

CHAPTER ONE

INTRODUCTION

Background of the Study

The greatest challenge facing countries in the world today as they strive to develop is not just a growth in national income, but the threat that environmental degradation is posing to the very survival of humankind. This threat ranges from problems of poor environmental sanitation such as plastic wastes littering, indiscriminate disposal of domestic solid waste, and open air defecation to the effects of global climate change due to emission of Green House gases like carbon dioxide into the atmosphere. Available evidence indicates that humansocieties have an unprecedented and dangerous impact uponthe global environment (Rosa, Diekmann, Dietz & Jaeger, 2010).

What people are doing to the environment upon which their existence dependshas aroused widespread concern, expressed in national legislations and international events such as the 1970 “Earth Day of the United Nations Conference on Human Environment” and most recently the International Year of Sanitation, 2008, to raise awareness and accelerate programmes towards achieving the Millennium Development Goal (MDG) target seven, that deals with environmental sustainability (UN, 2007).

It has captured attention of a growing number of sociologistsand has led, quite recently, to the emergence of a new sociological specialisation – “environmental sociology.” The purpose of this reviewis to enable me to describe the emergence of environmental sociologyand to delineate the essential characteristics that qualify this newspecialisation as a distinct area of

inquiry. In order to accomplish this, a number of more specific issues are addressed.

First, since sociologists were clearly not in the forefront of recent efforts to comprehend the causes and consequences of changing environmental conditions I briefly discuss disciplinary traditions that made it difficult for sociologists to recognise the importance of environmental problems and ecological constraints – to the extent that several important precursors of contemporary environmental sociology was largely ignored. The environment, the only life supporting system, is under serious threat through the action and inaction of humankind

In this regard, I consider environmental communication through the mass media as a development issue that could serve as a connective tissue, linking the various efforts of development or parts to make it a whole. As held by Rogers and Rogers (Aro, 2015, cited in Kaba, 2002), communication by itself touches every sphere of human activity, shaping all human actions, because of the need for constant interaction. The need to pay attention to communication in development does not, however, mean that communication is a complete substitute for other resources that bring about development. A mix of material and information resources can achieve a better result, perhaps at less cost hence the proposition that national development can never be attained without the fullest incorporation of environmental communication into development projects (Flor, 2004).

Generally, environmental communication is the gathering and dissemination of important environmental information about environmental issues related to socio-economic development, using different media such as

the mass media. It involves actual communication activities and strategies that are aimed at informing people about those environmental issues in expectation of appropriate behaviour from individuals and society at large (Kwansah-Aidoo, 2004). It is the foundation of establishing relationships between people and sustainable environmental practices. Environmental communication is usually linked with environmental education, public participation and environmental politics (Pillmann, 2000).

The environment is human life's supporting system from which food, air and shelter are derived to sustain life. It provides raw materials and energy for production and consumption. It serves as a sink for wastes generated. Literature shows that these wastes if not disposed properly can lead to environmental degradation and unsustainable development (Field, 1997, cited in Tenkorang, Kendie&Enu-Kwesi, 2008).

Hertsgaard (1992) is of the view that the environment holds a "strange" position in public affairs. But the central sources of power have long downplayed it. Economists have considered environmental issues as "externality", something outside of their calculations; politicians pay lip service and move on to other matters. The public responds favourably to environmental issues in opinion polls and then continue to use environmental resources wastefully or pollute it. This is a typical reflection of how the various segments of society perceive and relate to the environment. But all the while, environmental concerns gain influence, as public awareness of their pervasive influence on our lives grows (Hertsgaard, 1992).

Statement of the Problem

The Director of Environmental Health and Sanitation at the Ministry of Local Government and Rural Development (MoLGRD), Demedeme (2010) noted with grave concern that attitudinal and behavioural change is central to achieving sustainable progress in environmental sanitation. He therefore called on the media to engender a transformation in the attitude of Ghanaians towards best practices in sanitation.

Dartey (2011) observed that the mass media holds the key to influence attitudinal and behavioural change of Ghanaians particularly on the environment through conscious sensitisation and education. She further observed that journalists could do this effectively if they received training on environmental reporting and therefore called on the Environmental Protection Agency (EPA) to avail itself as an important news source. Dartey (2011) stated that environmental communication and media intervention were critical factors to EPA's organisational success as a government institution. .

Boateng (1993) advocating for sustainable development has suggested that the media should play a key role in addressing environmental crisis. In Ghana, institutions such as the Ghana Interaction Council (1990) and available documents, including Ghana Environmental Action Plan (1991), the Ghana National Report to the Earth Summit (1992), have all agreed that the mass media should be used as a vital means of environmental education (Kwansah-Aidoo, 1999).

Government with the establishment of the Environmental Protection Agency (EPA) in 1994 had mandated EPA to create awareness among the citizenry about the need to observe good environmental management and

practices. The EPA as part of its strategies identified the mass media, traditional rulers, schools among others as conduits through which it could make the citizenry appreciate the benefits of good environmental management and practices as well as the dangers society can face if it relates to the environment negatively (EPA, 1999).

Ghana also formulated an Environmental Sanitation Policy in 1999, which was subsequently reviewed and re-launched in 2010. For an effective implementation of the policy, Ghana further came out with a comprehensive National Environmental Sanitation Strategy and Action Plan (NESSAP) 2010-2015 (MLGRD, 2010). Waste Management experts, Zoomlion Ghana Limited, have also re-echoed the need for attitudinal change towards sanitation in Ghana during their recent visit to Cape Coast embarking on Environmental Sanitation Campaign (Coleman, 2015).

