental offices, with the main aim of training them so that they in turn will move from community to community to train people in these areas. For some reasons the reports from such programmes end up on shelves without getting to the real beneficiaries. Acquisition of these knowledge about the environment equips an individual on conservation and improvement of the environment.

Apart from the NREG, there are other governmental agencies such as the Environmental Protection Agency (EPA), established to curb the indiscriminate way in which virgin forest was being destroyed by both chainsaw operators and farmers who were engaged in bush burning. The National Environmental Sanitation Policy (NESP, 1999), National Environmental Policy (NEP, 1990) and many others were instituted by the government to create environmental awareness among Ghanaians. The NEP for instance, was instituted with the following objectives

- Promote studies, research, survey, and analysis for the improvement and protection of the environment of sound ecological system in Ghana
- To initiate and pursue formal and non-formal education programmes for the creation of public awareness of the environment and its importance to the economic and social life of the country
- To develop a comprehensive database on the environment and environmental protection information for the public.

- To conduct seminars, training programmes and gather public report and information relating to the environment.

If the NEP alone should concentrate on achieving its objectives, many Ghanaians will be well equipped with vital issues concerning the environment and this in turn will reduce ignorance and other actions of the public that result in the annual flooding of certain key areas of the nation.

Many Non-Governmental Organizations (NGOs) are also doing a great deal in creating environmental awareness in communities about the need to nurture and preserve it for future generation. Friends of the Earth- Ghana, an NGO whose sole objective is to preserve the few remaining water bodies in the country, has taken it upon themselves to train and educate more than 26 local communities nationwide in the preservation of water bodies. These communities have been educated on the dangers involved in the polluting water bodies and the health implications.

Additionally, the Ministry of Health (MOH), Environmental Protection Agency, (EPA) other agencies and the Ghanaian media periodically organize environmental awareness programmes in communities and other public places. An article on environmental awareness released by ([www.modernghana.com](http://www.modernghana.com)) on the 18<sup>th</sup> of May 2009, interviewed traders at Afienuya in the Greater Accra Region and commuters at some Ghana Private Road Transport Union (GPRTU) stations, when asked if they were aware of some environmental issues relating to sanitation, majority of the answers provided by both traders and commuters indicated that they have average knowledge about the environment and sanitation. They further stated that, it was the responsibility of the government and the waste management team to clean the environment, since heavy taxes are paid to them. When asked about their homes and whose responsibility it was to clean their surroundings, they responded

that the fees charged by most waste management teams are too expensive; hence they resort to throwing rubbish into gutters and other public places where the waste management team are mandated to clean.

A survey by the Ministry Of Health (MOH) asked respondents in the Chokor, Nugua Teshie and some fishing communities in the Greater Accra Region if they were aware of the causes of cholera, a common disease that hit the city and most parts of the country during wet seasons. Most of the respondents blamed it on choked gutters and poor sanitation of their surroundings. The article concluded that even though ignorance and illiteracy still prevail in these communities, People are averagely informed about the consequences of poor sanitation. According to the Ministry, an earlier survey conducted in these same area some years back, saw most of the respondents blaming the outbreak of cholera and diarrhoea on curses and other superstitious beliefs. This led to intense environmental education. If these articles are anything to go by, then more education should be made to these communities especially those living around the coast. Choked gutters, filthy shores and other ill sanitation problems at the coastal part of the country and the entire nation as a whole can be attributed to low levels of environmental awareness, Environmental (UNEP, 2009).

Since majority of people live in a global village, the acquisition of knowledge about the environment should not be limited to one's local environment alone. In simple terms it means knowledge, understanding of facts and concepts related to the environment equips one with the necessary information in times of disasters like pollution, deforestation, population explosion and ecological disruption, therefore people's knowledge of the environment should not be limited to only their dwelling place. Dunlap and Vanliere, (1984) also points outs that environmental awareness is a



global attitude with direct effect on behaviour through behavioural intentions. Ziadat (2009) is of the opinion that public awareness through educational programs is very essential and a step toward sustainable developments. The development of environmental awareness among the public is a key element in the formation of fundamental solutions for environmental problems that are blocking sustainability especially pollution and waste management in Ghana, the coastal part to be specific. In addition, Ziadat (2009) stated that environmental opinions are commonly more mutual among the generation worldwide.

### **Environmental education as a factor 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. According to Duroy (2005) efforts to raise awareness usually focus mainly 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 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 is to acquaint and sensitize the young children on environmental problems and concerns (Duroy, 2005). He adds that environmental education is an idea to inculcate in them a healthy personal and social attitude as well as behaviour towards the environment. Thus,

fisher folks of coastal communities in Winneba must be aware of 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 far inhabitants of coastal communities are aware of their environment and its problems.

Educational background and age have been identified as having a strong correlation with environmental awareness (Sahim, Blanton & Williams, 2004). It is very clear then that the level of one's education significantly affects a person's awareness. Those with higher education or even those in the same cycle but are ahead of their colleagues showed much awareness than their colleagues below them. The same applies to age. By this, much older people were identified to be more aware of the environment than to the younger ones. The two factors may be linked in that it is expected that people at higher levels will ordinarily be older than those in junior levels.

Sahim et al. (2004) as explained above in relation to the correlation between education and age and environmental awareness. Since, highly educated people are sometimes seen littering the environment. Among these highly educated people are graduates, and people with higher educational profile. In order to raise environmentally-aware individuals who can take responsibility to overcome environmental problems, people from the pre-school and above should be educated about these issues. People could acquire the necessary awareness and responsibility about the environment by implementing instructional approaches, which make people more active and improves their brain power (Sahim et al., 2004).

World educators and environmental specialists have repeatedly pointed out that a solution to environmental crisis will require an environmental awareness and its

proper understanding which should be deeply rooted in the educational system at all levels of education (Shin, 2001).

The existing curricula at all educational levels provide a lot of opportunities to make people aware of the environment. In this present context the need for studying the environmental awareness of a secondary school student is very paramount. It is very much an crucial need for each individual to develop an awareness of protection and preservation towards the environment ([www.bioline.org.br/request](http://www.bioline.org.br/request)). In their study, Sahim et al., (2004) found that gender has no effect on the environmental awareness of people. That is there is no significant difference in terms of environmental awareness between males and females.

Media coverage, including newspaper reports, radio broadcasting, television and internet programmes have been cited as a source of influence to people's awareness of their environment and its sustainability (Duroy, 2005). They play significant role in ensuring environmental awareness. Topics on the political agenda, and campaigns that focus on emotional involvement of the population should direct public attention to environmental issues and raises people's awareness on the environment.

Duroy (2005) in his study found that economic influence has a marginal direct influence on environmental awareness but no direct effect on environmental behaviour. According to Duroy (2005) urbanization, the level of subjective well-being and the level of income equality rather do have direct effects on environmental awareness. To him, economic influence, have marginal influence on environmental awareness but has little or no effect on environmental behaviour. This is because the economic influence of an individual could affect ones environmental attitude and behaviour towards the environment by either being friendly or unfriendly. A person's

environmental attitude and behaviour, might depend on the knowledge, preparedness and concern that the person has in protecting the environment and also one's favourable behaviour towards the preservation of the environment,([www.cnn.com/2013/0807/tr](http://www.cnn.com/2013/0807/tr) )

The notion that, environmental awareness brings about changes in perception, attitudes, values and necessary skills to solve environment related problems is corroborated by Mishra & Koehler (2006) who noted that environmental awareness refers to knowledge that individuals have about the environment and also attitude, values and necessary skills to solve environmental related problems. There is the need for people to be aware of their environment, environmental issues, and the causes of environmental problems so that they can bring about changes in their perception, attitudes, values and skills to help solve environmentally related problems. This is due to the fact that, a higher level of environmental awareness among people gives them an opportunity to learn how to nurture the environment and behave pro-environmentally.

### **The impact of environmental awareness**

Asare (2005), opines that a host of Ghanaians are aware of the dangers associated with the way their environment is kept. Asare (2005) reports in a study conducted in Mankessim, the Central Region of Ghana, that participants expressed that poor sanitation, unsafe water to drink, wash with or swim in, give them, many infections. Participants were also aware that waste and filth are the breeding grounds for flies. Malaria which is very common in the area was mentioned to be as result of choked gutters, bushy environment and stagnant water. On the whole, it was concluded in Asare's study, that the participants expressed much awareness on factors

that make their environment dirty. Sound environmental sanitation management ensures that appropriate intervention are introduced and implemented to promote attitude and behaviour change.

Similar studies by UNEP (2008) investigated people's awareness of the economic effects of human activities around coastal environment of West Africa. It was found that the health impact of inadequate environmental sanitation leads to a number of financial and economic costs including direct medical costs associated with treating sanitation-related illnesses, loss of income through reduced or lost productivity and government costs of providing health services. Additionally, the study found out that, people were aware that poor sanitation also leads to reduced income from tourism (due to high risk of contamination and disease) and clean-up costs. A World Bank country environmental analysis conducted in Ghana has shown that health cost resulting from unclean water, poor sanitation and hygiene is equivalent to 2.1% of annual Gross Domestic Product [GDP] (UNEP, 2008).

The significant economic benefits of good environmental sanitation are not a secret; the media often emphasize health benefits, but the time savings and opportunity cost are equally important stories (UNEP, 2008). Environmental sanitation management ensures that there is prudent allocation of limited resources tailored to the needs of the people to ensure economic sustainability. A healthy people produce more and miss fewer days at work, leading to a healthy community which often create more lucrative market for goods, services and investment.

Johnson, Bowker & Cordell (2004) conducted a study on environmental awareness of people in Enugu. The study revealed that majority of the respondents from the various suburbs, were aware of what constitute environmental sanitation offence, although efforts to engage in good sanitation practices are almost non-

existent. Out of the 156 respondents from households, 79.5 per cent indicated that, they were aware that it is an offence to leave waste or litter in front of and or around one's property or business premises. This implies that people know what right and wrong sanitation practices are. It is important to chart strategies that will cause inhabitants to conform to acceptable sanitation attitude, behaviour and practices at both the household level and public places.

Every money 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 (WHO, 2008). 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).

Ilesanmi (2006) opines that people are aware that poor environmental sanitation practices also affect the environment in diverse ways. Ilesanmi (2006) conducted a study using 400 participants in four urban towns in Nigeria. He found that people are aware indiscriminate littering, poor disposal of domestic wastewater, sewage and solid waste improperly discharged presents a variety of concerns, as these promote the breeding of communicable disease, vectors as a result of air, water and soil pollution. He concluded that in regions where a large proportion of the population are not served with adequate water supply and sanitation, sewage flows directly into streams, rivers, lakes and wetlands, affecting coastal and marine ecosystems, fouling the environment and exposing millions of children to disease. Particularly in the context of urbanization,

Ilesanmi (2006) adds that people in urban communities are aware poor waste disposal contributes to a loss of valuable biodiversity. In the case of coral reefs, urban

and industrial waste and sewage dumped directly into the ocean or carried by river systems from sources upstream, increase the level of nitrogen in seawater. Increased nitrogen causes overgrowths of algae, which in turn, smother reefs by cutting off their sunlight. Improved environmental sanitation management reduces environmental burdens, increases sustainability of environmental resources and allows for a healthier, more secure future for the population.

Lawson (2014), reports that most rural coastal communities in Ghana have some ingenious but local, knowledge of the effects of their attitude and behavior on their environment. This knowledge is yet to be properly documented. It only by documenting and examining the existing knowledge, that more can be explored in order to assist the communities in ameliorating the consequences of their environmental attitude and behaviours to environmental sustainability. Lawson (2014) advises that the indigenous knowledge therefore needs to be integrated with modern techniques to improve risk analysis and contingency plans for comprehensive community based flood disaster management.

### **Environmental attitude**

Attitude has been understood in different dimensions by different authorities. Citing Scholl (2002), attitudes was defined as a mental disposition to act that is expressed by evaluating a particular entity with some degree of favour or disfavour. Similarly, 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. This disposition can be expressed by different types of evaluative responses. Attitudes express values, evaluate or show feeling about some idea, a person, object, event, situation or relationship. They are likes or dislikes

involving some degree of evaluation and some action-preparedness too. Attitudes are excellent predictors of conceptual cognitive processes and reliably determine how individuals make sense of their world. For instance, if an individual reacts favourably towards the environment, it means that person has a good environmental attitude and will express and act positive towards the environment, ([www.princeton.edu/pr/prob](http://www.princeton.edu/pr/prob) )

Focusing on the concept of environmental attitude, it has been defined by Wortman (1992) that environmental attitudes are thoughts and feelings that encourage people to act as if they dislike or like a person, an object and issues. He further argues that the relationship between human beings and environment is thus a function of culture. Blaire et al., (1975) and Asare (2005) consider environmental attitude as interest in relation with a wider related concept such as understanding human life including protecting our physical environment.

Environmental attitude has also been defined by Rajecki (1982) as an “enduring combination of motivational, emotional, perceptual and cognitive process with respect to some aspects of our environment.” Environmental attitude therefore refers to how people view environmental issues, their perspective, beliefs and levels of support, including their finding 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 (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 et al., (1986) 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.

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). This means that one's environmental attitude manifest in their actions and reactions toward the environment. Lozzi (1989) 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. According to Holahan (1992) environmental attitude is people favourable or unfavourable able 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. 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 and Ajzen (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 in a way is perceived as how to be in proper relationship with regard to one's environment. Judging from the above literature,

almost every one of the authors is of the belief that environmental attitude is the concern one shows towards the physical environment. Zoil a local waste management team, was employed by the government of Ghana to embarked on a massive cleanup exercise and also plant coconut ([www.thechronicles.com.gh](http://www.thechronicles.com.gh)). Since it began its activities on September 2011, coastal dwellers hardly participate in any of the cleanup exercise. The cold attitudes shown by these coastal dwellers, does it indicate a lack of no interest in their environment?

Schultz (2002) posits that environmental attitude is about the perception of values about a given environmental issue. In other words, it is how an individual shows concern and act friendly or favourably towards the environment. It can also be perceived as an individual's connectivity to a specific situation that serves as the basis for evaluating a reaction in a situation. Tobin, Tippins and Gallard (1994) also view environmental attitude as a learned belief which develops from an individual's beliefs, knowledge and values about the environment that governs his or her action to support or sustain the environment. Again, the relationship between man and environment is highlighted. One way or the other, all these authors are elaborating the term environmental attitude, as "an evaluation of ideas, events, objects or human beings and their relationship with their physical environment". Since the environment has to do virtually everything around us, it is safe to refer to it as an attitude or "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 but also the nature of human beings and how they can preserve their surroundings.

### **Environmental attitude among people living along the coast**

A report by the Mfantseman Assembly on environmental attitude in Mankesim, presented organized understanding of the implications of environmental behaviours among people living in coastal communities. The report argued that the community is yet to witness a change in the environmental attitude of both locals and visiting traders ([www.mfantseman.ghanadistrict.com.gh](http://www.mfantseman.ghanadistrict.com.gh)). The report presented evidence that the town generates about 19.34 tons of waste per day. With a few drainage systems, which are most of the time choked with both liquid and solid waste. A total of 7058 tons of waste was collected from the area in 2008. With only three collection points are average 60% of the waste generated are collected what then becomes of the remaining 40%.

The report by the Mfantseman Assembly, explained that although the information Van goes round every market day and educate people on the dangers of poor sanitation and its numerous consequence for the health of individuals, yet gutters and the drainage systems were choked almost all the time, ([www.mfantseman.ghanadistrict.com.gh](http://www.mfantseman.ghanadistrict.com.gh)). The report argued that in Mankesim is no different from that of other coastal communities such as Saltpond and Anomabo, two coastal towns also battling with poor sanitation, especially at their beaches. Anomabo is reported to have been generating 14.4 tons of waste daily as a result of negative environmental attitudes. With only two collecting points in the entire town, residents resort to throwing rubbish indiscriminately. Individuals are not doing anything to increase the number of waste bins or the collection points part explain environmental attitudes as the collection of belief, affection and behavioural intentions a person holds regarding

an environmentally related activity or issue. One idea that runs through the works of the researchers above is that environmental attitude do not just deal with one's feelings either favourably or unfavourably towards the environment alone but also handles one's concern and emotions in connection to an environmental issue or situation and also helps to develop personal skills to solve environmental related problems. Does that mean that the people from these areas and for that matter other part of the country do not have any beliefs or affection towards the environment.

A good and healthy environment is able to encourage and develop peoples mind towards the learning process (Abell and Leaderman, 2007; Newhouse, 1990). These researchers strongly support the submission that surroundings play important role in their daily lives and that the environment needs to be protected and maintained.

Studies elsewhere indicate that problems with environmental attitudes are not Ghanaian. For example, researchers such as (Muammar, 2002; Schultz ,2000) believe 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. Stern and Dietz (1994) support this assertion and add that, a person's attitude towards the environment is based on the relative importance that the person places on him or herself, other people and the natural environment. They further argue that people with different value-orientation will ultimately have different attitudes towards the environment. People must have similar value-orientation by placing much importance on the environment and have an in-depth knowledge that a healthy attitude towards the environment can result in positive attitudinal change in their relation towards the environment which can affect their health and their entire well-being.

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.

Attitudes are learned predisposition to respond either positively or negatively to situations or objects. Hence, in the view of Sprinthall, Sprinthall and *Oja* (1994), attitudes can never be neutral as they have a strong emotional component.

The main characteristics of attitudes are

1. Attitudes are learned from personal experience and its measures are indirect.
2. Attitudes are predispositions.
3. Attitudes have a relationship with behaviour; but the relationship is not necessarily causal
4. Attitudes are consistent. However, this does not necessarily mean that they are permanent; attitudes can change
5. Attitudes are directed towards an object and are very specific reactions to that object. For example, you like 'X' but you don't like 'Y'
6. Attitudes are situationally determined.

Sprinthall, Sprinthall, and Oja, (1994) outlined three major components of attitudes. That is, the ABC of attitudes namely: affective (A), behavioural (B) and cognitive(C). However, Scholl (2002) adds a fourth component as the evaluative component. The affective component consists of a person's feelings or emotions (fear, liking or anger) towards an attitude object which is generally favourable or

unfavourable. This affective component is often the most deep rooted component and the most resistant to change. It manifests in verbal expressions of feelings and physiological changes in an organism (e.g. increase arousal).