Despite all the efforts and information available, hardly will a day go by without a mass media report on the incidence of environmental abuses. Radio, television stations and newspapers often carry news on huge heaps of garbage at almost every corner of cities, urban and rural areas. They report on gutters choked with plastics and flying polythen bags competing with people for space at various public places. Water bodies have become polluted with both solid and liquid waste. This usually results in heavy floods due to choked gutters and blocked drainage systems, thereby rendering thousands of people homeless. Indeed, a joint report by the United Nations on Children Fund (UNICEF) also indicated that out of 53 African countries, Ghana ranked 48th in poor sanitary conditions (Obeng, 2008).

The following are also a few newspaper report headlines from the media on sanitation: ‘Quashigah decries filthy environment’ (Adomah, 2008). ‘This is shameful: Media discuss role in improved sanitation in Ghana’ (Akpalu, 2008). ‘Promote responsible use of plastics’, ‘Sanitation worsens in La Sub- Metro, Don’t dump refuse into drains’ (Adomah, 2008). The question that arises is to what extent has environmental communication through the mass media influenced the environmental consciousness of the citizenry, especially urban community dwellers? This is what this thesis seeks to address.

Purpose of the Study

The general objective of the study was to examine how environmental communication through the mass media affects the environmental consciousness of urban community dwellers. Specific objectives of the study were to:

1. Examine the types and contents of environmental information disseminated by the mass media on littering with respect to plastic bags, domestic solid waste and open air defecation in the urban communities of Cape Coast Metropolis.
2. Examine the strategies employed by the mass media to raise environmental consciousness of urban dwellers in the Cape Coast Metropolis.
3. Examine how environmental information given by the mass media on environmental sanitation affects the environmental sanitation practices of urban dwellers in the Cape Coast Metropolis.

4. Make recommendations to policy makers on types of environmental information missing from mass media coverage.

Research Questions

To address the above objectives, these research questions were proposed to guide the study of the problem under investigation.

1. What are the types and contents of environmental information disseminated by the mass media on littering with plastic bags, domestic solid waste and open air defecation in the urban communities of the Cape Coast Metropolis?
2. What are the strategies employed by the mass media to raise the environmental consciousness of urban community dwellers in the Cape Coast Metropolis?
3. How does the environmental information disseminated by the mass media on littering affect the environmental sanitation practices by urban community dwellers in the Cape Coast Metropolis?

Scope of the Study

The channels of environmental communication are many. Examples are communicating environmental issues through drama, traditional folklore, interpersonal communications and the mass media among others. In Ghana for instance, the deregulation of the mass media industry has given birth to proliferation of media houses, both electronic and print. Technology has also brought about easy access to communication gadgets such as miniature radio sets, televisions, mobile phones with radios, etc. Therefore, access to information through the mass media has become simplified.

Mass media used in this study is limited to radio and television (TV), stations that listeners and viewers receive signals for in the Cape Coast Metropolis, including Accra based TV3 and Metro TV which among others play important roles of informing, educating, entertaining and preserving the culture of the listeners and viewers. I chose radio and TV for this study because of their wider reach or exposure and economic advantage to the user in terms of affordability as compared to daily purchase of newspapers. In addition, radio programmes have the advantage of reaching people where ever they are, at homes, in vehicles and at work. The television also offers an advantage of visual appeal (Austin & Husted, 2010).The specific environmental sanitation issues I reviewed for environmental consciousness of urban community dwellers were; littering with plastic bags, domestic solid wastes and open air defecation.

Significance of the Study

This research would add to literature on environmental communication through the mass media. The successful completion of this study would help the stakeholders to identify the strategies employed by the mass media to raise awareness. This study also provides empirical research on the types and contents of environmental information in Ghana. It also makes it possible to analyse the effects of environmental information on the environmental practices by urban dwellers in Cape Coast, in particular, and Ghana in general. This would inform policy formulation on how to tackle the environmental sanitation problems of littering with plastic bags, domestic solid waste and open air defecation into gutters and around beaches. Finally, the study further provides scientific information for government and municipal policy makers,

environmental activists, researchers and other relevant bodies to enhance their environmental management efforts.

Limitation of the Study

Environmental sanitation news broadcasts from three TV and six FM stations were to form part of the study for content analysis. These stations are Metro TV, TV3, Coastal TV, ATL FM, Yes FM, Radio Central, Ahomka FM, Eagle FM and Sompa FM. Apart from TV3 the other stations could not provide the necessary records of the news bulletins for the study. Metro TV for instance could only provide headlines of environmental sanitation news they had covered without details. Notwithstanding, this will not have any adverse effect on the findings.

Organisation of the Study

The study on environmental communication and environmental consciousness of urban dwellers in the Cape Coast Metropolis was organised as follows: Chapter One discussed the background to the study, statement of the problem, general and specific objectives, research questions, scope of study, significance of the study and limitation of study.

Chapter Two reviewed related literature on the environment. The chapter continued with the discussion on the relationship between environment and development, environmental degradation and poverty. It also discussed the effects of littering with plastic bags, domestic solid waste and open air defecation as a global issue and highlighted the plastic waste menace of Africa in general and Ghana in particular. This was followed with the discussion on the need for environmental communication and its role in urbanisation, Ghana's efforts to promote environmental communication and

the role of the mass media in promoting environmental communication. The chapter concluded with the discussion on the mass media, theory and the conceptual framework of the study.

In Chapter Three, the study described the study area, research design and the study population. The chapter also include the determination of sample size, socio-demographic characteristics of the respondents, sampling techniques, instrument for data collection, sources of data, of environmental consciousness and techniques of data analysis. Chapter Four dealt with results and discussion of findings. Finally, Chapter Five summarised the findings, conclusions, recommendation for future research and actions to be taken by specific institutions or individuals.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews related literature to the study. It examines the theoretical and conceptual framework underpinning environmental communication. The review is done under a number of sub-headings such as the environment, environment and development, environmental degradation and poverty, the effects of plastics and plastic rubber littering on the

The Environment

Environment, according to Encarta (1999), is the natural world within which people, animals and plants live. Ecologically, it is all the external factors influencing the life of organisms such as light or food supply. There are many interpretations of what is meant by the environment. In its most general sense, the environment refers to our surroundings, and it is often understood to include not only the media (physical attributes of land, air and water) but also the built environment and the condition of our local amenity and neighbourhood (Wolf & White, 2000).

According to the Environmental Protection Act (EPA), 1990 of UK and European Community, “the environment consists of all, or any of the following media, namely: the air, water and land; and the medium of air includes, the air within buildings and the air within other natural or man-made structures above or below ground”. Wolf and White (2000) were of the opinion that the above definition includes environmental challenges ranging from ecological problems to more obvious problems such as noxious emissions into the atmosphere.

Generically, the term environment is from the French word 'environner', which means to encircle or surround (Cunningham, Cunningham & Saigo, 2003). Literally, it refers to anything either tangible or abstract, found around an organism or group of organisms. The environment therefore has the capacity to influence the life and development of organism (s) it surrounds. The reason is that, the organism(s) resort(s) to the environment for their survival. It is for this reason that the term environment is often associated with any life supporting system.

According to Obeng (1980) and Yankah (1991), the environment connotes a much more complex meaning than it used to be in the mid-19th century. It consists of the political, socio-economic, business and the physical or natural surroundings. This extended connotation of the term environment may be due to the change in the factors that affect the totality of the development of humankind. Obeng (1980) refers to the environment as both the natural, physical surroundings and the social conditions that impact upon the physical, mental and moral development of humankind. The biosphere, which is the physical or natural environment, is the "only" home for life for both plants and animals on this planet. This biosphere includes everything in living space, that are made up of the sea or the land, soil or water, the chemical constituents and the physical properties of the living space, the climate and variety of organisms (Mayhew, 1997).

The physical environment can be seen as a changing and multifaceted system which reflects the interdependence of living things and their relationship with land, air and water. The social environment is the creation of humankind which he or she does by collaborating with nature and changing

some aspects of it to make life meaningful to them. The environment is important to the existence of humankind because the basic necessities of life such as water, air and food are obtained from it (Trivedi, 1997). Ehrlich, Ehrlich and Holden (1977) are of the opinion that the environment is a part of humankind. Considering the generality of the importance of the environment, one can say in religious terms that the environment made of air, land and water is the ‘Trinity’ for the physical salvation of humankind on earth.

Conceptually, the term environment as a social construct evolved as a result of a particular world view on the relationship between humankind and nature. It is the result of the evolution of various proposed paradigms on environmental management and conservation, which emerged in the succession of the frontier Economics, Deep Ecology, Environmental Protection, Resource Management and Eco-development. These paradigms are not distinct or unrelated (Colby, 1989).

From the above, it is obvious that all human activities, socio-economic and cultural, take place in the context of certain types of relationships with the bio-physical world since the environment does not exist as a sphere separate from human actions, ambitions and needs (Colby, 1989). The issue has been so paramount that the World Development Report of 1992 was themed, ‘Development and the Environment’ based on the fact that the manner in which the environment and environmental assets are managed has important consequences on the economy (Tutu, 1996).

The successful management and conservation of the environment in any country for sustainable development depends to a large extent on the effective integration of environmental communication into development

programmes at both micro and macro levels. Kwansah-Aidoo (2004) asserts that some countries in Africa such as Morocco, Tunisia and Egypt seem to be succeeding in their development efforts because they have integrated environmental communication into their development plans.

Environment and Development

Environmental issues were not the focus when the UN was inaugurated in 1945. Global environmental issues did not really feature significantly on the international political stage as far as the United Nations and other formal negotiations were concerned until the early 1970s. The main preoccupation of the UN was peace and security, international cooperation and human rights (Rechkemmer, 2006). There was no reference made within the provisions of the UN Charter about the environment. There was some attempt, though, in 1962 but it was mainly related to relevance of and conditions in the industrialised countries (Pugh, 2002).

The various UN Development Decades celebrations were more geared towards purely classical economic growth, nourished from Adam Smith's classical economic theory of *laissez faire* as contained in his famous book, 'The Wealth of Nations' (Barrow, 1995; McEachern, 1988). The Themes that characterised the UN celebrations until the 4th Decade were: Aid, Redistribution with Growth and International Economic Order. It was only after its 40th year that concern for democratic and participatory approaches to promote human development (adjustment with human face) for sustainable development and environmental quality were highlighted (UNDP, 1991; World Bank, 1992).