The affective component of attitude is measurable while the behavioural (conative) component manifests in actual intentions and actions. It is the tendency to act towards the attitude object in particular ways expressed in terms of what people say they will do. Knowledge, ideas, beliefs and opinions about an object constitute the cognitive component. Cognitions are beliefs, theories, expectancies, cause and effect beliefs and perceptions relative to the focal object. The evaluative component is considered the central component of attitudes. It consists of the imputation of some degree of goodness or badness. Evaluations are function of cognitive, affect and behavioural intentions of the object.

Drawing on the views above, it could be deduced that environmental attitude covers a person's feelings or concerns towards the physical environment which impacts either positively or negatively on humans, depending on how one acts in a situation towards the environment. O'Brien and Mello (2007) provides a more elaborate definition of environmental attitudes as the idea of expressing feeling of appreciation and concern about environmental issues, and further becoming susceptible to develop personal skills to address these issues. This is corroborated by the assertion of Tobin, Tippins, & Gallard, (1994) who view environmental attitude as a learned belief which develops from an individual's belief, knowledge and values about the environment and governs actions to support or sustain the environment.

Studies have shown that gender, greatly affect one's attitude towards the environment (Stern, Dietz and Karloff (1993); Van Liere, Kent, and Riley and Dunlap (1980). The studies showed that females show much more concern towards the

environment than males. According to them males are more interested in economic growth and its stability but cares less about its effect on the environment. Women on the other hand are always conscious of what they do to the environment due to their nature. The Harris (1991) survey also showed that women are more ready to accept lower standard of living in a risk free atmosphere.

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 and Hummels, 1993; Nowell and Tinkler, 1994; Andreoni and Vesterlund, 2001, Eckel and Grassman, 2001; Torgler, 2006). Therefore it is likely that gender may have a link with people's attitude of the environment. It is often argued that gender, tradition, socialization, cultural norms, and women's roles as caregivers and 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.

Dunlap (2008), on the other hand believes that there is a link between gender and education on the issue of environmental, he argues that males show much concern towards the environment than females because they are mostly educated to higher levels than their female counterparts. In the event of considering environmental attitude among people, the combined effect will mean that females in schools will show much more positive attitude towards the environment than males since the level of education will not count. One's attitude towards the environment mostly depends on his or her emotions, perceptions and the concerns developed which is normally

shown towards the environment and environmentally related issues. In general, the attitudes of people towards the environment begin to evolve at very young ages.

Report by [www.washghana.net](http://www.washghana.net), even if enough education is done and positive attitude towards the environment is achieved, and indigenous dwellers are willing to take up sole responsibility of sanitation at the beaches, that might not be the case for holiday makers. Most of these filths find their way into the sea, trapping and killing some fishes; some just occupying space and others cause pollution. This has led to a reduction of fish in it harvest in Ghana and throughout the world.

According to some researchers, to raise a student's awareness on environmentally related information is to develop a positive attitude towards his or her environment. Some researchers think that the participation of people in environmental courses will make an increase in their responsibility of environmental behaviour and cause them to assist in solving environmental problems. Some authors on the other hand, think that a real life experience of people is more effective and it will create the needed attitudes in them and also help them to solve environmental problems (Bradley, Waliczek & Zajicek, 1999; Aydin, 2010).

Marital status has been cited by Scott and Willits (1994) to influence one's environmental attitude to a large extent. He 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 (Scott & Willits, 1994). 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).



Engel and Pötschke (1998) on their part maintain that people's attitudes persist, except when they are changed by forces such as peer pressure. They believe that attitude towards the environment are influenced and determined to a great extent by the way members of the home and the community relate to the environment. For example, the system and practice of environmental problems prevailing in homes are easily transferred to schools. In a lot of schools, particularly, in second cycle institutions, it is a common sight to see people consciously throwing refuse around the school compound. It is therefore imperative that environmental issues are handled with utmost concern in our schools since the school is no doubt a platform for a behavioural and attitudinal change.

Again, Bryant and Hungerford (1997) showed in their study that young people's attitudes towards the environment start to develop at a very early stage. Children acquire knowledge and develop attitudes about environmental issues way back in the kindergarten. Early attitudes and knowledge shape later thinking, and because attitudes do not change easily, there will always be a great need to assess the developing of environmental attitude and knowledge during childhood. It is also known that by the time young people reach adolescence, they have already acquired sufficient level of understanding of environmental issues, such as ecology (Lozzi, 1989). It is thus believed that people' attitude towards the environment is derived from the coming together of beliefs and feelings in some logically consistent way.

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 and Whitehead, 1998; Engel and Potschke, 1998; Witzke and Urfer, 2001; Israel and Levinson, 2004; Veisten, Hoen, Navrud & Strand, 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 (Whitehead, 1991; Blomquist and Whitehead, 1998; Carlson and Johnsson-Stenman, 2000; Hidano, Kato, & Aritomi, 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, Hoban, Van Houtven & Whitehead, 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 so in all cases. The opposite situation does exist in most communities in Ghana, where some residential areas made of both the rich and the poor are seen disposing off refuse indiscriminately despite the availability of litterbins.

Aside from this, an additional factor that complements the economic situation of individuals is their occupational status. Witzke and Urfer (2001) found that some labour groups such as persons engaged in the household or maternity leave had higher environmental preferences. Veisten, Navrud & Strand (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 (Engel and Potschke, 1998; Witzke and Urfer, 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, 199; Carlson and 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 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 and Vlosky, 1999). In this sense, Nord, Luloff, & Bridger, (1998) showed a strong relationship between age and environmental concern.

Similarly, ones place of residence can also be seen as predictor of environmental attitudes. Bell, Greene, Fisher & Baum (2001) and Whynie, (2003) for example found that urban and rural residents in the United State view natural environment differently. Other findings from attitudes in the United State suggest that urban residents are more likely to be environmentally concerned than rural ones (Fiedeldey, Craffert, Van Dijk, & Marais 1998, Lyons and Breakwell 1994) agree that place of residence and academic achievements are related to environmental concerned. 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 environmentally 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. They always show a lot of concern and also behave pro-environmentally. As a result of this, some rural dwellers tend to be more environmental concerned 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 person's perception and view of the environment go a long way to affect how they relate to the environment. Stern and Dietz (1994) agree and add that a person's attitude towards the environment is based on the relative importance that 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.

Some attitudes are formed and shaped by mere exposure to the attitude object. For example, simple exposure to an object increases one's inclinations toward that object. It occurs usually through repeated exposure to advertisements. However, there is a limitation to mere exposure. According to Bomstein (1989) the effect of mere exposure is powerful when it occurs randomly over time.

Direct personal experience also aids in attitude formation. It has the power to create and cause attitude change. For example, an unpleasant experience with the teacher (excessive reprimand) would precipitate an attitude change by the individual

either positively or negatively. Thus, attitudes are expected to change as a function of experience. Norwood and Montano (1985) maintain that attitudes acquired through direct personal experience are likely to be strongly held and affect behaviour.

Another important factor for attitudes acquisition is homogeneity of the attitude objects. For example, same friends, same faces, same ideas, same information and same environment. These tend to be roughly the same. Even if the child is exposed to a new environment, he/she will be selective and this would continue in adulthood (Scholl, 2002).

Many social psychologists believe attitudes are mainly learned. These result from our experiences and interactions with the environment as social beings through the process of socialization. This is defined by Bandura (1972) as “the process whereby individuals develop the qualities essential to function effectively in the society in which they live”. Parents, peers group, work, church, school and mass media are important agencies in the socialization process.

According to Social Psychologist, Bandura, learning simply occurs through observation and imitation of others, particularly parents and the peer group. This comprises watching the rewards and punishments other people reap from their behaviour as well as deducing what kind of behaviour on our part is likely to be viewed positively by them, thus gaining acceptance. For example, children who imitate the expressed attitudes of their parents or friends are more likely to receive positive rewards or reinforcement for that imitation.

Instrumental conditioning is another way attitudes are formed. In instrumental conditioning, the person's behaviour is either strengthened or weakened by means of rewards or punishments. For example, when a child is reinforced for appropriate

attitude through praise or attention, he/she is more likely to repeat and internalize that attitude. Each time the child is rewarded, the attitude becomes stronger.

Personality is important in attitude formation. Peoples' personalities make them susceptible to certain socializing influences and therefore develop certain attitudes. For example, Eysenck (1971) who sees the introvert-extrovert dimension as the most significant in personality assert that introverts are more easily conditioned into learning of social values and attitudes than extroverts. Further, someone who takes a Freudian view of personality would take a view that the superego's internalization of the parents' attitudes and values will predispose a person to identify with certain groups later in life and then internalize their attitudes in turn.

Attitudes are also acquired through classical conditioning. This is a learning process in which a conditioned stimulus is paired with an unconditioned stimulus over long number of trials until the conditioned stimulus alone has the power to elicit a conditioned response (Sprinthall, Sprinthall & OJa, 1994). Thus, if an attitude object is repeatedly paired or associated with a stimulus capable of evoking positive or negative feelings, then the attitude object itself may come to evoke similar feelings.

Apart from environmental influences, genetic or heredity plays a vital role in attitude formation. Eye colouration is mutually determined by genetics with no environmental or learning influences (Tesser, 1993). Height is also based on one's heredity. However, genetics may have indirect effect on our attitudes. Biologically based traits may predispose people to certain behaviours and attitudes. For example, genetic differences with sensory structures such as hearing and taste could affect our preferences for certain types of music and foods (Tesser, 1993)

Most of the research on attitudes revealed that people can have a variety of attitudes such as positive, negative or neutral or both. Recent research reported that

mainstream people's attitudes towards their environment are mixed (Burke & Sutherland, 2004; Johnson, 2001)

From the range of studies discussed here, most reported that people possess positive attitudes or views on their environment (Ali, Mustapha & Jelas, 2006; Dulció & Bakota, 2009; Loreman, Forlin & Sharma, 2007; Ross-Hill, 2009). If people have positive views on their environment, then they value all their environment, whatever their needs, and act accordingly (Whyte, 2005). Ali, Mustapha and Jelas (2006) used a self-rated questionnaire with participants in Asia to measure environmental attitude. Their findings were that overall people had positive attitudes towards their environment and agreed that positive attitude towards the environment intensifies environmental sanitation, while it decreases negative behaviours of degrading the environment. The authors argued for cooperation between government agencies and citizens in order to improve attitude towards the environment.

Similarly, Dulció and Bakota (2009) examined peoples' views by survey and found that people had supportive views towards the environmental sanitation process. In their study Loreman, Forlin & Sharma (2007) compared four countries and the environmental attitudes of their citizens, using a questionnaire and found that people have positive ideas about their environment and its sustainability. Ross-Hill (2009) shared the same view after examining the different attitudes of elementary and secondary school students towards sustainability of the physical environment, and how best to develop a sustainable environment based on these attitudes. The results indicated that most people either supported positive environmental practices in homes or were willing to let others give it a try.

Croll and Moses (2000) investigated people's attitude on environmental sanitation and found that nine out of ten people thought that the positive

environmental attitude was the right way of sustaining the environment. They suggested that pre-existing attitudes and views are fundamental to the implementation and experiences of positive environmental attitudes.

Results of other studies on the other hand, indicate that people have relatively negative attitudes towards their environment. Inhabitants of slums had negative attitudes towards environmental protection or sanitation, (Chhabra, Srivastava and Srivastava, 2010; Lifshitz, Glaubman and Issawi, 2004). Their quantitative study in Sierra Leone showed that some people held somewhat negative attitudes towards their environment. They also found that people felt unprepared to work with environmental agencies to restore or improve environmental sanitation.

Another investigation in Ghana, revealed that existing concerns and attitudes of people about sanitation in communities along Ghana's coast. In their literature review Boer, Piji and Minnaert (2011) stated that the majority of people were undecided or had negative views about their environment, and people did not feel competent or confident to help improve the quality of their environment. They argued that the reasons for the varied attitudes of people were influenced by the participants' gender, experience, and education received on the sustainability of the environment. In most of these studies, respondent were aware of the harm being done to the environment and wanted to change for the better, but wanted it to be implemented by either their local or central government.

Alghazo and Gaad (2004) used a likert scale and semi-structured interviews to measure attitudes of people in relation to their environment and found that people held neutral attitudes. There was a third dimension of findings when two attitudes were present. Meng (2008) examined the attitudes of 252 people in both rural and urban China towards environmental sustainability and found that these attitudes were



a combination of negative, neutral and positive attitudes. The study revealed that people's attitudes could be positive, negative, or indifferent; that is, a proportion of people did not express either positive or negative attitudes. Meng (2004) reasoned that these findings were not similar to western findings because, of western countries' tradition of emphasis on the attitudes of stakeholders. Separate studies undertaken by those participants who had shown negative attitudes in Meng's study also brought to light that, urban people had more positive attitudes towards their environment than rural people, and that people's attitudes were not influenced by resources, education or training. The qualities mentioned by Meng (2004) are qualities that are limited or of little value to most coastal folks whose aims are to go to sea, fish, come back home and trade it for money. Does that mean that these coastal folks, especially those in the Effutu Municipality have no knowledge of their environment they live in or, have little regard for it, resulting in the poor sanitation and other environmental issues they are battling with.

Most authors, researchers and practitioners believed that people's attitudes or views have a huge impact on the improvement of the environment (Leatherman & Nieyemar, 2005; Chhabra, Srivastava & Srivastava, 2010). These attitudes and views are almost all the time highly influenced by experience and knowledge. One can safely deduce from previous and ongoing studies that people's environmental attitudes are essential for the sustainability of the physical environment and sanitation. People were also found to differentiate their attitudes or views according to the type of environment; that is either rural or urban (Glaubman & Lifshitz, 2001; Levins, Bornholt & Lemon, 2005; Mahub, 2008). One vocation in this research was to explore the environmental attitude of people in coastal communities along the Winneba beaches to examine the correspondence with the literature.

## **Environmental behaviour**

Environmental behaviour is regarded as the total action exhibited by mankind towards the improvement of environmental quality (Stern, 2007). 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 (Stern, 2007). Alternatively put, environmental behaviour is described 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.

Environmental behaviour is perceived by some authors as any active responsiveness to current environmental issues believed to be pro- environmental by the person performing the response. This implies a person's active involvement at all levels, working toward resolution of environmental problems. (Ajzen, 1998) Environmental behaviour can also be explained as 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, 2008). A change in behaviour especially in the area of sanitation can bring about a tremendous improvement in the health and lifestyle of people. A survey conducted by Integrated Social Development and Environmental Centre (ISODEC) revealed that the availability and accessibility of to hygienic toilet facility will reduce death caused by diarrhoea in infants by 30% .Constant hand washing

behaviour will reduce both infant and maternal mortality to about 40%.(  
www.mifrihana.com.gh)

Environmental behaviour is also described as a “behaviour that consciously seeks to contribute to positive or negative impact of one’s action on the natural and the built environment”. This therefore means that if a person has positive environmental attitude it might result in the person exhibiting positive behaviour towards the environment. Many environmental problems exist in Ghana due to the environmental behaviour of most Ghanaians, especially those with low standards of living. It may seem that such propositions were outlined in the adoption of The National Sanitation Day was instituted on November 2014 by the ministry of Local Government and Rural Development. By its design, the NSD organized the first Saturday of every month seeks to impress on all citizens to participate in maintaining environment sanitation and to subsequently adopt positive environmental behaviour. Individual participation in this exercise is compulsory. National Sanitation Day was inaugurated to ensure that there are periodical clean up exercise in every part of the country. This according to the waste management experts will help change the behaviour and attitude of Ghanaians towards sanitation in the country. During the commissioning of the 9<sup>th</sup> edition of the programme, the country director of Zoomlion, the national waste management company, Robert Coleman retreated the need for waste management in the country to be a shared responsibility and urged the Ghanaian public to be responsible for the cleaning of their immediate surroundings. A similar article by the Daily Graphic on June 4, 2015 ended with a thought provoking question “Why will people decide to dump waste behind their home, into gutters and in the middle of their neighbourhood knowing very well that a waste truck will come to collect it once they are gathered in the waste bin, could it be that they do

it with intent, is it financial problems or they just do not get the importance of clean environment” (www.graphiconline.com )

Despite the provision of waste bins in communities, some individuals prefer to dump the rubbish around the bin instead of putting it in the containers. This is a behaviour that needs to change in our society with immediate effect. Environmental behaviour serves as an active responsiveness to current environmental issues, believed to be pro-environmental by the person performing the action. Environmental behaviour therefore requires transfer of skills and increase in motivation for one to act in environmentally responsible manner.

Environmental behaviour is viewed as environmental literacy which requires transfer of skills and increase in motivation for one to act in “environmentally responsible” manner. Adopted behaviour by an individual help the him or her to decides consciously to minimize his or her negative impacts on both natural and constructed milieus”. (Jacobson, Duff & Monroe 2006; Kollmus)

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, it implies that 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 a 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 Fishbein (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. As a nation, we need to move from doing things in a primitive way

to a more modern way of doing things. An article was published about the state of drainage systems in the country. According to the news item, apart from the fact that they are poorly constructed, they are few and are left uncovered. Most people take advantage of the situation and dump rubbish in them, causing them to be choked heavily. Most government designated dumping sites are full and the treatment of the waste has become a problem. These fields then turn into breeding grounds for all kinds of germs, rats flies, reptiles and other toxic gasses. People contract all kinds of diseases including malaria, a leading cause of maternal mortality in pregnant women (www.citifmonline.com )

Respectively, if someone perceives behaviour as too complicated (i.e. recycling goods), 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.

### **People's environmental attitude and awareness and its correspondence with their environmental behaviour**

Behaviour is the result of a person's reaction to a situation, group or person. It is a complex and multi-determined construct, in which attitudes are directly linked with our actual actions and behaviours. Thus, a person's attitudes about an object can predict his or her behaviour toward that object. In support, Suneetha (2007) maintains that a dynamic relationship exists between behaviour and attitudes. Generally, people try to keep them consistent with each other; so that if an attitude is changed, behaviour will also alter to correspond.

According to the Attitude-to- Behaviour Process Model, attitudes can guide a person's behaviour even when the person does not actively reflect and deliberate about the attitude (Fazio, Powell & Williams, 1989). For example, how an event or decision is viewed by the subject becomes the main indicator of attitude which eventually leads to a course of action (behaviour). Hence, attitude becomes the main predictor of behaviour.

Two major researches attempt to clarify attitude-behaviour relationships. Fishbein and Ajzen (1974) proved that attitude and behavior are correlated when (a) the observed behaviour is judged to be relevant to the attitude, (b) the attitude and behaviour are observed at comparable levels of specificity, and (c) mediation of the attitude-behaviour relationship by behavioural intentions is taken into account. Similarly, Fazio (1986) showed that attitude and behaviour are correlated when (a) the attitude is based on direct experience with the attitude object, and (b) to the extent that the attitude is cognitively accessible. On the contrary behaviour and attitude are not always consistent. Both attitude and behaviour do not suggest or assure a casual relationship. In the view of Eiser, Bostrom, Burton, Johnston, McClure, Paton, Pligt & White, (2012) if the attitude being assessed is much more specific, the relationship between the attitude and behaviour is consistent. Behaviour is not only determined by attitudes, sometimes external factors also plays a part. For example, the social situation also exerts a great influence. Thus many behaviours taken together reflect a particular attitude. It must be noted that, when behaviour is measured, several attitude subjects can be of influence and the attitude of interest does not especially have to be the most important motivator for behaviour.

The very common waste disposal behaviours of people along coastal communities is open defecation practice, and the 'wrap and throw' method of excreta disposal (Llesanmi, 2006). He adds that this happens when there is no deliberate collection or treatment of the excreta and disposal is largely unregulated; the only similitude of regulation is enforced by people's perception of right or wrong, clean or unclean, and religious or cultural beliefs. These influences in some cultures in African communities make the practice seem quite well regulated and non-problematic. With the dangers associated with exposure to excreted pathogens, these types of systems are a threat to human health and the natural environment. Asares' (2008) study found that out of the 156 respondents, 77.6% did not have access to toilet facilities in their house while 22.4% had toilet facilities in their house and thus resorted to defecating along the beach. The respondents from the traditional housing sector and the tenement sector were not satisfied with the conditions of the public toilets.

Llesanmi (2006) comments on another behaviour where excreta, is simply collected in a chamber out of sight and stored for an indefinite period. An example of this system is the pit latrine and its variants. Although this exists in isolated cases, the advantage of this system is that it is an improvement on the 'do nothing' approach in that it allows the removal and containment of pathogen laden excreta, and has successfully prevented disease in some places. However, its disadvantages are basically similar to those of the 'flush and discharge' system in that it often does not allow for reuse of the nutrients contained in human waste, and is often accompanied by a nuisance of smells, pollution of water sources such as drinking water wells, and groundwater (Llesanmi, 2006). There are also problems associated with installing this technology in densely populated areas as it requires the availability of adequate space. Also areas with high water table, difficult ground and soil conditions, mean that pits

cannot be dug deep, in which case they will fill up too fast and have to be emptied often by hand at great risk to the workers or new ones have to be dug costing money to the home owner. Also installation may increase risk of destabilising foundations of nearby houses especially in densely populated areas.

Improper waste disposal has been found among coastal folks. The use of plastic bags as packages for drinking water and other wares and the proliferation of fast food joints which package cooked food in Styrofoam, and the indiscriminate disposal of these materials in the environment is an eye sore in coastal towns and beaches. The situation with coastal folks are worsened by holiday makers and other visitors who visit the beach and leave behind heaps of rubbish, both disposables and non-disposables. Parts of the beaches in coastal communities are almost always dirty. Open spaces, market places, car parks and many other public and private places are littered with refuse. In most cases, drains are clogged or totally blocked and many compounds are hemmed in by solid waste, posing health threats to children who play and live around the area. Similar facts were found in Asares' (2008) study.

Several efforts have been made by the Metropolitan, Municipal, and District Assembly (MMDA) to ensure that the environment is always clean. It has engaged the services of private waste management companies to ensure that streets are always cleaned and also to ensure that communal dumpsters are emptied regularly. Coupled with these are the provision of new sanitation facilities and the maintenance of old ones. Yet, there seem to be a lot of problems with waste disposal as peoples environmental behaviours are not corresponding with efforts to keep the country out of filth. The behaviour and attitude of the inhabitants towards sanitation do not augment this effort (Lawson, 2014). People do not seem to care about good environmental sanitation practices and constantly litter indiscriminately without



considering the future effects of these poor sanitation practices on their health. Appropriate efforts must be made to halt such practices to save the environment from losing its quality (Lawson 2014).

Poor environmental sanitation of people is a serious health risk and an affront to human dignity. There are many threats of pollution where there are no sanitation systems or where they do not work properly. Individuals and the government dump both liquid and solid waste into sea or ocean forgetting that after polluting species of the sea every one of the debris will be washed back ashore. A study by Asare (2008) revealed differences in sanitation behaviour among the various housing sectors or suburbs. Residents from the traditional housing sector (69.2%) described the environmental sanitation condition in their community as bad. In the overall assessment of the environmental sanitation condition in Enugu, 80.8% of the respondents described the environmental sanitation condition in there as bad. This implies that, more attention must be given to communities with the traditional housing sector in any sanitation improvement projects, since they have poor environmental sanitation condition. Even though the Effutu Municipal Assembly has made great effort in improving the environmental sanitation in Winneba over the years, the sanitation conditions is still not up to expectations.

Other studies conducted revealed that, some households from the high cost housing sector dispose of their waste using unapproved means such as burning of garbage. Respondents from the traditional housing sector (76.9%) expressed desire for the house-to-house waste collection. However, 46.2% of the respondents from the tenement sector who have had the house-to-house waste collection service before and are now using the communal waste disposal indicated that they do not want the house-to-house service because the service providers fail to empty the waste bins on time,

which causes the waste bins to overflow. If these inefficiencies in service provision remain unchecked, it will negatively impact efforts to promote the house-to-house waste collection.

Disposal of domestic waste water has been a challenge to ensuring clean or decent environment. Asare (2008) remarks that people dispose waste water as if it has no impact on the environment. He adds that what makes it a big problem is the poor drainage systems found in some communities. Reporting on this, Asare (2008) wrote that out of the 156 households interviewed, 85.9% did not have access to good drainage (concrete drains) for wastewater disposal while only 14.1% had access to good drains.

In recognition of the importance of sanitation to the objectives of sustainable development which the Brundtland Commission in its 1987 report defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”, the MDG goals on sustainable developments has as one of its targets (goal 7) ‘to reduce by half the proportion of people without sustainable access to safe drinking water and sanitation by 2015’, a laudable ambition no doubt. However, according to the mid-term assessment of progress on reaching the MDGs – ‘Meeting the Millennium Development Goals (MDG) drinking water and sanitation target’, more than 2.6 billion people - over 40 per cent of the world's population - do not have access to basic sanitation and more than one billion people still use unsafe sources of drinking water (WHO, UNEP, 2004).

The majority of these people reportedly live in the developing world particularly in sub-Saharan Africa, in countries with annual per capita incomes as low

as 107 USD (IMF, 2006), where many live on less than one dollar a day, in places rife with poverty and disease.

According to the same report, which details the progress of countries, regions, and the world between 1990 and 2002, sub-Saharan Africa “has the lowest percentage of people with access to basic sanitation facilities – 36%, an increase of just four percent since 1990”. Worldwide only 49% are reported to have access to adequate sanitation facilities in developing countries in comparison with 98% for the developed countries.

The report further asserts that based on the current pace of advancements, global sanitation targets will be missed by about “half a billion people - most of them in Africa and Asia - allowing waste and disease to spread, killing millions of children and leaving millions more on the brink of survival” (WHO,UNEP, 2004). The argument is that environmental attitudes and behaviours may not change, significantly in the next decades without effective investment.

Even if the conventional sanitation approach worked in developing countries, the challenge of meeting the sanitation target of the MDG goal 7 requires providing adequate sanitation access to an estimated 95,000 people per day worldwide (Rockström, Steffen, Noone, Persson, Lambine & Lenton 2005), this of course requires huge amounts of investment if conventional sanitation is considered. Simply put, for most developing countries installing conventional sanitation means debt, more debt than they already have and certainly more than they can afford. It means paying great prices for systems that are almost bound to fail or that at best will not be sustainable in the long term due to costs among a variety of factors. The implication of this is that eventually more people will lack access to sanitation with even greater

negative impact on human and environmental health as populations grow and untreated wastewater is discharged into the environment.

For the rural and urban poor who often lack services and have to rely on water sources (rivers and streams) that serve as sinks for wastewater and also drinking spot for livestock, the consequences are potentially disastrous – ill health, inhibited productivity or inability to work and consequent poverty. There is a cycle in motion in the lives of the urban poor. They are poor so they live in unhealthy conditions (slums and squatter settlements) and get sick and being sick means they cannot work to earn enough to improve their living conditions or move to better places as such they remain poor and in these environments. All their lives, many never break out of the grip of poverty. To people in this situation sustainable development remains an incomprehensible and unrealistic concept.

Laws governing the various environmental resources should be enforced. Offenders should be severely punished in order to deter others from breaking these sanitation laws. An article written by Ghanaian environmental journalist, Kweku Darko Ankrah, on June 8 2015. This article which is titled filthy coast for tourist. According to him there should be the “enactment and enforcement of laws, regulation, institution of permits and license to monitor polluters’. He goes on further to state that practical actions or mechanism in the form of voluntary ways and means that will not require substantial public expenditure should be implemented. This is the only way in which sanitation and its sustainability can be ensured. World Sanitation Day, National Sanitation Day and other days that have been dedicated to the environment and sanitation should be hyped and well celebrated with a series of programmes lined to educate to the general public.

## **Conceptual Framework**

Conceptual framework is the basic structure from which concept or theory is built or formulated, (Ajzen, 1985). This means that conceptual framework is assumption on which principles and rules regarding theories are structured. In this research I am associated with studies conducted by Dunlap and Van Lier (1981), which suggest a relationship between environmental attitude and environmental behaviour. These two concepts are somehow related but are not the same (Dunlap and Van Lier, 1981). Attitude refers to a hypothetical construct about a mental state which is inferred from a verbal report and behavioural observation while behaviour is usually influenced by the norm of his or her society.

The norms in this context refer to the culture, values and social morals. The norm of a society tends to affect or influence a person's judgment or way of thinking, this means that social morals, values and culture have a way of affecting how a person comply to certain beliefs in their environment. (Stuzman & Green,1982)

This conceptual framework is an adaptation of theory of planned behaviour by Ajzen (1985). The theory of planned behaviour explains how behaviour tends to influence people beyond their control. This implies that the product of attitude which is usually behaviour does not always follow a particular pattern, in other words, just because a person's attitude is geared towards a certain concept does not mean that their behaviour will follow. This does explain why upon interaction with the coastal folks, one can deduce that they are aware of the dangers of throwing waste at unapproved places but still do it.

Environmental behaviour is influenced by a wide range of factors, ranging from social values and morals which form the norms of every society. This means that

factual knowledge which is acquired through sensitization programmes only plays a partial role (that is if it is taught properly) in influencing the attitudes of people which then manifest in the actual behaviour of the people.

Low or poor environmental awareness attitude, attitude refers to a hypothetical construct about a mental state which is inferred from a verbal report and behavioural observation. In other words attitude is a thought or an idea that an individual has about a concept, be it positive or negative. These thought or ideas go a long way to manifest in the actions or behaviours of individuals. It therefore means that if an individual has a positive attitude towards the environment, it will reflect on how well that individual nurtures or treat the environment

### **Factors influencing environmental attitude and behaviours**

The literature examines two main factors that influence environmental attitudes and behaviours. Those factors are examined in this section of the literature review.

### **Illiteracy and ignorance**

Illiteracy in this context refers to the absence of formal education among the population from which the study is being under taken. This has one way or the other limited their way of seeing things and also accessibility to modern information pertaining to both local and foreign environmental issues. They may not have adequate knowledge of the environment, hence the environmental consequences of their actions on their immediate environment and the globe as a whole. Even though ignorance is not an excuse, their somehow primitive actions are not only causing

outbreak of disease but also has negative effect on revenue generation accrued from tourism.

### **Social morals and values**

Social morals and value here refers to the norms upheld by the coastal folks. These norms include their beliefs, culture and traditions. These norms are the embodiment of a society and most of the time defines the individuals of the society. If the norm of a society is hostile to environment the indigenes will have hostile attitude and behaviours towards the environment. Since attitude is formed and passed from generation to generation, whatever views they hold about the environment has become a part of them and will be passed on to the next generation. Does this therefore explain the reason why the beaches are engulfed with degradable and non-degradable waste?

The knowledge one has about a concept reflects on the person's actions and reactions towards that particular concept. In the same way the limited knowledge these coastal folks have about their environment can mainly be blamed for the way and manner they treat their environment.

Factual knowledge is the scientific proven fact that is free of societal or cultural sentiments. Factual knowledge is usually acquired through formal education and it is no secret that the level of education of the coastal folks around these parts of the world is very low. This according to Obeng (2005) has a great influence on their attitude and behaviour. The question is can this be a part of the reason why instead dumping refuse at approved dumping sites, they rather dump them into the sea?

This chapter explored various literature on the concept of environment, environmental awareness and factors underlining environmental attitudes and

behaviours. It argued that studies reported environmental attitude and behaviours among coastal communities is mainly negative due to illiteracy and ignorance on one hand and social morals and values on the other, using the theory of planned behaviour this work is framed within a thinking and theorization which argues that environment attitude and behaviour are constants that are demonstrated in how people dispose off waste and live with them. In the next chapter, I explained the methodological approaches to the research.





## **CHAPTER THREE**

### **METHODOLOGY**

**4.1** This chapter describes the strategy that was used by the researcher to conduct the research. It includes the following; research design, sampling and sampling procedures, description of research instruments, data collections procedures and data analysis procedures.

#### **4.2 Research Approach**

There are three main approaches or methods to conduct educational research: qualitative methods, quantitative methods, and mixed methods (Creswell, 2003). The study is essentially quantitative. Quantitative research methods, as explained by Creswell 2003) is a formal, objective and systematic process in which numerical data are used to obtain information about a topic, event or situation. It is used to describe variables, examine relationships among variables, and determine cause-and-effect interactions between variables It thus, a formal, objective, and systematic process for obtaining quantifiable data about the world which is presented in numerical form, and analysed by using statistics in order to describe and test relationships. Simply put, quantitative research method is concerned with numbers, statistics, and the relationships between events and numbers.

Quantitative methods (questionnaire) tend to be relatively low in cost and time requirements since they enable a large quantity of relevant data to be obtained

and analyzed within a limited time, the qualitative (interview guide and observation guide) analysis on the other hand is time consuming and it is expensive, but will also offers in-depth and useful insights. The use of quantitative method (questionnaire) may limit the range of possible responses and as such, not delve deep into issues hence, the use of the mixed method. As it has been stated earlier, this study is mostly quantitative but will use a bit of observation and interviews to add a more in dept and useful insight into the study.

### **4.3 Research design**

The study was designed and conducted as a descriptive survey. The descriptive survey research design was used because it produces a good number of responses from numerous people at a time, provides a meaningful picture of events and seeks to explain people's perception and behaviour on the basis of information obtained at a point in time. This means that the use of this particular design is selected especially when inferences are made about attitude and behaviour of a people. In the words of Creswell (2009) descriptive survey "provides a quantitative or numeric description of trends, attitudes or opinion of a population". Descriptive survey as a design is fit for this study because, as mentioned earlier, the study seeks to describe in detail or give a picture of the environmental attitudes and behaviours of the people of the coastal part of Effutu Municipality.

Since the main focus of the study was to investigate the environmental attitudes and behaviours of the people in order to determine their reasons for attending to sanitary issues, the way they are attending to it currently, especially in the wake of numerous environmental programmes and sensitization coupled with the outbreak of numerous diseases. To this effect, the researcher thought it wise to use the descriptive

survey. Descriptive survey designs can be used with greater confidence with regards to particular questions which were of special interest and value to researchers. Hence, it produces a good number of responses from numerous people. Since it was a survey, the quantitative research method as stated earlier will be used to collect the data for the analyses of this study.

#### **4.4 Population**

Agyedu, Donkor & Obeng (2010) describe research population as the complete set of individuals, subjects, objects or events with common observable features for which a researcher is interested in studying. In other words, population is the larger subject or events from which selected respondents or objects of interest are chosen for a study. It is also regarded as the larger group from which individuals are selected to participate in a study. Similarly, Phillips (2009) define research population as all people, objects or events found in a particular group a researcher is planning to generalise (p. 83). This implies that research population is the larger group of many cases from which a researcher draws a sample and uses for data collection.

#### **4.5 Study Area**

The population of the study comprised of three (3) fishing communities in the municipality. These fishing communities share direct border with one another and the sea. They are; Sankor to the extreme west, followed by Yepimso and Akosua Village to the extreme east. The population of people living in these communities are presented below based on statistics from GSS (2012).

## Names of the three fishing communities

Settlement	Population
<b>Sankor</b>	800
<b>Akosua Village</b>	450
<b>Yepimso</b>	900

#### 4.6 Sample and sampling techniques

One hundred and fifty (150) respondents were used in the study. This number comprised of men and women above the age of ten who are inhabitants in the selected communities and have stayed in the community for more than a year. This was done to help select respondents who had enough knowledge of the community, in order to provide relevant and well informed responses for the study. The respondents were selected using opportunistic sampling. Opportunistic sampling, also known as emergent sampling is a non-probabilistic sampling technique where sampling decisions are made in the process of data collection. Even though this sampling design is mostly used in the qualitative research, the researcher decided to go with it essentially because not all who are seen at the beach are indigenes or have stayed there for more than one year. It also happens to be a flexible research and sampling design (Oyetunji, 2006; Phillips, 2009). In practice participants were selected based on availability and willingness to participate in the research. There was no discrimination based on gender as well as educational level. However it was restricted to people living along the beach.