In 1968, the United Nations General Assembly first recognised the need to engage in international environmental issues thus leading to the passing of Resolution GA23/198, which states that greater attention should be given to human environment as the basis for sustainable economic and social development (Rechkemmer, 2006). It was then that the UN General Assembly expressed the hope for donors to assist developing countries, through enhanced means of cooperation, to come out with appropriate solutions for their environmental problems. There are, however, some general characteristics about environmental law and policy in developing countries that deserve to be mentioned in the context of international investment rules. First of all, developing states are to a greater extent dependent on foreign investments to exploit minerals or increase productivity in industrial production or in agriculture sectors than are non-developing states. At the same time the people most vulnerable to environmental damage live in developing countries, as the majority of the world's economically poor people and indigenous peoples do so. This makes the environment-investment context even more urgent to discuss in the context of developing states (The Diffusion of Environmental Policy Innovations, 2006).

This further global action to put premium on environment and development was the multilateral achievement in founding the United Nations Environment Programme (UNEP). A major global environmental effort by the UN through UNEP was the establishment of the World Commission on Environment and Development(WCED) in 1984, whose final report, Our Common Future or Brundtland-Report, has become the locus classicus for the term sustainable development (Rechkemmer, 2006). The Brundtland report

says: Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of the future generations to meet their own needs (WCED, 1987). Besides, as Barrow (1995) put it, in the 1990s the space age seemed to give way to an environmental age.

The Brundtland report of 1987 for WCED posits that the environment is where we all live, and development is what we all do in trying to enhance our lot within that abode. Hence, the environment and development, the report claimed, were inseparable. Tutu (1996) asserts that there is a strong relationship between environment and development to the extent that environmental problems can economically undermine development. In this context, development has been used to imply the existence of opportunities that enable people exploit their potentials. To buttress this assertion, Tutu (1996) explained that first of all good environmental quality was an improvement in the welfare of people. This, therefore, means that if the net financial benefits from an activity are outweighed by the costs imposed by it through pollution, for instance, then this cannot be development. Secondly, environmental degradation can affect the future negatively. Thus, environmental issues are issues of development and these apply to developed, developing or less developed countries (Tutu, 1996).

Though environmental issues are of global concern, the levels and nature of environmental degradation vary from country to country, depending on each country's level of industrialisation and what in its cultural context constitutes environmental problems or degradation. For example, in the developed nations of the world, environmental problems appear to be the

result of industrialisation and the enjoyment of other good things of life, that come with technological advancement. Thus, acid rain pollution from exhaust fumes and Chloroflouro Carbons (CFCs) are some of the environmental concerns of the developed world (Tutu, 1996).

On the other hand, some of the environmental problems that plague the developing or least developed nations are in the form of dwindling forest resources, as a result of over reliance on wood for fuel and export; unclean water resources, as a result of human and animal pollution; over exploitation of the land, as a result of over-dependence on extensive agriculture; bush burning; and a lot of other poverty related problems (Tutu, 1996 cited in Kwansah-Aidoo, 2004; Ogunleye, 2004). The activities of humankind, whether economic or social could, therefore, lead to environmental degradation if not consciously managed. What then are environmental degradation and its relationship with poverty in the context of development?

Environmental Degradation and Poverty

Development is the most crucial challenge facing the human race, especially in the world's poor countries. This challenge in the broadest sense is to improve the quality of life of citizens of these countries. Until recently, development has been measured by insensitive statistics like the crude Gross National Product (GNP), GNP per capita and the level of modernisation (Barrow, 1995). However, a recent yardstick for measuring development takes very much into consideration the human element; his or her level of awareness and intellectual attainment (Flor, 2004).

Development is a multifaceted issue and its definition depends on what the current values of those making the definition and the prevailing situation

(Barrow, 1995). It is argued that, a better quality of life generally calls for not only higher incomes but also a cleaner environment (World Bank, 1999). Quality of life from the view point of United Nations Education Scientific and Cultural Organisation (UNESCO), United Nations Organisation (UNO) and United Nations Development Programme (UNDP) is an all-inclusive concept, which covers all aspects of living, including material satisfaction (Bala&Mukhi, 2007). To Bala and Mukhi (2007), it also includes fundamental needs as well as more “transcendental” aspects of life, such as a friendly ecosystem in which humankind live. A study by the East Midlands Development Agency and Regional Partners (2002) on the environmental economy of the East Midlands also indicated that, a high quality environment contributes significantly to improving quality of life, which is the ultimate aim of any development effort. For an appropriate definition for development as far as this study is concerned, the researcher may want to agree with Wang and Dissanayake (1981), who defined development as:

“The process of social change which has as its goal the improvement in the quality of life of all or the majority of the people without doing damage to the natural and cultural environment in which they exist and which seeks to involve the generality of the people as closely as possible in this enterprise, making them masters of their own destiny. This definition shows the relationship that exists between development, environment and society or people which is the main focus of the study” (p. 217).

Development, as mentioned earlier, has to do with the quality of life of people. A major aspect of improving the quality of life of people is to eradicate or alleviate poverty, especially, in developing countries. Poverty is a condition of having insufficient resources or income. In its extreme form, poverty is lack of basic human needs, such as adequate and nutritious food, clothing, housing, clean water and health services (Corbett, 2007).