#### **4.7 Data collection tools**

The data collection methods that were employed were mostly quantitative and a bit of qualitative (interview and observation) in nature. Questionnaires, observation guide and interview guide were the main tools used for collection of data for the study. A questionnaire is a written instrument that contains a series of questions or statements called items that attempt to collect information on a particular topic (Agyedu, Donkor & Obeng, 2011). Questionnaires were used because according to Johnson and Christensen (2014) it is a self-report-data collection instrument filled out by each research participant for a research study to obtain information about thoughts, feelings, attitudes, beliefs, values, perceptions, personality, and behavioural intentions of research participants (Johnson and Christensen, 2014:162-163 and Kothari, 2004). It is very suitable for this study because it covers a wide range of topics within a short period. The items on the data collection instrument (sheets) i.e. questionnaire, observation guide and interview guide were linked to the appropriate research questions and have been presented accordingly. The themes for the questionnaire were chosen in accordance with the research question, that is, the environmental awareness, attitudes and behaviours of coastal folks in the three fishing communities. During the administration of the questionnaires, the respondents who were not in the position to read and write had it translated for them.

The following questionnaires were administered to collect necessary data for this study. They are: environmental attitude scale, environmental awareness scale, environmental behaviour scale. These Likert-type scales were filled with series of questionnaires covering the themes that were used to review literature in the second chapter. The data obtained from these scales were analyzed and organized in frequency tables, bar and pie charts

#### **4.8 Environmental attitude scale**

Attitudes scale is considered as a construct of hypothetical mental thought which influence varieties of verbal statements. This implies that no single verbal statement yields a particularly good measure of attitude but a number of items in a scale will give an overview of the object, or subject of interest of the study.

Environmental attitude is also described as the kind of scale that reduces an individual's perception of the environment into a single quantitative score. This study has adapted the Environmental Attitude for University Scale and modified it. Environmental Attitude for University Scale (EAU) represents a popular format for a Likert-type scale. Respondents are asked to write down X in one of the boxes which consist of five possible responses: Strongly agree, Agree, Indifferent, Disagree, and Strongly disagree. Agreement response anchors are quite versatile and are the most popular. Items can be written to assess many different types of variables, including attitudes (Spector, 1992: 20). Agreement response choices are usually bipolar. Respondents are asked to indicate whether they agree or disagree with each item, as well as the magnitude of their agreement or disagreement. This evaluative, favorable or unfavorable response can best be represented by a like– dislike continuum, and therefore, the intensity of an attitude would be its location to the right or left from the neutral midpoint on the continuum (Abdel-Gaid, Trueblood, & Shrigley, 1986).

#### **4.9 Environmental awareness scale**

Environmental awareness (Knowledge) Test which seeks to determine the extent of attainment of the cognitive objectives of Environmental awareness was adapted. It comprises of 29 items, which demands "True or False" responses. The "True or False" test items forms a predominant part of the questionnaire because it

enables the researcher obtain quickly, information from a large sample. It also makes scoring and interpretation of results easier than the free-response tests. In deciding to use this type of test construction, consideration was given to the time demand on the researcher. The free-response test, though creates room for respondents to express their own views, Godin & Sproul (1988) observed that it could create respondents' resentment about the task, which creates invalid response. The EAT based mostly on the content and objectives of the Environmental Studies Syllabus. Fifty test items were given to two experienced ES lecturers to determine items' suitability for measuring the cognitive objectives of ES. They also screened the items for clarity of wording and presentation. Items that were identified as ambiguous were reconstructed and those declared unsuitable was be deleted. To ensure an adequate level of test reliability, many test items were developed to cover all major topics about the environment.

## **5.0 Environmental behaviour scale**

Environmental Behaviour Scale was developed by the researcher. The environmental behaviour scale comes in the form of categorical Likert-type scale. It was filled with series of items or questions covering people's behaviour towards the environment. These items or questions describe the individual's behaviour towards the environment in a single quantitative score. Each item is followed by five possible responses; strongly agree, agree, indifferent, disagree and strongly disagree.

## **5.1 Observation**

The type of observation that was used to gather data for this study was non participant observation which enabled the researcher to obtain information relevant to

this study (Creswell, 2009). As the researcher studies them in context, their views and impressions related to the research questions were observed.

## **5.2 Reliability**

The reliability of the instruments was determined using SPSS v 16. Cronbachs alpha was used with a reliability coefficient of 0.6.

## **5.3 Data collection procedure**

The collection of data was completed within a period of four (4) weeks. The duration for the collection of data lasted longer than anticipated, because a majority of the respondents could neither read nor write, so the items had to be interpreted to them in the local language ie Effutu and Fanste Before the commencement of the data collection, community leaders, mainly the assembly representatives commonly referred to as assembly men were contacted and told of the intent of the study. In cases where respondents could not read and write I explained the questions and the options for them to select. Each of the items was explained to the respondents before they were asked to respond to them independently.

## **5.4 Data Processing and Analysis**

The quantitative data obtained from the questionnaire were coded to enhance easy identification, and then scored before entering them into the computer after which the computer programmed it using SPSS, Version 16. The SPSS was used to analyze the responses from the questionnaire to generate a descriptive picture of the data obtained on the various themes (Johnson and Christensen, 2014). With the quantitative analysis, descriptive statistics such as frequency, simple percentages,



standard deviation and mean were used to analyze the data to give quick visual impressions on values and help in the discussion and interpretation of the data.



## CHAPTER FOUR

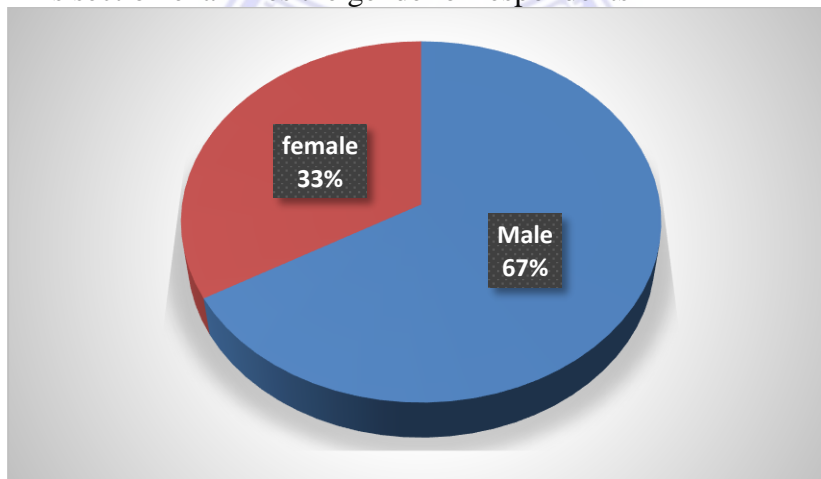
### RESULTS AND FINDINGS

#### 1.0 Introduction

The general objective of this work was to explore the environmental awareness, attitude and behaviours of the people living along the coast of Winneba. This chapter presents data collected from the respondents in the field. The main tools used for the collection of these data were questionnaires interview guide and observation guide. Six (6) participants were selected for the interview session and this comprised of two elders or opinion leaders, two assemblymen, and two fishermen, each from the three communities along the beach. The interview data covered an array of questions reflecting themes in accordance with the research question, that is, the environmental awareness, attitude and behaviour of coastal folks in the three communities. The participants for the interview were classified as Participant 1 (P1), Participant 2 (P2), and Opinion leader 1(OL)

#### Preliminary analysis

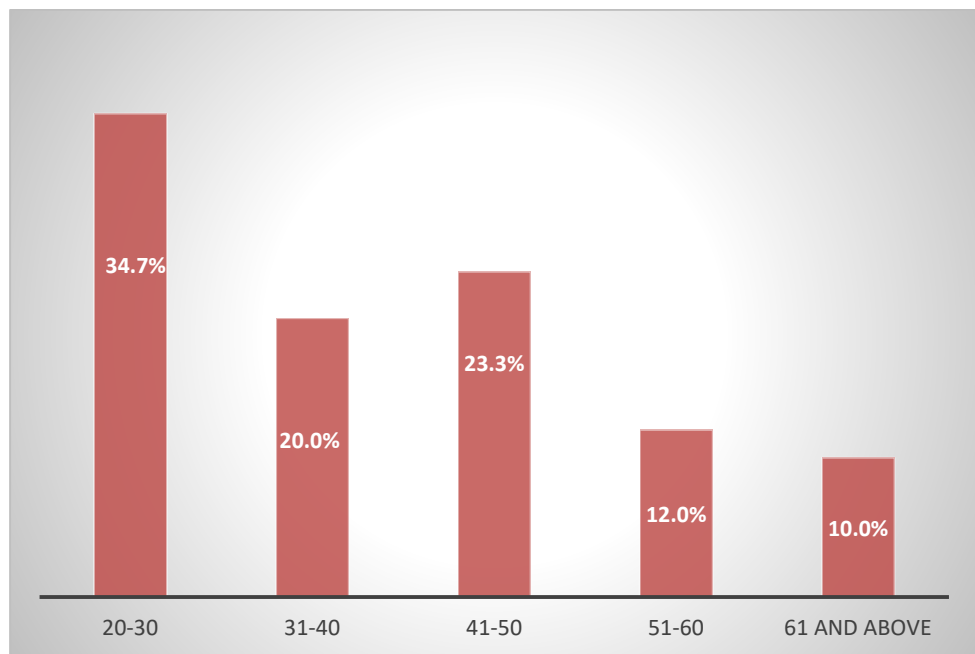
This section examines the gender of respondents



*Source: Field data, 2015*

**Figure 4.1 Sex distribution of respondents**

From the output shown in fig. 4.1, it can be deduced that out of the one hundred and fifty (150) respondents that were sampled for the study, representing sixty seven percents (67%) were females and males representing thirty three percents (33). The number of males who participated in the study were more than the number of females. That was not intended but rather that women were mainly concerned about the time they would have to invest in the study than men.

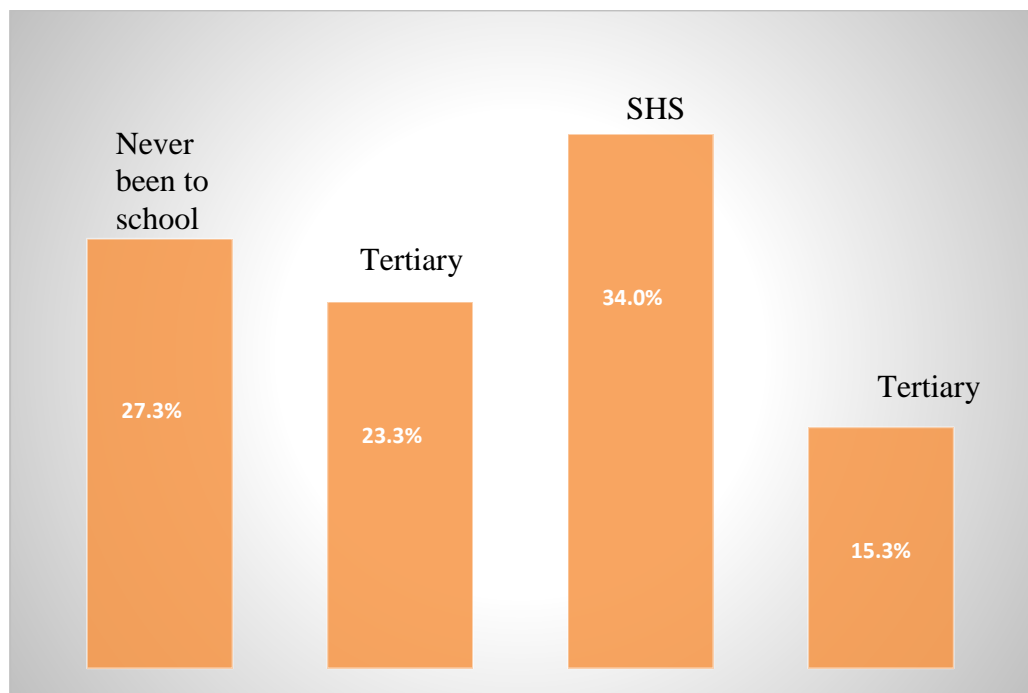


**Figure 4.2 Distribution showing age of respondents**

*Source: Field data, 2015*

The age distribution of the respondents (fig. 4.2) shows that fifty two (52) of them, representing thirty four percents (34.7%) of the respondents were between the ages of twenty and thirty (20-30). Fifteen (15) representing ten percents (10.0%) fell within the ages of sixty one (61) and above years. This shows that the number of

young coastal folks who participated in the study were more than the old folks. My observation revealed that it was off season for fishing and because of that, most of these young folks had returned home from where they usually work during the peak season.

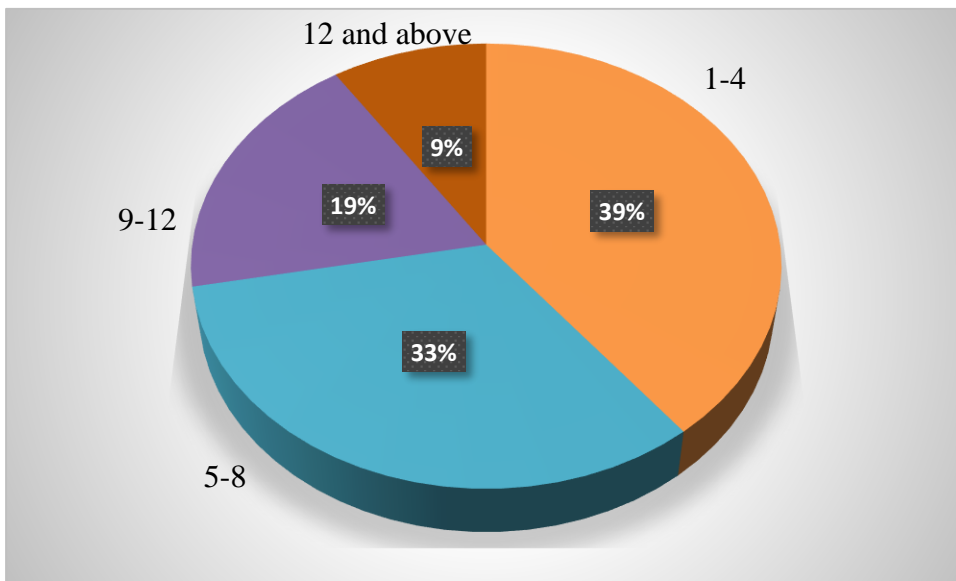


**Figure 4.3 Distribution showing educational level of respondents**

*Source: Field data, 2015*

From the fig. 4.3, it can be observed that, a majority of 51(34.0%) had completed senior high or middle school as their highest level of education, while 23.3(15.3%) had tertiary as their highest level of education. It can also be observed from the figure that 41 (27.3%) respondents have never attended school or had any formal education. My observation on the field as I administered the questionnaire indicated that the information provided by the respondents with regards to their

educational background was highly exaggerated. For instance, a number of them who said they had completed middle school could barely read a word on the sheet. Two respondents actually turned the questionnaire upside down.



**Figure 4.4 Distribution showing the number of years lived in the community**

*Source: Field data, 2015*

Out of the 150 respondents that participated in the survey, fifty nine 59 (39) had lived in the community for the period between one to four (1-4) years, 49 (33%) had lived in the community for the period between 5-8 years, 28 (19.7%) had stayed for 9-12 years whiles 14 (9.3%) had lived for more than 12 years and above respectively. The figures imply that the older folks who took part in the study were few as compared to the younger ones who were involved.

**Table 4.1 Distribution showing the type of housing units occupied by respondents**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
<b>Compound house</b>	72	48.0
<b>Detached house</b>	48	32.0
<b>Semi-detached house</b>	30	20.0
<b>Total</b>	150	100

*Source: Field data, 2015*

From table 4.1, it can be concluded that 72 (48%) respondents lived in compound houses. Forty eight (32.0%) of them live in detached houses whereas 30 (20%) live in Semi-detached houses respectively.

**Table 4.2 Distribution showing the kind of toilet facilities available in your houses**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
<b>Water Closet</b>	66	44.0
<b>KVIP</b>	50	33.3
<b>Pit latrine</b>	26	17.3
<b>Free range</b>	8	5.3
<b>Total</b>	150	100.0

*Source: Field data, 2015*

It can be observed from the above table that 66 (44%) said they have water closet in their houses. Fifty (33.3%) of the respondents stated they have KVIP. Twenty six of them (17.3%) stated that they used Pit latrine whereas 8 (5.3%) of them use free range toilet facility. These answers by the respondents is somehow contradictory to the 2010 housing and population census result publication, that stated that of all the housing facilities in the coastal part of the country (coastal slums, to be specific) less than twenty percent (20%) are equipped with toilet facilities, (Ghana statistical service, 2010). Most of these folks resort to the few over used public toilets and the sea shore for nature's call. From my observation as I moved from compound to compound, most of the houses did not even have bathrooms. The few houses with bathrooms had it situated outside the buildings, and it was patronized by more than three houses. I therefore think the response given by the respondents in this particular item is another exaggeration.

### **Environmental awareness scale**

**Table 4.3 Distribution table showing responses given by respondent with regards to the environmental awareness scale**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	89	59.3		
Agree	50	33.3		
Indifference	8	5.3	1.50	0.693
Strongly Disagree	3	2.0		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.3 above shows that as many as 89 (59.3%) respondents strongly agreed that they are concerned about the environment because of the consequence on health and global warming whereas 3 (2.0%) strongly disagreed. The mean and standard deviation for the distribution are 1.50 and 0.693 respectively. Thus, it can be said that majority of the respondents in the survey are concerned about the environment

**Table 4.4 Shows the response from the item; distribution of raw sewage disposed into the sea adversely affects marine life.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	78	52.0	1.83	1.067
Agree	35	23.3		
Indifference	29	19.3		
Strongly Disagree	1	0.7		
Disagree	7	4.7		
Total	150	100		

*Source: Field data, 2015*

Table 4.4 shows the respondents response regarding their views on throwing of sewage in the sea. Seventy eight (52.0%) of the respondents strongly agreed that raw sewage disposed into the sea have adverse effects on marine life, with a mean and standard deviation of 1.83 and 1.067 respectively. The table also indicate that seven 7 (4.7%) disagreed that disposal of raw sewage into the sea affects marine life. This is an indication of the awareness of the coastal folks in relation to the dangers involved in using the sea as a dumping site and it effect on marine life.



**Table 4.5 Showing the response to the item, of stagnant water can breed mosquitoes**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	101	67.3	1.33	0.471
Agree	49	32.7		
Indifference	0	0.0		
Strongly Disagree	0	0.0		
Disagree	0	0.0		
<b>Total</b>	<b>150</b>	<b>100</b>		

*Source: Field data, 2015*

Table 4.5 indicates that as many as 101 (67.3%) of the respondents strongly agree that stagnant water can breed mosquitoes, with the mean and standard deviation of 1.33 and 0.471 respectively. This is an indication of their awareness of the fact that, stagnant water is a breeding ground for mosquitoes. Even though the figures in 4.2.3 suggest that they are aware of the effects of stagnant water, in reality, there are stagnant water almost at every house I entered. I also observed that the stagnant water mostly from gutters were filled with filth

**Table 4.6 shows response from the item; Pollution of our environment can affect global climate**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	80	53.3		
Agree	64	42.7		
Indifference	3	2.0	1.53	0.642
Strongly Disagree	3	2.0		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

The above table exhibit responses from the item, pollution of our environment can affect global climate. As many as 64 (42.7%) agreed that pollution of the environment can affect global warming. Three 3 (2.0%) of the respondents disagreed. A majority of 80 (53.3%) of the respondents strongly agreed that pollution of our environment can affect global climate. The mean for this item is 1.53 with a standard deviation of 0.642. Based on the responses it can be concluded that most of the respondents have acknowledged that pollution of our environment can affect global climate.

**Table 4.7 below shows the responses to the item, protecting the environment will help individuals to enjoy a quality life**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	73	48.7		
Agree	61	40.7		
Indifference	3	2.0	1.75	0.998
Strongly Disagree	7	4.6		
Disagree	6	4.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.7 reports that 73 (48.7%) strongly agreed that protecting the environment will help enjoy a quality life, with the mean and standard deviation of 1.75 and 0.998 respectively. However, 6 (4.0%) of the one hundred and fifty respondents disagreed that protecting the environment will help individuals to enjoy quality life, whereas 3 (2.0%) of them showed indifference towards the item. It can be concluded that, more than half of those surveyed agreed that protecting the environment can help an individual to enjoy quality life.

**Table 4.8 our actions in our communities can put some plant and animal species into extinction some time to come**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	66	44.0		
Agree	64	42.6		
Indifference	10	6.7	1.82	1.024
Strongly Disagree	1	0.7		
Disagree	9	6.0		
Total	150	100		

*Source: Field data, 2015*

Out of the total number of 150 respondents, 64 (42.6%) respondents agreed that our actions in our communities can put some plant and animal species into extinction in the future whiles 9 (6.0%) of them disagreed. It can also be inferred from the same table that ten 10 (6.7%) of the respondents showed indifference to the item, our actions in our communities can put some plant and animal species into extinction in the future. The mean and standard deviation for the distribution are 1.82 and 1.024 respectively. From Table 4.8, it can be concluded that a majority of the coastal folks who took part in the survey acknowledged that our actions in communities can put some plant and animal species into extinction in the near future. As I moved from one respondent to the other, I observed that fire wood is the main source of fuel for these people and it has been like that for centuries. What I found contradictory was that based on figures in the table or evidence on the ground, they are fully aware that that

their actions (lumbering of logs or firewood) can put some plant species into extinction, why then do they continue to do it, if they know of the dangers involved.

**Table 4.9 whether respondents are aware of environmental issues**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	53	35.3		
Agree	70	46.7		
Indifference	7	4.7	2.05	1.186
Strongly Disagree	6	4.0		
Disagree	14	9.3		
Total	150	100		

*Source: Field data, 2015*

In answering the question as to whether respondents are aware of environmental issues, 70 (46.7%) agreed that they were aware of environmental issues whereas a minority of 14 (9.3%) disagreed. Seven 7 (4.7%) of the people showed indifference. The mean and standard deviation for the distribution were 2.05 and 1.186 respectively. This show that majority of the respondents who participated in the answering of the questionnaire attested that they were aware of environmental issues.

**Table 4.9 Distribution showing whether it is important to save green trees and vegetation**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	97	64.7		
Agree	52	34.6		
Indifference	0	0.0	1.37	0.523
Strongly Disagree	1	0.7		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.9 revealed that out of 97 (64.7%) of the respondents strongly agreed that it is important to save green trees and vegetation while 1 (0.7%) of them disagreed. The mean and standard deviation for this item are 1.37 and 0.523 in that order. This indicates that majority of the respondents were of the view that it is important to save green trees and vegetation. Ninety seven (64.7%) respondents strongly agreed that it is important to save green trees and vegetations. Based on my observation, almost every household I visited used firewood as their main source of fuel, both for cooking and for smoking of fish. The handful that did not depend solely on fire wood augmented it with charcoal. In reality their actions are depleting the few forest reserves in the region rather than saving it. The findings from this study have indicated that most respondents understand that poor sanitary condition is a problem in their community. In establishing the level of environmental awareness, one of the themes for the interview was, if they have been exposed to any environmental sensitization programmes, this was said:

“We have been seeing the green lorry from the Assembly (information van) they come here once in a while and talk, talk, talk in English and sometimes in Fantse. No one speaks to us in the Effutu language. (The language they understand and communicate in). (OL) and 2(OL)

Another shared that If there had been periodic meetings with us to teach us why it is not good to defecate into our natural sea, we would with time come to learn and understand why we have to desist from using the sea shore. P1, P3 and P4

It is the environmental sanitation department of the municipal council who are dirty. They don't keep our surrounding clean at all. Days will pass and the bin will be there unattended to. I am aware of the need to be a clean person. I wash my cloth when they get dirty, sweep my environment every morning, and wash my utensils. P2 and P4.

According to 1(OL) and 2 (OL), they have been seeing the information Van, it usually comes round to educate them. Communication is done in English and Fantse so there is a language barrier. They blame the Municipal Assembly for their dirty surroundings.

Some of the participants interviewed expressed the need to keep their environment clean for safe living. From their statements, they made it clear that without safe and clean environment it was going to be difficult to enjoy living in the communities. The following statements were expressed.

There hasn't been anybody to tell us here what we are doing is wrong. Even what we are doing is wrong we should be made to understand why it is wrong and must be stopped. Over several years this is how our community has been, nobody to teach you

good or bad so if you don't learn by yourself nobody will teach you. P3 and P6.”

P3

and P6 claim that no one has interacted with them to show them their right from wrong

### **Environmental attitude**

**Table 4.1 Showing environmental education for people cannot help to resolve environmental problems, only technology can**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	0	0.0		
Agree	51	34.0		
Indifference	2	1.3	1.50	0.825
Strongly Disagree	92	61.3		
Disagree	5	3.3		
Total	150	100		

*Source: Field data, 2015*

Table 4.1 indicates that a higher number of ninety two (92) representing 61.3% of the respondents strongly disagreed that environmental education for people cannot help to resolve environmental problems, only technology can, whiles fifty one (51) making 34.0% of them agreed that environmental education for people cannot help. Two (2) making a percentage of 1.3 of the respondents were of the view that it is not important to educate people about the environment. The mean and standard deviation of this particular item are 1.50 and 0.825 respectively. The results above



suggest that the coastal folks of Effutu Municipality believe that environmental education should be fused with modern technology.

**Table 4.2 Shows ‘the progress of a district should not be held up for the sake protecting endangered birds’**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	66	44.0		
Agree	67	44.7		
Indifference	11	7.3	1.73	0.815
Strongly Disagree	4	2.7		
Disagree	2	1.3		
Total	150	100		

*Source: Field data, 2015*

The data in Table 4.2 indicate that out of the 150 respondents surveyed, Majority of them sixty seven (67) making a percentage of 44.7 agreed that the progress of a district should not be held up with the excuse of protecting endangered birds whiles four (4) making a percentage of 2.7 disagreed. Eleven of the respondent (11) making a percentage of 7.3% ticked indifference while four (4) and two (2) strongly disagreed and agreed respectively, that the progress of a district should be held up for the sake of protecting endangered birds. The mean and standard deviation for the distribution are 1.73 and 0.815 in that order. Out of the one hundred and fifty respondents who were involved in the study over sixty (60) of agreed that no developmental project should put on hold for the protection of extinct bird species.

**Table 4.3 Distribution showing I believe that information is increasingly necessary to be aware of the effects our actions have on the environment.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	79	52.7		
Agree	54	36.0		
Indifference	4	2.7	1.74	1.083
Strongly Disagree	3	2.0		
Disagree	10	6.6		
Total	150	100		

*Source: Field data, 2015*

Table 4.3 show that as many as seventy nine (79) representing 52.7% of the respondents agreed that information is increasingly necessary to be aware of the effects our actions have on the environment whiles seven (10) representing 6.6% of them disagreed. It can also be observed from the table above that the mean and standard deviation are 1.74 and 1.083 respectively. This confirms that more environmental education should be done for people to be aware of the effects their actions have on the environment.

**Table 4.4 Showing the laws and government regulate and control so much that there is very little contamination these days.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	3	2.0		
Agree	48	32.0		
Indifference	13	8.7	1.90	1.197
Strongly Disagree	73	48.6		
Disagree	13	8.7		
Total	150	100		

*Source: Field data, 2015*

The table 4.4 above portrays that majority of the respondents totalling seventy three (73) making a percentage of 48.6 strongly disagreed that laws and government regulate and control so much that there is very little contamination these days whereas forty eight (48) totaling 32.0% of them agreed. From the table, the mean and standard deviation for the distribution are 1.90 and 1.197 in that order. This is an indication that despite the laws and government regulates and control, there are contamination the system.

**Table 4.5 Show the benefits of modern consumer products are more important than the contamination caused by their production and use.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	13	8.7		
Agree	3	2.0		
Indifference	14	9.3	1.98	0.986
Strongly Disagree	52	34.7		
Disagree	68	45.3		
Total	150	100		

*Source: Field data, 2015*

From table 4.5, sixty eight (68) respondents out of the total respondents of 150 representing 45.3% disagreed that the benefits of modern consumer products are more important than the contamination caused by their production and use whiles three (3) representing 2.0% of them agreed. A majority of sixty eight (68) totaling 45.3% disagreed. However, the standard deviation and the mean for the distribution are 1.98 and 0.986 in that order. This is attesting to the fact that the coastal folks are of the view that the benefits of modern consumer products are not important than the contamination caused by their production and use.

**Table 4.6 Show the item, in my opinion, the more people know about the natural environment, the better their attitude towards it.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	62	41.3		
Agree	71	47.3		
Indifference	9	6.0	1.77	0.860
Strongly Disagree	5	3.3		
Disagree	3	2.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.6 shows that out of the total hundred and fifty (150) that were respondents surveyed, seventy one (71) totaling 47.3% agreed that the more people know about the natural environment, the better their attitude towards it whereas five (5) totaling 3.3% strongly disagreed. Seventy one (71) respondents, representing a high percentage of 47.3 agreed while three (3) representing 2.0 disagreed, leaving nine (9) respondents in the position of indifference. The mean and standard deviation for this distribution are 1.77 and 0.860. These figures confirm that the people believe that the more you know about the natural environment, the better your attitude towards it.

**Table 4.7 Showing environmental education activities are only useful for children.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	30	20.0		
Agree	25	16.6		
Indifference	13	8.7	2.67	1.509
Strongly Disagree	48	32.0		
Disagree	34	22.7		
Total	150	100		

*Source: Field data, 2015*

Table 4.7 shows that as many as forty eight (48) representing 32.0% of the respondents strongly disagreed that environmental education activities are only useful for children while 25 (16.6%) of them agreed. The mean and standard deviation for the distribution are 2.67 and 1.509 in that order. This means that environmental education activities are useful to both children and adults.

**Table 4.8 we should try to conserve the Earth’s plants and animals, even though it is expensive.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	88	58.6		
Agree	57	38.0		
Indifference	1	0.7	1.47	0.652
Strongly Disagree	4	2.7		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

It can be concluded from the table 4.8 that, eighty eight (88) totaling 58.6% of the respondents strongly agreed that we should try to conserve the Earth’s plants and animals, even though it is expensive whereas four (4) representing 2.7% of them strongly disagreed. One (1) person representing 0.7% showed indifference. No one disagreed. The mean and standard deviation for the distribution are 1.47 and 0.652 respectively. This means that despite the cost involved, the coastal folks still believe that the nation should try to conserve the Earth’s plants and animals. All the responding participants for the interview, agreed that they ones in a while defecate at the shore of the beach and throw household waste into the sea. Three of them admitted that throwing waste into the sea was a common phenomenon and there seems to be nothing wrong with it.

“I don’t find anything wrong with depositing household waste into the sea. The sea will definitely carry the waste far away. I am of the view that it is what will even help generate fuel for Ghana as I

was told it is the waste we throw into the sea that form fuel for Ghana. (P2and P1 ),

We have been using the shore as a place we pass stool since time immemorial. I tell you the truth it will be very difficult for any of us here to stop using the shore.

They see nothing wrong with disposing waste into the sea and go a step further to justify their actions as something that boost crude oil.”

Only one respondent had a contrary view, according to him, he finds it appalling whenever he sees waste at the sea shore. He said he hasn't seen much discipline among the people in this community and that could be their reason for their poor attitude towards environmental cleanliness. This was said:

“Why should one find nothing wrong with making the environment dirty? The sea mostly brings back the rubbish thrown into it so if someone thinks that ones you throw rubbish into the sea, you have gotten rid of your household waste, what happens when the sea brings back the waste. Our beaches apart from those for recreational purposes are very dirty, not because people defecate around but they maliciously dump waste into the sea which is brought back.”

The second theme was about the environmental attitude of the fisher folks, was shared on how inhabitants see defecating and dumping waste at the shore. This was evidenced by the following statements.

“We have been using the shore as a place we pass stool since time immemorial. I tell you the truth it will be very difficult for any of us here to stop using the shore. This is where i and my whole family attend to natures call. My grandparents used the sea shore and this has become part of as the inhabitants living here.

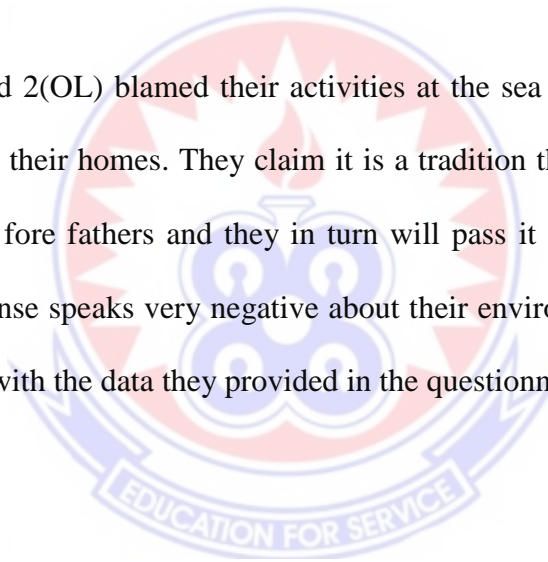
Our grandparents used the sea shore because there were no toilet facilities in their homes. As they moved on they did not construct



any toilet facility in their homes so it became obvious the sea shore was going to save us and beside the fresh air around here makes it comfortable to ease, something that you cannot get if you are in an enclosed place.

Our sea shore is not clean as far as I am concern and I blame this on how we as a people have been brought up as a generation. Children live by the examples the adults show them. Sometime when some mothers are going to the beach to defecate they go with their children. The children pick this attitude up and pass it on to their next generation. You can bear with me as you continue an attitude for long it becomes part of you. 1 (OL) and 2 (OL)”.

1(OL) and 2(OL) blamed their activities at the sea shore to unavailability of toilet facilities in their homes. They claim it is a tradition that has been passed down to them by their fore fathers and they in turn will pass it on to the generation after them. This response speaks very negative about their environmental attitude and it is in contradiction with the data they provided in the questionnaires



## Environmental Behaviour

This section examines the data on environmental behaviour

**Table 4.1 Dumping refuse at approved sites is the right thing to do.**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	84	56.0		
Agree	58	38.7		
Indifference	7	4.6	1.51	0.653
Strongly Disagree	0	0.0		
Disagree	1	0.7		
Total	150	100		

*Source: Field data, 2015*

A critical view from the analysis in table 4.1 revealed that greater number of respondents, eighty four (84) with a percentage of 56 strongly agreed that disposal of refuse at approved site is the right thing to do whereas seven 7 totaling 4.6% of them mentioned that it is not important to do so. Also, a mean and standard deviation of 1.51 and 0.653 was arrived at respectively. From the distribution more than half of the respondents are of the view that it is appropriate to dump refuse at the approved sites.

**Table 4.2 Dumping refuse into gutters can cause flooding**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	100	66.7		
Agree	46	30.6		
Indifference	0	0.0	1.39	0.632
Strongly Disagree	4	2.7		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.2 above reports that out of the hundred and fifty (150) respondents that took part in the survey, hundred (100) totaling a percentage of 66.7 of them strongly believe that dumping of refuse into gutters can cause flooding while four (4) totaling 2.7% of the respondents strongly disagreed to that notion. No one ticked indifference and disagree. The mean and standard deviation are 1.39 and 0.632. From the distribution it can be concluded that a vast majority of the respondents believe that dumping refuse into gutters can cause flooding.

**Table 4.3 It is no problem to dump refuse into bins even when they overflow**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	1	0.7		
Agree	14	9.3		
Indifference	33	22.0	3.88	0.976
Strongly Disagree	56	37.3		
Disagree	46	30.7		
Total	150	100		

*Source: Field data, 2015*

A brief observation from this table 4.3 shows that greater number of respondents fifty six (56) representing 37.3% strongly disagreed that dumping of refuse into bins even when they overflow is a problem while fourteen (14) making a percentage of 9.3, of them agreed. A surprising thirty three (33) ticked indifference. The mean and standard deviation for the distribution are 3.88 and 0.976 respectively. Thus, it can be said that dumping refuse into an overflowing bin is not the right thing to do.

**Table 4.4 Refuse can be dumped anywhere when no one is watching**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	36	24.0		
Agree	21	14.0		
Indifference	11	7.3	3.13	1.50
Strongly Disagree	52	34.6		
Disagree	30	20.0		

Total	150	100
-------	-----	-----

*Source: Field data, 2015*

It is observed from the table 4.4 show that fifty two (52) of the respondents representing 34.6% strongly disagreed that refuse can be dumped anywhere when no one is watching whereas 36 (24.0%) strongly agreed to that. With a mean and standard deviation of 3.13 and 1.50 respectively, a majority of the respondents were of view that, dumping of refuse anywhere when no one is watching is very bad.