To some, poverty is the result of environmental degradation. It is a reduction in the capacity of our 'surroundings' to satisfy human needs as a result of air or land pollution, soil erosion, salinity, alkalinity, deforestation and water pollution (Anthony, 2000). To others, however, the reverse is the case; that is, environmental degradation gives birth to poverty. Whichever position one may take on the relationship between environmental degradation and poverty, the argument is like the popular saying, "The chicken and the egg, which one comes first?" Environmental degradation or poverty, which one comes first? They are both contentious development issues in which case those who hold a neutral position will say, the two reinforce each other. In other words, each could be a cause and effect when put in a context of economic survival.

Like poverty in developing countries, debt has been shown to result in resource stripping just to pay off debts. Notable examples of such scenarios were Nepal and Bangladesh, which have suffered from various environmental problems such as increasing devastating floods, often believed to have resulted from large-scale deforestation (Shah, 2005).

Based on the above discussion, one may want to ask if a negative behaviour, such as littering with plastic bags, open air defecation and

indiscriminate dumping of domestic solid waste into water bodies and drainage systems are also poverty-induced environmental degradation? Littering is an act of spreading rubbish across (i.e., throwing, dropping or depositing rubbish in an area or at public places untidily). Thus, creating an eyesore and environmental damage (Cambridge Advance Learner's Dictionary, 2005; [www encams.org](http://www.encams.org)). Litter ranges from the smallest rubbish particles such as sweet-wrappers and chewing gums to heavy equipment such as abandoned broken down vehicles carelessly left by the road sides (www.encams.org).

The Protection of the Environment Operations Act 1997 of Tasmania defined littering as any solid or liquid, domestic or commercial refuse, debris, or rubbish. The Act, without limiting the generality of these, also includes any glass, metal, cigarette butts, paper, fabric, wood and others. A good number of authors attribute the prevalence of parasites, tetanus, malaria, hookworm, cholera and diarrhoea so common in many African countries to unhygienic environment caused by waste being strewn around (Achankeng, 2003). Ngnikam (2001) and Sam (2009) asserted that uncollected wastes which is illegally dumped in open spaces, water bodies, storm-drainage channels or deposited along streets, block drainage channels thus causing increased floods in cities. This negative environmental behaviour imposes a huge socio-economic cost, if even all the harms caused to the environment are possible to mitigate. Scarce economic resources and productive man hours, which could have been invested in poverty alleviation ventures to improve the quality of life of people are diverted into waste management, rehabilitation of flood victims and rebuilding of infrastructure destroyed by flood. In recent time, littering has become a nagging environmental issue. It has been revealed that

94% of people consider littering as a major environmental problem and yet people continue to litter (Prague Post Endowment Fund, 2003). An environmental education program of the Prague Post Endowment Fund on litter has identified the following as primary sources of littering: Pedestrians dropping garbage in the streets or gutters; motorists discarding garbage out of the windows of moving cars; and uncovered loads easily blowing out of trailers. The rest are: improper collection and disposal of household refuse; animal scavengers and wind dislodging unsecured refuse in street corners, markets and other places for collection. The rest of the sources of littering include, poorly secured commercial refuse disposal; construction projects; people at leisure such as beaches; and intentional or habitual littering (<http://www.planetark.com>).

Littering has been identified as one of the oldest forms of environmental degradation, which antilitter activists, environmentalists and various agencies at all levels of government are seeking to curb (Singhapakdi&LaTour, 1991). Carelessly discarded garbage has negative environmental, social and political impacts on society. It affects every member of the society because of the harm it causes to humankind, animals and also the damage it causes to water ways and water bodies. It also affects the aesthetics of the surrounding. The effect of this negative practice undermines the concept of sustainable development (Wienaah, 2007).

The attitude of modern human kind towards the environment was pointed out by Schumacher (1975). Schumacher postulates that the modern man does not 'experience' himself as a part of nature, but as an outside force destined to dominate and conquer it. Though this postulation may be typical of

issues of environment at a macro level, such as mining, advanced technology and industrialisation, the attitude of the traditional man towards the environment at the micro level, can equally not escape scrutiny. For instance, the individual's negative behaviour expressed in activities such as littering, improper disposal of waste, bush burning are of equal importance in the environmental discourse.

Human beings, Gilbert (1990) asserted, have been treating the planet as a humongous garbage can rapidly filling up the ground, water and atmosphere with all sorts of pollutants. From a historical perspective, Gilbert (1990) said that when human beings lived in small groups of hunters and gatherers, they could get away with discarding their trash wherever they pleased. Now the world population is over 6 billion and we produced non-degradable and toxic wastes such as plastic and polythene that remain poisonous for centuries (Aronson, Wilson & Akert, 1999). Could this sad situation result from a boom and innovation in the petrochemical industry, lifestyle or an attitude? In Ghana for instance, plastic waste is said to constitute the second largest waste by volume and weight (Anku, 2009). It constitutes 4% of the total volume of waste generated in the country and yet it is one of the greatest environmental challenges facing the country. No wonder His Excellency, then Vice President, John Dramani Mahama expressed worry about the environmental pollution. The study will also look at littering with domestic solid waste into drainage systems, water bodies and open air defecation. The reason for a greater focus on plastic waste littering is that, even though plastics represent a small fraction of littered waste it has become iconic and among others a

worrying nuisance to society at large due to its universal usage and long-time degradability and toxicity (Aronson et al.,1999;Schumacher, 2010).

Table 1 shows the time it takes for some plastic litter items to decompose in the environment.