**Table 4.5 There is no problem defecating along the beach**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	12	8.0	3.57	1.20
Agree	13	8.7		
Indifference	40	27.6		
Strongly Disagree	42	28.0		
Disagree	43	28.6		
Total	150	100		

*Source: Field data, 2015*

It is observed from the table above that forty three (43) of the respondents representing 28.6% disagreed that there is no problem defecating along the beach whereas thirteen (13) making 8.7% agreed that there is no problem defecating along the beach. With the mean and standard deviation of 3.57 and 1.20 respectively indicate that majority of the respondents surveyed disagreed to the question ‘there is no problem defecating along the beach’.

**Table 4.6 it is improper to pass urine at any place one find him/herself**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	91	60.7		
Agree	59	39.3		
Indifference	0	0.0	1.39	0.49
Strongly Disagree	0	0.0		
Disagree	0	0.0		
Total	150	100		

*Source: Field data, 2015*

From Table 4.6 above it can be realized that all the respondents representing 100% believed that it is improper to pass urine at any place one find him/herself. With a mean (1.39) and standard deviation (0.49), it can be concluded that urinating at any place one finds him/herself is not the right thing. Even though over fifty percents of the respondents strongly agreed that it is improper to pass urine at any place one fines him or herself, their actions proved otherwise, in the middle of answering of the questionnaire more than three different respondents asked to be excused, and to my surprise, they passed urine a few steps away from where I was standing.

**Table 4.7 Keeping refuses at home for days can lead to sickness**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	84	56.0		
Agree	60	40.0		
Indifference	0	0.0	1.48	0.576
Strongly Disagree	0	0.0		
Disagree	6	4.0		
Total	150	100		

*Source: Field data, 2015*

Table 4.7 indicates that greater number of the respondents eighty four (84) making a total presentation of 56.0% strongly agreed that keeping refuse at home for days can lead to sickness while six (6) representing 4.0% of them disagreed. The mean and standard deviation distribution are, 1.48 and 0.576. Once again, a majority of the respondents strongly agreed that refuse kept in the house for days can lead to sickness.

**Table 4.8 Chocked gutters are breeding places for mosquitoes**

Response	Frequency	Percentage (%)	Mean	Standard Deviation
Strongly Agree	106	70.7		
Agree	38	25.3		
Indifference	3	2.0	1.37	0.689
Strongly Disagree	1	0.7		
Disagree	2	1.3		
Total	150	100		

*Source: Field data, 2015*

From the table 4.8 above, it is clearly seen that as many as hundred and six (106) making a percentage of 70.7 of the respondents included in the survey strongly agreed that choked gutters are breeding places for mosquitoes whiles two (2) with a percentage of 1.3% disagreed. However, it is also seen that the mean and standard deviation for the distribution are 1.37 and 0.689 in that order. Thus, it can be concluded that choked gutters are breeding places for mosquitoes, a fact that is well known by the respondents. The third theme was on how serious sanctions have not been taken against people living in coastal communities. It was raised that the authorities (municipal council, environmental unit) has not been very hard on inhabitants with regards their cleanliness.

When asked whether their environmental behaviours will change positively once by laws are enacted to punish offenders who go against, this is what they had to say.

“The municipal council had no moral rights to do so because they themselves were perpetrators. There have not been any serious sanctions against throwing waste along the shore. If it were a major offence there would have been serious punishment and threats against as but since there has been nothing of that sort I think it is not a major issue to bother.

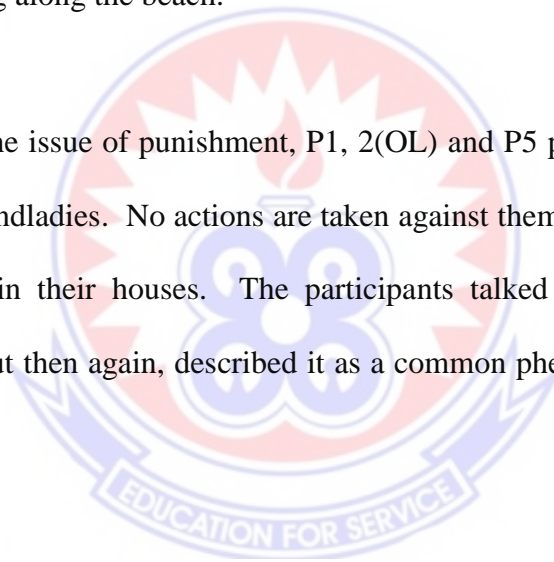
What happen is, sometimes it takes several days before Zoomlion (waste collectors) come to pick the waste cans from the community so the best option is to resort to is the sea. At this time we are left with no option than the sea which is believed by the community as the best way to dispose waste as it is bigger even than the earth and can accommodate anything at all. P1, 2(OL) and P5.”



Instead of claiming responsibility for their action, they are rather pushing the blame on the waste management company

“In most of the houses along the beach there are no places of convenience and this has been the major factor influencing why we use the shore. Where I stay for instance, it is a big place where the landlord could have converted some of the rooms into toilets for the tenants but he has refused to do so. If there were actions taken against landlords who do not build places of convenience in their homes, they would change, and this will stop inhabitants from defecating along the beach.”

Still on the issue of punishment, P1, 2(OL) and P5 pointed accusing finger at landlords and Landladies. No actions are taken against them for not putting up places of convenience in their houses. The participants talked on the same issue as a disturbing one but then again, described it as a common phenomenon in most coastal areas.



## **CHAPTER FIVE**

### **DISCUSSION**

#### **Introduction**

This chapter discusses the findings of the research based on the main research questions that guided the study. It is organized under four sub-themes. The first theme was the environment and environmental awareness. The second theme environmental attitude, environmental behaviour is third theme, followed by the last theme that was the environmental awareness and attitude of people and its correspondence with their environmental behaviour.

The discussion was done in relation to the literature reviewed in chapter two and within the conceptual framework that guided the study.

#### **The environment and environmental Awareness among fisher folks along the Winneba beach**

The data from the findings in the Chapter Four of this study indicated that majority of the respondents claimed they were conscious of the environment because it has health implications for them. This claim is seconded by Asare (2005), who opines that a host of Ghanaians are aware of the dangers associated with the way their environment is kept. Being environmentally informed or aware enables an individual enlightens an individual to observe good sanitary conditions, but this is not the case with Fisher Folks. Widegren (1998) explains environmental awareness is an attribute acquired over a long period of time, which eventually lead to environmental concern and participation of activities that protect the environment. Environmentally aware or informed individuals are proactive and act in way and manner that preserve the environment. This is contrary to their actions on the ground. Even though they are

aware of the health implications of living in filthy environment, they continue to live in it. This goes to support the opinion of Kuitumnen, Tikka and Tyns(2006), who are of the view that environmental knowledge does not always support or influence environmental practices. In the case of the fisher folks their environmental awareness (knowledge) has no bearing on their environmental behaviour (practices) or on their day to day activities.

### **Environmental attitude held by the fisher folks along the beaches of Winneba.**

The second theme for discussion was on environmental attitude held by the fisher folks along the beaches of Winneba. Hines, Hungerford, & Tomera, (1986) define the concept as an individual's support or opposition toward environmental protection. This implies that the attitude an individual hold can either be positive or negative and can therefore be acted on any of them at any given time. The data in this chapter indicated that majority of the respondents have positive attitudes towards the environment. The data confirms the opinion of Lawson (2014), who writes that most rural coastal communities in Ghana have some indigenous or local, knowledge of the effects of their attitude and behavior on their environment. For instance, in response to one of the items, which was about their opinion on cutting of trees, majority of the respondents agreed that it was extremely dangerous to deplete the country's forest reserves, all in the name of fuel, but during the observation, it was notice that fire wood and charcoal were the main and as a matter of fact, the only source of fuel used by them, both for cooking and for smoking of fish, their main source of income. Johnson, (2001) argues that even though environmental awareness has to do with knowing both the positive and negative sides of nature around us, some deliberately

go with the negative side, resulting in negative actions towards the environment. Ajzen (1985) writes that the relationship between human beings and their environment is thus a function of culture. The insanitary way of living by this fisher folks have become a part of their daily lives, even though they are informed about their environment, they refuse to translate this environmental attitude into their environmental behaviour. Again, this is an indication that the fact that an individual knows what is good does not mean that he or she will do what is good.

### **Environmental behaviour of fisher folks along the beach of Winneba**

This was the last scale and the third theme that was adapted to solicit the environmental behaviour of the coastal folk along the coast of Winneba. Environmental behaviour is explained by (Jacobson et al., 2006 Kollmus and Agyemang, 2002, pp.240) as the literacy which requires transfer of skills and increase in motivation for one to act in “environmentally responsible” manner. This definition connote that one can act friendly towards the environment only when he or she is well informed about the environment. If this is the case, it is puzzling why the fisher folks are not using their basic knowledge on the environment, to behave properly towards the environment. Adopted behaviour by an individual helps him or her to decides consciously to minimize his or her negative impacts on both natural and constructed milieus

Unlike the first two themes that were characterized by responses that were totally contrary to the reality on the ground, the response from this theme is one that can be best described as a mixed reaction. Items like dumping refuse at unapproved site, overflowing bins and gutters received positive response from the respondents. Majority of them consented to the fact that it was wrong to engage in such unhygienic

practices. On the same scale, items like throwing of rubbish into the sea and defecating at the shore of the beach received a negative reaction from the respondents. According to them, there was nothing wrong with such act, since the sea was huge enough to accommodate anything that is dumped in it. Agyemang (2002:21) asserts that, 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”. If the definition by Agyeman is anything to go by, then Fisher Folks of the beaches along Winneba have very negative environmental behaviour, since they are contributing negatively towards their natural environment. According to Agyemang (2002:21), since the attitudes and behaviours of the Fisher folks do not correspond, based on response from the data from Chapter Four, it falls in sharp contrast with the opinions of environmentalists such as Ajzen (1985) Fazio, (1986) and Fishbein and Ajzen, (1974) who are all of the view that an individual’s environmental behaviour is strongly influenced by his or her environmental awareness and attitude. It is interesting to note that based on the data from the three scales, the observation and the interview, the responses from the environmental behaviour was the only data that gave the true reflection of what is happening at the Winneba beach.

### **The environmental attitude and awareness of the fisher folks and its correspondence with their environmental behaviour**

The last theme that was discussed in this chapter was the environmental attitude and awareness of the fisher folks and its correspondence with their environmental behaviour. The data from the environmental attitude and awareness scale proved that the respondents have positive attitude and are environmentally aware. These responses did not have any bearing on the environmental behaviour of

the people. Majority also stated that dumping refuse at unapproved site, overflowing bins, cutting of trees and other environmentally hostile activities were wrong. These same respondents said there was nothing wrong with dumping of refuse into the sea and defecating at shore of the beach. Unlike the environmental awareness and attitude scale which saw most of the respondents exhibiting positive attitude or having average knowledge of their environment, the same could not be said about the environmental behaviour. This goes to support the opinion of Kuitumnen, Tikka and Tyns (2006), who are of the view that environmental knowledge does not always support or influence environmental practices. In other words having a positive attitude towards the environment does not mean that one will automatically have a positive behaviour towards the environment. The description of Kuitumnen et al (2006) best describes the respondent in this study.

The data from the environmental behaviour scale contradicted the opinions of environmentalist like Fazio (1986) who believe that there is a correlation between environmental attitude and environmental behaviour. According to him, there is a correlation between the two especially when the attitude can be accessed cognitively and when the attitude bears direct experience with the behaviour. He concludes that behaviour and attitude are always consistent. The data from the respondents in the Chapter Four of this study showed that there was no correlation between environmental attitude of the people and their environmental behaviour

Fishbein and Ajzen (1974) also noted that, there is correspondence between environmental attitude and environmental behaviour, but not without the following conditions; when attitude is compared in certain or specific level with behaviour, when behaviour is relevant to attitude and when the behaviour intention is taken into account. Just as some environmentalist have taken a stand that there is a correlation

between environmental attitude and behaviour and others who believe there is no correlation between them, there is a third school of thought by environmentalist such as (Burke & Sutherland, 2004; Johnson, 2001), who have taken the neutral position. Even though these writers have taken entrenched position, the data from the respondents indicated that their environmental attitude does not translate or influence the environmental behaviour in anyway.



## CHAPTER SIX

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

The purpose of the study was to assess the environmental awareness, attitude and behaviour of the residents of the beaches along the coast of Winneba and determine, whether there is any correspondence between their environmental awareness and attitudes on one hand and their environmental behaviour on the other.

This chapter presents the summary of findings that were gathered on the field and draws conclusions based on the findings. Recommendations are also made based on the findings.

#### Summary of key findings

This section sums up the main findings of the research based on the main research questions. In order to assess the environmental awareness, attitude and behaviour of the residents of the beaches along the coast of Winneba and determine, whether there was correspondence between their environmental awareness and attitudes on one hand and their environmental behaviour on the other, the following research questions were used to solicit for response

1. What is the level of environmental awareness among the fisher folks of Winneba?
2. What is the environmental attitude held by the fisher folks of Winneba?
3. What are the environmental behaviours exhibited by the fisher folks of Winneba?



4. To what extent do the environmental awareness and attitudes of the respondents correspond with their environmental behaviours?

**The following key findings were gathered from the study.**

Based on the first research question on environmental awareness, the results showed that fisher folks along the beach of Winneba have moderate awareness about their environment. The results imply that the coastal folks are aware of the environmental and health issues in their communities.

The second research question focused on environmental attitude of inhabitants along the coast of Winneba. It was established that the coastal folks hold moderately positive attitude towards their environment. Inhabitants indicated that they were ready to solve environmental problems in their community, once the government decides to take care of the expenses. They claim that it is important for the society to solve environmental problems.

Concerning the third research question, it was found that the coastal folks have low or poor environmental behaviour. They agreed that they defecate and throw household waste into the sea. This would suggest that they see the sea as a dumping place.

Finally, based on the data collected and analyzed from the three fishing communities, it was discovered that in terms of the correspondence between environmental awareness, attitude and environmental behaviour of the coastal folks, there was no correlation between the environmental awareness and attitude of the Fisher Folks and their environmental behaviour.

## **Conclusions**

The results of this research show that Fisher Folks were aware of their environment and issues related to negative environmental practices

Respondents resort to the beach shore to defecate because most of them do not have toilet facilities in their homes and according to them, cannot afford the public facility all the time. Most of the houses located along the beaches of Winneba are without toilet facilities. Majority of Landlords and Landladies in these areas build without providing basic amenities such as decent washrooms for tenants. This leaves them to resort to public toilets and the sea shore. Water closet is the least used toilet facility in coastal communities.

The fisher folks have moderate awareness of environmental issues. Findings from the data collected indicate that the respondents have some basic knowledge of the environment and the negative consequences of not preserving quality environment as a whole even though it does not reflect in their environmental behaviour. The coastal folks understand waste management as a major environmental problem in their community but they expect the government to take care of the situation. They dispose rubbish into the sea because according to them, the prices charged by the waste management companies are too high. There have been few sensitization programmes on environmental issues for the coastal folks. These sensitization programmes were not taught in Effutu. There are no sanctions against individuals who defecate along the shores and those who litter the beach and its surroundings with dirt.

The number of waste bins provided for these communities are awfully inadequate and they are not emptied in time

### **Recommendations**

Based on the findings gathered and conclusions drawn, the following recommendations are made:

1. Environmental protection Agency should pass practical laws on open defecation along the beaches and ensure that these laws are strictly adhered to by everybody. This will bring about a major change in attitude with regard to soiling of the shore. The local government in the municipality can employ indigenes and train them as coast guards whose duties are solely to protect the beach from being used as dump site at all time.
2. The Chiefs and the people together with the local government can come together to raise funds to provide washroom facilities, not toilet alone but bathrooms as well, at the beach. Provision of washroom at every home should be mandatory; Landlords and Landladies who do not comply with this law should be punished severely.
3. There should be the provision of waste bins for individual houses. Waste collection at community level should be made very effective so that inhabitants will resort to waste collection points rather than the sea. The number of waste collection points should be increased and it should be collected on regular basis.
4. The Information office and health and sanitation offices of the local government in the municipality should on regular bases, organize sensitization programmes and education in communities along the coast. Organization of such programmes will enable these fishing communities to understand the

impact of their actions on the environment. Such programmes can be geared towards helping coastal folks to be conscious of their environment and ways to maintain quality and serene environment. The programmes should be taught in a language that will be easily understood by the people.



## REFERENCES

- Abdel-Gaid, S., Trueblood, C. R., & Shrigley, L. (1986). A systematic procedure for constructing a valid microcomputer attitude scale. *Journal of research in Science Teaching*, 23, 823-839.
- Abell, S. K. & Lederman, N. G. (2007). *Handbook on Research on Science Education*. New York: Routledge.
- Adger, W. N., Arnelland, N. W. & Tompkins, E. L. (2005). *Successful adaptation to climate change across scales*. *Global Environ. Chang.* 15, 77-86.
- Adger, W. N., Kelly, P. M. Winkels, A. Huy L. & Locke, C. (2002). *Migration, re-mittances, livelihood trajectories and social resilience*. *Ambio*, 31, 358-366.
- Agyedu, M. Donkor, J. & Obeng, B. (1999). *Research methods*. Kumasi: UST Press Limited.
- Ajzen, I. (1985). From intentions to actions: 'A theory of planned behaviour'. In J. Kuhl & Bechkman (Eds), *Action control: from cognition to behaviour*. New York: Springer-Verleg
- Ajzen, I., & Driver, B. L. (1992). Application of the theory of planned behaviour to leisure choice. *Journal of Leisure Research*, 24, 207-224.
- Ajzen, I., & Fishbein, M. (1980). 'Understanding attitudes and predicting social Behavior'. Prentice-Hall, Upper Saddle River, New Jersey
- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ: Erlbaum.
- Alghazo, E.M., Gaad, E. (2004). General education teachers in the United Arab Emirates and their acceptance of the inclusion of students with disabilities. *British Journal of Special Education*, 31.2, 94-99
- Ali, M.M., Mustapha, R. and Jelas, Z. M. (2006). An empirical study on teachers' perceptions towards inclusive education in Malaysia. *International Journal of special Education*, Vol. 21 (3).
- Andreoni & Vesterlund, (2001). Environmental literacy in America: What ten years of NEETF/Roper research and related studies say about environmental literacy in the U.S., The National Environmental Education & Training Foundation, Washington, D.C.
- Annin, T. E. (2003). *An economic Blueprint for Ghana*, Woeli Publishing Services ; Accra, Ghana.

- Anzeboom, H., De Graaf, P., Treiman, J. & De Leeuw, J. (1992). 'A standard international socio-economic index of occupational status', *Social Science Research*, 21 (1), pp, 1-56.
- Asare, S. O. (2005). In search of indices for measuring the standard of education: a need for a shift in Paradigm. A special seminar by West African Examinations Council. Lagos 7th May.
- Avanesov, A., Dahm, R., Tuebingen T., Sewell, W.& Malicki, J. (2005). 'Loss of selected a macrine cell subpopulations': a new class of genetic defects in the vertebrate retina. *Developmental Biology*, Vol. 285(1), p. 138-155
- Bandura, A. (1972). 'Socialization. in Lexikonder Psychology'. Band III. Freiburgim Breisgau: Herder.
- Bandura, E. & Breakwell, G. M. (1972). 'Factors predicting environmental concern and indifference in 13- to 16-year-olds'. *Environment and Behavior* 26, 2,223- 238.
- Barrow, C. J. (1995). 'Sustainable development: concept, value and practice'. *Third World Planning Review* 17 (4), 369–387.
- Bassey, B. E., Benka-Coker, M. O., & Aluyi, H. A. S. (2006). 'Characterization and management of solid medical wastes in the Federal Capital Territory', Abuja Nigeria. *African Health Sciences*, 6(1), 58-63.
- Bell, P. A., Greene, T. C., Fisher, J. D. & Baum, A. (2001)' *Environmental Psychology*', (5th ed.), New York: Harcourt College Publishers.
- Blomquist, G.C. and Whitehead, J.C. (1998). 'Resource quality information and validity of willingness to pay in contingent valuation'. *Resource and Energy Economics*, 20, 179-196.
- Boateng, C. and Nkrumah, D. (2006). 'Managing Waste! The Attitudinal Change'. *Daily Graphic*, 16th December. Page 20.
- Boer A. D., Piji S. J., & Minnaert A. (2011). 'Regular primary schoolteachers' attitudes towards inclusive education': A review of education. *International Journal of Inclusive Education*, 15(3):331-353. doi 10.1080/13603110903030089
- Bomstein, Y. (1989). 'Environmental education at secondary level', In S. Ojanen & H. Rikkinen (Eds) *Ympäristö kasvattajana. Environment as an educator*. Porvoo: WSOY, 185-209.
- Bradley, J. C, Waliczek, T. M., & Zajicek, J. M., (1999). 'Relationship between environmental knowledge and environmental attitude of High School Students'. *Journal of Environmental Education*, 30(3), 1-21.

- Bradley, R. R. & Packer, J. M. (1996). 'Teaching and learning in environmental education: developing environmental conceptions'. *The Journal of Environmental Education* 27, 2, 25-32.
- Brown-Kruse, J. and D. Hummels, D. (1993). 'Gender Effects in Laboratory Public Goods Contribution: Do Individuals Put Their Money Where Their Mouth Is?', *Journal of Economic Behavior and Organization*, 22, 255-267.
- Bryant C. K. & Hungerford H. R. (1997). 'Prediction of goal-directed behaviour: Attitudes, intentions and perceived behaviour control'. *Journal of Experimental Social Psychology*, 22, 453-474.
- Bryant, C. K. & Hungerford, H. R. (1977). 'An analysis of strategies for teaching environmental concepts and values clarification in kindergarten'. *The Journal of Environmental Education* 4, 9. 44-49.
- Bryceson, I. (2001). 'Coastal aquaculture developments in Tanzania: sustainable and non-sustainable experiences'. Keynote paper presented at 2nd WIOMSA Scientific Symposium, 22nd-26th October, 2001 in Dar es Salaam, Tanzania
- Burke, K., & Sutherland, C. (2004). 'Attitudes towards inclusion: Knowledge vs. Experience'. *Education*, 125(2), 163-72.
- Carlson, E., Brauen, M., Fiore, T., Lee, H., St. Claire, D., Schroll, K., (2002). 'Study of personnel needs in special education' [CD]. Available from: <http://ferdig.coe.ufl.edu/spense/index.htm>
- Carlson, L. A., & Covey, E. S. (2004). 'How 'far' is 'near'? Inferring distance from spatial descriptions'. Manuscript submitted for publication
- Carlson, F. and Johansson-Stenman, O. (2000). 'Willingness to pay for improved air quality in Sweden'. *Applied Economics*, 32, 661-669.
- Chanda, R. (1999). 'Correlates and dimensions of environmental quality concern among residents of an African Subtropical City: Gaborone, Botswana'. *Journal of Environmental Education*, 30(2), 31-39.
- Chhabra, S., Srivastava, R., & Srivastava, I. (2010). 'Inclusive education in Botswana: The perceptions of school teachers'. *Journal of Disability Policy Studies*, 20(4), 219-228.
- Creswell, J. (2009). 'Research Design: Qualitative, quantitative, and mixed method approaches'. Thousand Oaks, CA: Sage.
- Croll, P. & Moses, D. (2000). 'Continuity and change in Special School Provision: Some perspectives on local education authority policy making'. *British Educational Research Journal*, 26(2), 177-190.

- Cunningham, S. (2001). From cultural to creative industries, theory, industry and policy implications. *Culturelink*, Special Issue, pp. 19–32.
- Dahm, C.N., Grimm, N.B., Marmonier, P., Valett H. M. & Vervier P. (1998). 'Nutrient dynamics at the interface between surface waters and groundwaters'. *Freshwater Biology*, 40, 427–451
- Danielson, L., Hoban, T.J., Van Houtven, G. and Whitehead, J.C. (1995). 'Measuring the benefits of local public goods: environmental quality in Gaston County', North Carolina. *Applied Economics*, 27, 1253-1260.
- Diamontopoulos, A. Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). 'Can socio-demographic still play a role in profiling green consumers? A review of the evidence and empirical investigation'. *Journal of Business Research*, 56, 465-480.
- Dulció A, Bakota K. (2009). 'Views of elementary school teachers towards students with cochlear implants inclusion in the Process of Education'. *Collegium Antropologicum*, 33(2):495-501.
- Dunlap, J. B., & Impara, J. C. (2000). 'The Impact of an environmental education programme on knowledge and attitudes'. *Journal of Environmental Education*, 22, 36-40.
- Dunlap, R. & Jones, R (2002). 'Environmental Concern: Conceptual and Measurement Issues'. In Dunlap and Michelson (Ed), *Handbook of Environmental Sociology* ( pp. 482-542). London: Greenwood Press.
- Dunlap, R. E., & Olsen, M. E. (1999). 'Hard-path versus soft-path advocates: A study of energy activists'. *Policy Studies Journal*, 13, 413–428
- Dunlap, R. E., & Van Liere. K. D. (1984). 'Commitment to the Dominant Social Paradigm and concern for environmental quality'. *Social Science Quarterly*, 65, 1013–1028.
- Dunlap, R., Van Liere, K., Mertig, A., & Jones, R. E. (2000). 'Measuring endorsement of the New Ecological Paradigm: A revised NEP scale'. *Journal of Social Issues*, 56(3), 425–442.
- Dunlap, R. E. (2008). 'The new environmental paradigm scale: From marginality to worldwide use'. *Journal of Environmental Education* , 40 (1), 3–18.
- Dunport, M. G., & Millar, K. U. (2004). 'The effects of direct and indirect experience on affective and cognitive responses and the attitude-behaviour relation'. *Journal of Experimental Social Psychology* 32, 561-597
- Dupont, D. P.(2004). 'Do children matter? An examination of gender differences in environmental valuation'. *Ecological Economics*, 49: 273-286.



- Duroy Q. M & Ben-Zeev, T. (2003). 'Do high-achieving female students under perform in private? The implications of threatening environments on intellectual processing'. *Journal of Educational Psychology*, 95, 796–805.
- Duroy, Q. M. (2005). 'The determinants of environmental awareness and Behaviour'. Rensselaer Working Papers in Economics. Rensselaer Polytechnic Institute, Department of Economics.
- Eckel, T. & Grassman, W. (2001). 'Evaluación de servicios educativos: el rendimiento en los centros públicos y privados medido' en PISA-2003, Hacienda Pública Española – Revista de Economía Pública, 183 (4), 33-66.
- Eiser, J. R., Bostrom, A., Burton, I., Johnston, D. M., McClure, J., Paton, D., van der Pligt, J. & White, M. P. (2012). 'Risk interpretation and action: A conceptual framework for responses to natural hazards'. *International Journal of Disaster Risk Reduction*. pp. 5–16.
- Engel, U. and Pötschke, M., (1998). 'Willingness to pay for the environment: social structure, value orientations and environmental behaviour in a multilevel perspective'. *Innovation*, 11(3): 315-332.
- Eysenck, J. R., Evans, G. A. & Thomas, G. (1971). 'The public understanding of Science'. *Nature* 340, 11-14.
- Eysenck, H. J. (1971). 'On the choice of personality tests for research and Prediction'. *Journal of Behavioural Science*, 1, 85-89.
- Fazio, Russell H. (1986). 'How do Attitudes Guide Behavior?' In R. M. Sorrentino and E. T. Higgins (eds), 'Handbook of Motivation and Cognition: Foundations of Social Behavior', NY: Guilford: 204-223.
- Fazio, Russell H., Martha C. Powell and Carol J. Williams (1989). 'The Role of Attitude Accessibility in the Attitude-to-behavior Process'. *Journal of Consumer Research*, 16, 280-288.
- Fein, S. (1999). 'Prejudice and performance: Dealing with self-image threats'. St. Louis, MO
- Fiedeldej, A. C., Craffert, L., Fiedeldej-Van Dijk, C., Marais, J. L., Van Staden, F. J. & Willers, V. (1998). 'Human values, attitudes and perceptions of the environment': *The South African PAGEC study*. Pretoria: HSRC.
- Fishbein, M. & Ajzen, I. (1975). 'Belief, attitude, intention and behavior: An introduction to theory and research'. Reading, Mass.: Addison Publishing Company,.

- Francis, J. & Bryceson, I. (2001). 'Tanzania Coastal and Marine Resources: Some Examples Illustrating Questions of Sustainable Use, in Lessons learned-case studies in Sustainable Use', pp. 76-102. *Expert Africa*, <http://www.expertafrica.com/tanzania/zanzibar-island/reference-map>
- Franzen, A. (2003). 'Environmental Attitudes in International Comparison: An Analysis of the ISSP Surveys 1993 and 2000', *Social Science Quarterly*, 84, 297-308.
- Giddings, B., Hopwood, B. & O'Brien, G (2002). 'Environment, Economy and Society: fitting them together into sustainable development, *Sustainable Development*', 10: 187-196
- Gill J. D., Crosby L. A. and Taylor J. R.. (1986). 'Ecological concern, attitudes, and social norms in voting behavior', *Public Opinion Quarterly*, 50, 537–554.
- Glaubman, R., & Lifshitz, H. (2001). 'Ultra-orthodox Jewish teachers self-efficacy and willingness for inclusion of pupils with special needs'. *European Journal of Special Needs Education* 16, 207-223.
- Glenn Parsons & Allen Carlson (2004). 'New Formalism and the Aesthetic Appreciation of Nature'. *Journal of Aesthetics and Art Criticism* 62 (4):363–376.
- Godin J. G. J, Sproul C. D (1988). 'Risk-taking in parasitized sticklebacks under threat of predation—effects of energetic need and food availability'. *Can J Zool* 66:2360–2367
- Gore, G. (1993). 'Predicting dishonest actions using the theory of planned Behavior'. *Journal of Research in Personality*.
- Gorman, D. M., Speer, P. W., Gruenewald, P. J., Labouvie, E.W. (2001). 'Spatial dynamics of alcohol availability, neighborhood structure and violent crime'. *Journal of Studies on Alcohol*. 62(5):628-636.
- GSS (2012). 'Pattern and Trends of Poverty in Ghana 1991-2012'. Ghana Statistical Service
- Halohan C. J (1982). 'Environment psychology'. New York, Random House
- Harris K. W., Milbrath L. W., & Enright, S. A. (1991). 'Environmental knowledge, awareness and concern among 11th grade students in New York State'. *Journal of Environmental Education*
- Hidano, N., Kato, T. and Aritomi, M. (2005). 'Benefits of participating in contingent valuation mail surveys and their effects on respondent behaviour: a panel analysis'. *Ecological Economics*, 52, 63-80.

- Hines, J. M., Hungerford, H. R. & Tomera, A. N. Ž . (1986). 'Analysis and synthesis of research on responsible environmental behavior: a meta-analysis'. *Journal of Environmental Education* 18, 1]8
- Howell, S. E. and S. B. Laska. (1992). 'The changing face of the environmental coalition: A research note'. *Environment and Behavior*, 24(2): 134-144
- Ilesanmi, A. A. (2006). 'The relevance of environmental education to secondary Education level in Nigeria'. B.Ed project, Obafemi Awolowo University, Ile-Ife.
- Israel, M. & Levinson, S. (2004). 'Current state of the art of environmental education in Nigeria'. In Lawal, M. B. & Mohammed, A. A. (Eds), *Proceedings of the National Workshops on Popularising Environment*.
- Jacobson, S. K., Mc Duff, M. D., Monroe, M. C., (2006). '*Conservation Education and Outreach Techniques*'. Oxford University Press, New York.
- Johnson, C., Bowker, J., And Cordell, H. (2004). 'Ethnic Variation In Environmental Belief And Behavior: An Examination In A Social Psychological Context'. *Environment And Behavior*. 36, 157-186.
- Johnson, R. B., & Christensen, L. B. (2014). (5th edition). Educational research methods: Quantitative, qualitative, and mixed approaches. Los Angeles, CA: Sage.
- Jones, R. E., & Dunlap, R. E. (1992). The social bases of environmental concern. Have they changed over time? *Rural Sociology*, 57(1), 134-144.
- Kollmuss, A. & Agyeman, J. (2002): Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour?, *Environmental Educational Research*, 8(3), 239-260
- Kolmus, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260
- Kothari, C.R. (1985) '*Research Methodology, Methods and Techniques*'. New Delhi: Wishwa Prakshan.
- Kothari, C. R. (2004). '*Research Methodology Methods & Techniques*'. Second Edition, New Delhi: New Age International publisher, PP. 1-2.
- Lawson, E.T. (2014). When Rhetoric Meets Reality: Attitudinal Change and Coastal Zone Management in Ghana. *Environment and Natural Resources Research* 4 (4), 37-50
- Leatherman, M. J., & Niemeyer, J.A. (2005). 'Teachers' attitudes toward

- inclusion: factors influencing classroom practice'. *Journal of Early Childhood Teacher Education*, 26, 23-36.
- Levins, T., Bornholt, L., & Lennon, B. (2005). 'Teachers experience, attitudes, feelings and behavioural intentions towards children with special educational needs'. *Social Psychology of Education*, 8, 329-343.
- Lifshitz, H., Glaubman, R., & Issawi, R. (2004). 'Attitudes towards inclusion: The case of Israeli and Palestinian regular and special education teachers'. 19, 2(171-190)
- Linke, R.D. (1980). '*Environmental Knowledge in Australia*', Sydney, George Allen & Unwin Australia.
- Linnakylä, P. (1995). '*Lukutaidolla maailmankartalle: Kansainvälinen lukutaitotutkimus Suomessa* [With literacy to the map of the world. International IEA study of reading literacy in Finland]'. University of Jyväskylä: Institute for Educational Research
- Loreman T, Forlin C, Sharma U. (2007). An International Comparison of Pre-service Teacher Attitudes towards Inclusive Education. *Disability Studies Quarterly*;27(4):5-13.
- Lozzi, R. (1989). 'Correlates and dimensions of environmental quality concern among residents of an African Subtropical City: Gaborone, Botswana' *Journal of Environmental Education*, 30(2), 31-39
- Lyons, E. & Breakwell, G.M., (1994). 'Factors predicting environmental concern and indifference in 13–16 year olds'. *Environment and Behaviour* 26, 2: 223–238
- Maddan, T. J., Ellen, P. S., & Ajzen, I. (1992). 'A comparison of the theory of planned behavior and the theory of reasoned action'. *Personality and Social Psychology Bulletin*, 18 (1), 3-9
- Madruca, K., & Batalha da Silveira, C. F., (2003). 'Can teenagers educate children concerning environmental issues?' *Journal of Cleaner Production*, pp. 519–525
- Madsen, P. (1996). 'What can universities and professional schools do to save the Environment?' In J. B. Callicott and F. J. da Rocha (Eds.), *Earth Summit Ethics: toward a reconstructive postmodern philosophy of environmental education*. (pp. 71-91). NY: Albany State University of New York Press.
- Mahbub, T. (2008). 'Inclusive education at a BRAC school-perspectives from the Children'. *British Journal of Special Education*, 35(1), 33-41.
- Maloney, M. & Ward, M. (1975). 'A revised scale for measurement of ecological attitudes and knowledge'. *American Psychologist* 30, 787-790.

- Markeh, D., & Thompson, M. (2004). 'Solo status, stereotype threat, and performance expectancies: Their effects on women-performance'. *Journal of Experimental Social Psychology*, 39, 68–74.
- McBroom, W. H. & Reed, F. W. (1992). 'Toward a reconceptualization of attitude behavior consistency'. *Social Psychology Quarterly* 55, 2, 205-216.
- McGuire, W. J. (1976). 'The concept of attitudes and their relations to behavior'. In H. W. Sinaiko & L. A. Broedling (Eds) *Perspectives on attitude assessment: Surveys and their alternatives*. Champaign, IL: Pendleton.
- Meng, D. (2008). 'The attitudes of primary school teachers toward inclusive education in rural and urban China'. *Frontiers of Education in China*, 3(4), 473-492.
- Milfont, T.L., Duckitt, J. (2010). 'The environmental attitudes inventory: a valid and reliable measure to assess the structure of environmental attitudes'. *Journal of Environmental Psychology*, 30, 80-94.
- Mishra, P., & Koehler, M.J. (2006). 'Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge'. *Teachers College Record*. 108 (6). 1017–1054.
- Mustapha, F. and Jelas J. (2006). 'Magnitude of alcohol related mortality and morbidity among U.S. college students age 18-24: Changes from 1998 to 2001', *Annual Review of Public Health* 26:259–279, 2005.
- Needleman, L. D. & Geller, E. S. (1992). 'Comparing interventions to motivate work-site collection of home-generated recyclables'. *American Journal of Community Psychology* 20, 775- 785.
- Newhouse, N. Ž . (1990). 'Implications of attitude and behavior research for environmental conservation'. *Journal of Environmental Education* 22, 26]32.
- Ngoile, M. A. K., Daffa, J. & Kulekana, J. (2001). 'Integrated coastal management in Tanzania and eastern Africa: Addressing diminishing resources and a forgotten people', pp. 213–225. In: Bodungen, B. Von & Turner, R. K. (eds). *Science and Integrated Coastal Management*. Dahlem University Press.
- Nord, M., A. E. Luloff, and J. GT. Bridger. 1998. 'The association of forest recreation with environmentalism'. *Environment and Behavior*, 30(2): 235-246.
- Norwood, G. and Montano, M. (1985). 'Environmental knowledge and beliefs among tenth grade students in Australia'. PhD. Dissertation, The Ohio State University.