Table 1:*Decomposition Time of some Plastic Litter*

| Litter item | Time to break down |
|----------------------------|--------------------|
| Mono filament fishing line | 600years |
| Plastic beverage bottle | 450 years |
| Disposable Nappies | 450 years |
| Foam Plastic cup | 50 years |
| Plastic bags | 10-20 years |

Source: US National Plastic Service, Mote Marine Laboratory, Florida (2012)

The Effects of Plastics and Plastic Rubber Littering on the Environment

Plastics are synthetic substances produced by chemical reactions from petroleum, a non-renewable resource. The name plastic is derived from their properties of being moulded, cast extruded or processed into a variety of forms including solid object, films and filament. From plastics, plastic bags are made. About 4% of the world’s total oil production is used as feedstock for plastic bags (Moorthy, 2009). They are highly convenient, strong and inexpensive (Ellis, Kantner, Saab & Watson, 2005). There are several issues associated with the production, use and disposal of plastic grocery bags, which may not be initially apparent to most users. The manufacturing, use and immediate disposal of plastics bags have environmental, health, social and political impacts on society (Ellis et al., 2005).

The world as a whole has come to live in a plastic convenience culture, where virtually every human being on the planet uses plastic materials directly or indirectly every single day. In the advanced economies, babies begin life on earth by using some 210 billion pounds of plastic diaper liners every year. They are given plastic milk bottles, plastic toys. Their food is bought in plastic jars and plastic credit cards are used for payment (Environmental Protection Authority, 2002). An Environmental Education Programme of the Prague Post Endowment Fund (EEPPPEF, 2003) reveals that people eat and drink from some thirty-four billion newly manufactured bottles and containers. They patronise fast food restaurants and buy fourteen billion pounds of plastic. The report says, in total, societies produced an estimated sixty billion tons of plastic materials since July 8, 2009. Each person on average, annually, uses 190 pounds of plastic made of bottled water, fast food packaging, furniture, syringes, computers and computer diskettes, packing materials, and garbage bags among others (<http://www.planetark.com>; <http://www.earthsky.com>).

Among these are the ubiquitous iced-water sachets and plastic grocery bags, which have become one of the most common items in our modern world. The year 2007 marked the 30th plastic shopping bags' anniversary since their introduction in 1979. Trillions of plastic bags have so far been used and discarded globally (CleanUp Australia, 2007). With an increasing population, many processes are carried out to be practical and cost effective rather than safe. The biggest problem however, is that many people are not aware of the damaging health and environmental effects these activities may cause (Strain, 2009). The harmful effects of plastic bags on the environment could be seen from the stages of manufacturing, its usage, and the immediate disposal.

At the manufacturing level, energy required is quite enormous. Apart from this, the resultant effects of production process are air and water pollution, health risk, and also shipping and transportation hazards (Ellis et al., 2005).

In the US alone, about a hundred billion plastic grocery bags are used each year (Environmental Pollution, 2008). Countries like the United Kingdom and Australia, for instance, consume between eight and ten billion plastic bags annually. In Taiwan, this number rises to 20 billion (Brown, 2003 cited in Ellis et al., 2005). Germany, France, Japan, Bangladesh, South Africa, Australia and New Zealand are having or have had negative experiences with the menace of plastic bags in one way or the other. These constitute both land and marine litter if they are not consciously disposed of. Litter negatively affects socio-economic activities such as agriculture, health, and tourism and job-creation.

Taking marine litter for example, Charles Moore a Californian sailor, surfer and a volunteer environmentalist, who was said to be on an expedition in 1997 discovered that the Great Pacific, North of Pacific Subtropical Gyre, has become 90% non-degradable plastic (Grant, 2009). The Gyre is a converging point for several major sea currents with biodegradable float scum from the Pacific Coasts of South-East Asia, North America, Canada and Mexico (Grant, 2009). The Great Pacific garbage patch, though not a solid mass is said to be twice the size of France, hosting six times more plastics than plankton. The North Sea has become a rubbish dump in which 20,000 tonnes of garbage are deposited each year through littering and industrial activities. Apart from being an environmental issue, it poses threats to livelihood in the

sense that fishermen do not get the commensurate results in spite of their inputs when they go fishing (<http://www.handsontv.info>).

Estimates suggested that around 80% of marine debris come from land based sources such as recreational activities and 20% from ocean based sources; the compounding vectors being rivers and storm drains discharging litter from inland urban areas. Statistics from the UN reveal that there are 46,000 pieces of plastic per square kilometre of the world's oceans, killing a million sea birds and 100,000 marine mammals each year thus creating various adverse ecological impacts (Grant, 2009). Among key socio-economic sectors that suffer from marine plastic litter are fisheries, aquaculture, human health, recreational and leisure usage, navigation (military and non-military), power generation, flood defence, agriculture and aesthetic intangible costs (Fanshawe&Everard, 2002).

One social indicator for measuring development is employment or job creation. Littering affects job creation opportunities because, investors would want to invest in a clean environment for good returns. CPCB (2002) asserts that Conway County's largest city in the United States did not "show well" to industrial prospects due to littering and therefore lost more than 1,000 jobs after two industrial plants closed down for four years.

Whatever dimension environmental degradation may assume in countries of the world, the underlying factor is that there is a relationship between poor environmental behaviour and development. This therefore requires a certain positive relationship between humankind and the environment (Kwansah-Aidoo, 2004).

Indeed the plastic litter menace is a global issue involving so many countries and cities. A typical case is Arkansas in the US where its 100,000 acres of public road-side along its 16,367 mile state highway have been engulfed with litters (Fobil, 2009). It costs Arkansas more than \$2 million yearly to clean up along the highways. In the US, it cost hundreds of dollars per tonne, about ten times more than the cost of trash disposal, which amount to \$11 billion annually. The story is not different for huge economies such as Europe, India and China.