- Norwood, G. and Montano, M. (1985). 'Students' attitudes toward school and classroom science: are they independent phenomena?' *School Science and Mathematics* 98, 2, 76-89
- Nowell, C. and Tinkler, S., (1994). 'The influence of gender on the provision of a public good', *Journal of Economic Behavior and Organization*, 25:25-36.
- O'Brien, A., Schlegelmilch, B. B., Sinkovics, R. R., & Bohlen, G. M. (2003). 'Can socio-demographic still play a role in profiling green consumers?' A review of the evidence and empirical investigation'. *Journal of Business Research*, 56, 465-480
- O'Brien, A. & Mello, S. R. (2007). 'Indications of environmental literacy: using a new survey instrument to measure awareness, knowledge, and attitudes of university-aged students'. *Retrospective Theses and Dissertations*. Paper 15055.
- Olivia A. T. Frimpong K., OATF. (2008). 'The most affected in land issues: Women, migrants, urban dwellers, youth and PLWHAs'. *International Journal of rural studies*, 15(2), 12 -1
- Oteng-Ababio, M. (2010). 'E-waste: An emerging challenge to solid waste management in Ghana'. *International Development Planning Review*, vol. 32, pp. 191–206
- Oteng-Ababio, M. (2011). 'Beyond technical details: The stalled Kwabenya Engineered Sanitary Landfill Project in Accra, Ghana. Geografisk Tidsskrift-Danish'. *Journal of Geography*, 111(2), 169–179.
- Oyetunji, C. O. (2006). 'The Relationship Between Leadership Style And School Climate In Botswana Secondary Schools'. Unpublished Ph.D. Thesis Department of education Management, University Of South Africa.
- Patel, D.G. and Patel, N.A. (1994). 'Environmental awareness of the primary school teachers'. *The Progress of Education*, 68 (10-11), 234-236.
- Phillips, C. (2009). 'Should we impeach armchair linguists?' In S. Iwasaki, H. Hoji, P. Clancy, & S.-O. Sohn (Eds.), 'Japanese-Korean Linguistics' (Vol. 17). Stanford, CA: CSLI Publications
- Potabenko M. (2002). 'Use of sociological surveys for assessing environmental information needs', GRID, Arendal – June, 2002
- Potabenko M. (2002). 'Use of sociological surveys for assessing environmental information needs', GRID, Arendal – June, 2002
- Rajecki, D. W. (1982). 'Attitudes: Themes and advances'. Sunderland, MA: Sinaver Associates.

- Ramsey, C. E., & Rickson, R. E. (1976). 'Environmental knowledge and attitudes'. *The Journal of Environmental Education*, 8(1), 10-18
- René, A., Bruneau, C., Abdelmoumene, N., Maguerez, G., Mounic, V., & Gremion, C. (2006). 'Improving patient safety through external auditing: The SIMPATIE (Safety Improvement for Patients in Europe) project'. Saint-Denis La Plaine: Haute Autorité de Santé.
- Rockstrom, J. Steffen, W. Noone, K. Persson A., Chapin, F.S. Lambin, E. Lenton, T.M. Scheffer, M. Folke, C. Schellnhuber, H.J. Nykvist, B. de Wit, C.A. Hughes, T. van der Leeuw, S. Rodhe, H. Sorlin S., Snyder, P.K. Costanza, R. Svedin, U. M. Falkenmark, L. Karlberg, R.W. Corell, V.J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, J. Foley (2009) Planetary boundaries: exploring the safe operating space for humanity *Ecol. Soc.*,
- Ross-Hill R. (2009). 'Teacher Attitude towards inclusion practices and special needs Students'. *Journal of Research in Special Educational Needs*;9(3):188-98.
- Rou, S., (1995). 'A study of the awareness and attitude of teachers and students of high schools toward environmental education in Jabalpur district', Ph.D. Thesis, Ani Durgavati Vishwavidyalaya, Indian Edu. Abstract, 1, Section 24, 62.
- Sahim, P. M., Blanton, H., & Williams, K. J. (2004). 'The effects of stereotype threat and double-minority status on the test performances of Latino women'. *Personality and Social Psychology Bulletin*, 2, 659-670.
- Schmidt Julie E. (2007). 'From Intentions to Actions: The Role of Environmental Awareness on College Students'. *UW-L Journal of Undergraduate Research*, Vol. X, 1-4
- Scholl, R. (2002, September 15). 'The transtheoretical model of behavior change'. Retrieved November 11, 2004, from <http://www.cba.uri.edu/Scholl/Notes/TTM.html>
- Schultz, P. (2002). 'Environmental Attitudes and Behaviors Across Cultures'. *Online Readings in Psychology and Culture*, 8(1). <http://dx.doi.org/10.9707/2307-0919.1070>
- Schultz, P. W. (2000). 'Empathizing with nature: the effects of perspective taking on concern for environmental issues'. *Journal of Social Issues*, 56(3), 391-406.
- Schultz, P. W. (2000). 'Empathizing with nature: The effects of perspective taking on concern for environmental issues'. *Journal of Social Issues*, 56(3), 391-406.

- Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A.M. (2004). 'Implicit connections with nature'. *Journal of Environmental Psychology*; 24, 31-42. doi: 10.1016/S0272-4944(03)00022-7
- Scott, D. and F. K. Willits (1994). 'Environmental attitudes and behavior': A Pennsylvania survey. *Environment and Behavior* 26: 239-260.
- Scribner, R. A., MacKinnon, D. P, Dwyer, J. H. (1995). 'The risk of assaultive violence and alcohol availability in Los Angeles'. *American Journal of Public Health*. ; 85(3):335-340.
- Scribner, R. A., MacKinnon, D.P., Dwyer, J. H. (1994). 'Alcohol outlet density and motor vehicle crashes in Los Angeles County cities'. *Journal of Studies on Alcohol*. 55 (4):447-453.
- Sesabo, J. K., Lang, H. & Tol, R. S., (2006). 'Perceived Attitude and Marine Protected Areas (MPAs) establishment: Why households' characteristics matters in Coastal resources conservation initiatives in Tanzania'. Working Papers.
- Shin, W. S. (2001). 'Reliability and factor structure of a Korean version of the New Environmental Paradigm'. *Journal of Social Behavior and Personality*, 16, 9–18.
- Shukula, B. H., Gilovich, T., Goore, N., & Joseph, L. (2001). Merepresence and 242–24
- Skog, O. J. (1996). 'Public health consequences of the J-curve hypothesis of alcohol problems'. *Addiction*. 91(3):325-37.
- Spector, P. E. (1992). 'Summated Rating Scale Construction: An Introduction Sage University Papers Series'. *Quantitative Applications in the Social Sciences*; No. 07-082 Sage Publications, Inc.
- Speer, P. W., Gorman D. M, Labouvie, E. W, Ontkush, M. J. (1998). 'Violent crime and alcohol availability: relationships in an urban community'. *J Public Health Policy*. 19(3):303-18.
- Sprinthall, S. & OJa, G (1994). '*Belief, attitude, intention and behaviour: An introduction to theory and research*'. Reading, MA: Addison-Wesley.
- Stephen, I. D., Coetzee, V., Law Smith, M. J., & Perrett, D. I. (2009). 'Skin blood perfusion and oxygenation colour affect perceived human health'. *PLoS ONE*, 4, e5083. [[PMC free article](#)] [[PubMed](#)]
- Stern, N., (2007). 'The Economics of Climate Change—The Stern Review'. Cambridge University Press, Cambridge.
- Stern, P. C., & Dietz, T. (1994). 'The value basis of environmental concern'.



Journal of Social Issues, 50, 65–84.

Stockwell, T., Hawks, D., Lang, E., Rydon, P. (1996). 'Unravelling the preventive paradox for acute alcohol problems'. *Drug Alcohol Rev.* Mar;15(1):7-15.

Stunkard, A. J., Albaum, J. M. (1981). 'The accuracy of self-reported weights'. *Am J Clin Nutr.*; 34(8):1593-1599.

Stutzman, T. M. & Green, S. B. Ž . (1982) . 'Factors affecting energy consumption: two field tests of the Fishbein Ajzen model'. *Journal of Social Psychology* 117, 183, 201.

Suneetha, G. (2007). '*Environmental awareness of school students*', Vedams books for India.

Taylor, F. W. (1911). '*The Principles of Scientific Management.*' New York, NY: The Norton Library

Tesser, A. (1993). 'The importance of heritability in psychological research: The case of attitudes'. *Psychological Review*, 100, 129-142.

Tesser, J. A. & O'Connor, M. (1993). 'Environmental education and attitudes'. *Environment and Behavior* 32, 5, 711-723

Tewari B. K. (2004). '*Environmental Literacy and Awareness among the women of Mountain Region of Uttarancha'l*, India: A Situational Analysis

Tittle, C. (1980), '*Sanctions and Social Deviance: The Question of Deterrence*'. New York: Praeger.

Tobias, S. (2003). '*Emotional bonds with nature as determinant of environmental awareness; The missing link for saving our environment?*' Master Thesis submitted in partial fulfilment of the requirements for the degree of a Master of Science. Klagenfurter Strasse Bad Kreuznach, Germany

Tobias, S. (2003). 'A threatening intellectual environment: Why females are susceptible to experiencing problem-solving deficits in the presence of males'. *Psychological Science*, 11, 365–371.

Tobin, K., Tippins, D. J. & Gallard, A. J., (1994). 'Research on instructional strategies for teaching science'. In D. L. Gabel (ed.). *Handbook of Research on Science Teaching and Learning*. New York:: Macmillan, pp. 45-93.

Tobink R., & Oskamp, S. (1994). 'Factors influencing community residents' participation in commingled curbside recycling programs'. *Environment and Behavior*, 26, 587-612.

Torgler, B., 2006. 'The importance of faith: Tax morale and religiosity'. *Journal of*

*Economic Behavior and Organization* 61: 81-109.

United Nations Environmental Programme (2009). RIM Background Paper for Consultations, 3rd Draft – October 2009.

United Nations Environmental Programme (UNEP) (2009). 'Developing Integrated Solid Waste Management Plan Training Manual', Volume 2: Assessment of Current Waste Management Systems and Gaps Therein. Osaka/Shiga, Japan.

Van Liere, Kent D., and Riley E. Dunlap. (1980). 'The Social Bases of Environmental Concern: A Review of Hypotheses, Explanations and Empirical Evidence'. *Public Opinion Quarterly* 44: 181–199.

Veisten, K., Hoen, H.F., Navrud, S. and Strand, J. (2004). 'Scope insensitivity in contingent valuation of complex environmental amenities'. *Journal of Environmental Management*, 73, 317-331.

Vlosky, D. A. and R. P. Vlosky (1999). '*Exploring Age-Related Environmental Attitudes in the Context of Wood Product Certification*', Working Paper No. 51, Louisiana State University Agricultural Center, May 31, 1991.

Waliczek, T. M., & Zajicek, J. M. (1999). 'Relationship between environmental knowledge and environmental attitude of High School Students'. *Journal of Environmental Education*, 30(3), 1-21.

Whynie, J. A. (2003). 'Promoting Environmentally Responsible Behaviour: An Evaluation Of The Global Learning And Observations To Benefit The Environment'. *Environment and Behavior* 30 (2), 54–75

Whyte, I. D. (2005) '*The individual and community life*'. Beech, J., Hand, O., Mulhern, M. & Weston, J. (eds.). 9 ed. Edinburgh: John Donald in association with The European Ethnological Research Centre and The National Museums of Scotland, p. 343-357 15 p. (Scottish life and society : a compendium of Scottish ethnology)

Widegren, O., (1998). 'The new environmental paradigm and personal norms'. *Environment and Behavior* 30 (1), 75–100.

Witzke, H.P. and Urfei, G. (2001). 'Willingness to pay for environmental protection in Germany: coping with the regional dimension', *Regional Studies*, 35(3), 207-214.

World Health Organisation Report (2005). *Make every mother and child count*. (<http://whqlibdoc.who.int/publications/2007/9241546077.pdf>, accessed 13 October 2007).

YAU, B.L.L.L. (1992) 'Environmental knowledge through the teaching and learning of geography'. *The Hong Kong Geographer*, 9(2), pp. 12-2

Ziadat A. H. (2010). 'Major factors contributing to environmental awareness among people in a third world country/Jordan', *Environ Dev Sustain*, 12,135 – 145.



## APPENDIX A

### Observation Guide

Characteristic to be observed	observed behavior
1. Are people seen dumping waste at unapproved places?	All the time
2. Do you see litter bins or waste collection containers around?	I saw few overflowing bins
3. Do people have latrine or other means of disposing human excreta?	Not all the house
4. Are people seen defecating along the beach?	Very early in the morning
5. What ages of people are seen?	Both adult and children Adult/children/both.
6. Are people punished for dumping waste.	No one is punished
7. Do people confidently dump waste or hide?	They dump it without worrying about who sees them

## APPENDIX B

### Questionnaire for respondents

University Of Education, Faculty Of Social Sciences. This questionnaire seeks to investigate the environmental attitude of inhabitants living in communities along Ghana's beach and you have been selected to help provide information to this research. Every information given here will be held in high confidentiality. Please feel free to express your sincere views on the following statements.

Tick with an (√) where appropriate.

1. Sex: Male  Female

2. Age: 20-30 years  31-40 years  41-50 years  51-60 years   
above 60 years

3. What is your level of education? Non  JHS  SHS  Tertiary

5. Number of years living in this community 1-4  5-8  9-12  more than 12

What type of housing unit do you and your family live? Compound house   
Detached house  Semi-detached house

What kind of toilet facilities are available in your house? Water closet  KVIP   
Pit latrine  Free range

## APPENDIX C

### Environmental Behavior Scale

Environmental Behavior	Yes	No
<b>dumping refuse at approved sites is the right to do</b>		
<b>I dumping waste places heaped with refuse</b>		
<b>I dump refuse into bins even when they are full so they overflow</b>		
<b>I dump refuse anywhere when no one is watching</b>		
<b>I dump refuse even when people are around</b>		
<b>It is insanitary to dump refuse in to the sea</b>		
<b>defecating along the beach affect aquatic live</b>		
<b>I sweep around my compound every morning</b>		
<b>I pass urine at any place I find convenient</b>		
<b>keeping refuse at home for days can lead to sickness</b>		
<b>I have no problem living in a dirty environment</b>		
<b>I clear weeds growing on my compound</b>		

## APPENDIX D

### Environmental attitude Scale

	Strongly Agree	Agree	Indifference	Strongly disagree	Disagree
Environmental education for people cannot help to resolve environmental problems, only technology can do this					
Universities should schedule more field activities because they help to understand the matter better.					
I am willing to consume less and go without some comforts if it helps to protect the environment.					
I believe that environmental problems are exaggerated, nature balances out over time.					
When I buy a product, I assess the type of packaging and choose one that is recyclable.					
The progress of a district should not be held up with the excuse of protecting some birds					
I like to participate in field activities because it is a good way of understanding the environment in which I live.					
I believe that information is increasingly necessary to be aware of the effects our actions have on the environment.					
I try to choose subjects that deal with matters related to the environment because I feel that I do not know enough.					
The laws and government regulate and control so much that there is very little contamination these days.					
If I have to choose between the construction of a motorway					

---

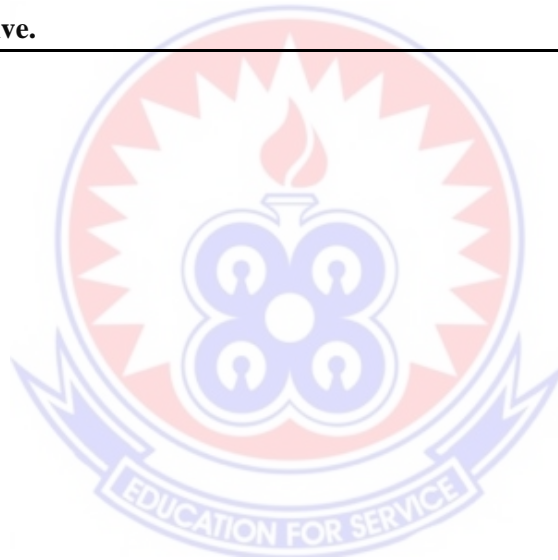
and the protection of a plant species, I choose the motorway. The benefits of modern consumer products are more important than the contamination caused by their production and use.

In my opinion, the more people know about the natural environment the better their defence attitude.

Environmental education activities are only useful for children.

We should try to conserve the Earth's plants and animals, even though it is expensive.

---





## APPENDIX E

### Environmental awareness scale

	True	False
I am concerned about the environment because of the consequence on health and global warming		
Raw sewage disposal into the sea adversely affects marine life.		
Stagnant water can breed mosquitoes		
Polluting our environment can affect global climate		
One way aquatic life is destroyed is dumping refuse in the sea		
Protecting the environment will help enjoy a quality life		
Our actions in our communities can put some plant and animal species extinction some time to come		
environmental friendly products help to sustain the environment		
I Participate in activities to save the beach environment		
Economical use of natural resources will sustain the environment		
Being aware of environmental issues		
I participate in saving green trees and vegetation		
I am concern about the ecology		
I am aware of environmental education, responsibility and laws		