The Situation of Littering in Africa

Africa's economy is mainly agrarian where around 60% of its population depends on agriculture for their livelihood (Economy of Africa, www.wikipedia.com). The continent is plagued with poverty, hunger, disease and unemployment. Poverty across the region has meant continued loss of forests and other precious environmental resources (Economic Commission for Africa, 2005).

Statistics have shown that many areas on the continent are losing over 50 tonnes of soil per hectare per year. The warning is that Africa needs to conserve her wealth. This depends on her ability to conserve and manage her land resources (FAO, 2009).

Soil erosion, desertification, deforestation and poor agricultural practices are the mainstream causes whose effects or impacts on Africa are already devastating. Already, Africa is said to be in environmental crises. The Continent has overdrawn its environmental accounts and the result for most of Africa, South of the Sahara, has been environmental bankruptcy (Timberlake, 1985).

Globalisation has raised some troubling concerns for the developing world, including Africa. One such concern is its impact on urbanisation and the ramifications that go with it. Cities are traditionally engines of social modernisation and economic growth and at the same time theatres in which globalisation stages its actions. For Africa, this has meant fuelling the already unprecedented urban growth phenomenon and increasing the challenges that go with it. One of these challenges is sanitation (Achankeng, 2003).

The plastic litter menace, therefore, is going to be a double agony if environmental communication through the mass media and environmental consciousness on littering and indiscriminate disposal of waste by individuals is not made a priority. For instance, in sub-Saharan Africa, the last few decades have witnessed a steady increase in the usage of plastic products resulting in a proportionate rise in plastic wastes in the municipal solid waste streams in large cities (World Bank, 1996; Yankson, 1998). The need for a more hygienic mode of packaging food, beverages, iced-water and other products, brought plastic packaging to replace the existing cultural packaging methods such as leaf wrappers, usage of brown paper and metal cups in cities and towns. Fobil and Hogarh (2006) were of the view that the drastic change in the plastic packaging product has not been correspondingly backed by appropriate plastic waste management policy. This weakness has left many cities in Sub-Saharan Africa littered with plastic wastes thus resulting in visual nuisances and other public health problems. Most countries in Sub-Saharan Africa do not have data on waste stream composition but individual management authorities recognise and acknowledge the growing magnitude and prominence of the plastic waste problems (Fobil&Hogarh, 2006).

In South Africa, for instance, plastic bags have littered the streets to such an extent that they earned the nickname ‘national flowers’. They could be seen flapping from fences and caught in bushes (www.wikipedia.com). In Tanzania, the environmental director, Mugurusi (2006), said ‘the place has become an eyesore, plastic bags fly very easily and their use is widespread – almost every town and city, the litter is conspicuous’.

The per capita generation of plastic wastes in Ghana, stands at 0.016-0.035kg/person/day. Plastics make up between 8-9% of the component materials in the waste stream (Fobil&Hogarh, 2006). Empirical evidence available on plastic waste composition in the waste stream in Ghana shows a rising trend. The percentage by component in 1979 was 1.4% and by 1993 it had risen to 4% (Schwizer&Annoh, 1996). Between 1996 and 1997, the proportion of plastic waste in the waste stream was 5% (Schwizer&Annoh, 1996; Archer, Larbi&Anim, 1997). This proportion had increased to 8% by 2000 (Worlanyo, 2013). In Ghana, the perception that sachet water is cleaner and more mineralised than tap water is one factor. People after gulping down the liquid content discard the sachet bags indiscriminately thus, littering the whole environment (Wienaah, 2007). Sachet water bags appear in very high proportion in the municipal solid waste stream causing environmental problems such as choking of animals and soils, blockage of water ways and rivers; blight of landscape and trees; and resource depletions (Wienaah, 2007). The sachet bags choke the drainage systems in urban centres of the country to such an extent that it takes only the slightest of rainfall to cause floods in the major cities like Accra, Kumasi and Takoradi. A Daily Graphic report of March 16, 2005 captioned, ‘The recent rains in Accra exposed the havoc being

caused by plastic waste' tells it all. A minimum of two hours rain in Accra on March 15, 2005 for instance led to flooding in some parts of the city. A few years ago, the same duration of rain would not have resulted in flooding (Fobil&Hogarh, 2006).

Tutu (1996) revealed that the damage caused to property through flooding and fire was \$2.82 million. Though Tutu could not indicate by specific quantum how much of this was due to environmental degradation, he assumed that at least half of the total imputed cost would be a result of degradation. He imputed \$1 million per annum of property damage (35% of the total) to poor environmental management. The researcher's worry about this figure is that, it did not include environmental degradation due to plastic waste littering. At the time of his findings, the country's GDP growth was about 4%. To the researcher, this figure would perhaps have been non-existent if environmental cost of plastic littering were factored into the environmental accounting that Tutu did at the time. This is because, even though the environmental degradation cost was underestimated, the figure was still about 4%. One can therefore imagine the real cost today if the cost of havoc due to littering was also added.

The Environmental Sanitation Policy of Ghana (1999) acknowledged environmental sanitation as an essential factor contributing to health, productivity and welfare of the people of Ghana. Government has identified sanitation as an urgent task to tackle. In the president's State of the Nation's address (2009), His Excellency, the late Professor Evans John Atta Mills announced that 21million Ghana Cedis would be allocated to tackle sanitation in the urban communities in the country. A yearly programme, dubbed

“Environmental Film Festival of Accra, 2009”, which was produced by a Non-Governmental Organisation, Creative Storm, in collaboration with UNICEF, British Council and other international organisations, vividly tell the story in motion pictures the menace waste plastic bags are causing to the environment at both national and international levels (www.effaccra.org).

The film on Ghana’s plastic waste menace at Agbogbloshi, a busy commercial suburb of Accra, is so horrible that the then Vice President, Mr. John Mahama, was moved to remark, “We are drowning in plastic, if we cannot handle the situation, then we have to ban the production of plastic bags”. In the same film came a very emphatic “No” response from the manager of the Poly Group Ltd, the biggest poly product manufacturer in Ghana, “Government cannot ban polythene bags.” Could these remarks from these two personalities be considered a verbal war as to where power lies?

Government needs investors to create jobs but at the same time government and citizens must cooperate to ensure proper conservation and protection of the environment. What is the way forward out of this menace? In a discussion shortly after the film show, a contributor retorts, “But plastics by themselves do not walk into the drainage systems or the streets or public places”. Who then walked them into the drains, one may ask? It is certainly individuals with certain negative environmental attitudes that must be responsible for that. A reader’s comment in a newspaper on the sanitation problem at Mallam Atta Market, New Town, Accrawas:

“The refuse had heaped into rounded mounds and into the gutters. The sanitation workers sweep the lorry stations in the morning. By dusk the stations are in a

mess again. Therefore, the clean-up alone though a very important part of the solution, is somewhat a superficial approach to solving the problem. This is akin to cutting a tree and leaving its stump in the soil. Attitudinal change is required to solve the problem” (The Daily Graphic, 2008, p.9).

Open Air Defecation

It is said that environmental sanitation is the most important medical advance since 1840 and that improved sanitation reduces cholera, worm infestation, diarrhoea, pneumonia and malnutrition among other maladies that cause diseases in millions of people (Langergraber&Muellegger, 2005) Ghana’s environmental sanitation policy also acknowledges that environmental sanitation is an essential factor contributing to the health, productivity and welfare of the people of Ghana. It is identified in Ghana's programme of economic and social development set out in “Vision 2020” as a key element underlying health and human development(MLGRD, 2009).

The term “sanitation” has been interpreted and used by different people in different ways. During the International Drinking Water Supply and Sanitation Decade (1979-1990), emphasis was placed on service coverage and construction target (IRC, 2000 cited in Tenkorang, 2002). The World Summit for Children, who set the goals for child survival, development and protection, identified access to sanitary means of excreta disposal as the basis to measure progress under sanitation (UNICEF, 1992).

Toilet Facility Coverage in Ghana

Access to proper sanitation is poor. As reported by Ghana Water Sector Restructuring Secretariat (WSRS) in 2005 the percentage of the population with access to improved toilet facilities was approximately 40 per cent in urban areas and 35 per cent in rural areas. To meet the Millennium Development Goals, sanitation coverage must be increased to 80 per cent (AfDB/OECD, 2007). At the end of 2006, CWSA contributed about 10 percent to the national sanitation coverage (CWSA, 2007).

According to Okechukwu, Okechukwu, Noye-Nortey and Owusu-Agyei (2012), toilet practices among the inhabitants of Kintampo District of Ghana concerning the lack of basic sanitation which resulted in the world's biggest cause of infection reveals that piped sewage systems and wastewater treatment plants serve only a small fraction of people in developing countries. The poor are left with either on-site systems of storing their waste such as pit latrines, or practice open or roadside defecation, while the rest use buckets, and plastic bags to dispose of faeces. To document the toilet practices and knowledge of its health implication among the inhabitants of Kintampo North District of Ghana.

Okechukwu et al. (2012) used an analytic cross-sectional study design including the use of qualitative methods was used to examine the household and community toilet practices among the inhabitants of the Kintampo North District. Majority of the household heads interviewed 176 (70.4%) were males, 74 were (29.6%) females, 134 (53.6%) were not educated, and 55.5% were either farmers or labourers. Only 15.6% of the 250 household heads admitted having toilet facility in their homes, the remaining 84.4% do not have

any place of convenience where they live. Pit latrine (45.6%) was the predominant form of toilet system in the community, bucket latrine (2.5%) was less common, and only a hand full had water closet toilet facility.

While 38.3% of households without any place of convenience in their homes practiced open range defecation, 61.3% relied on public latrines for their toilet needs. The majority, (63%) of households that used community toilet, used it because of convenience, 5% used it because it was free, while 36.4% of those who practiced open defecation did so because of insufficient toilet facilities in their vicinity. There was an association between type of occupation of household heads and ownership of a toilet [$\chi^2 = 20.5$, p-value = 0.002], the number of toilet facility owned ($\chi^2=30.3$, p-value <0.01), and type of toilet owned ($\chi^2= 53.7$, p-value <0.01). For children < 6 years in the households with toilet facilities, 56.6% defecated in chamber pots, 30.4% defecated at the refuse dumps, while 13.9% defecated on the floor. Major means of disposal of children's faeces in chamber pots were by dropping it at the refuse dump (39.1%), and in the pit latrine (26.1%), only 17.4% bury theirs in the ground. Though (28.4%) of the sub-districts of the study area had fair knowledge of diseases related to human faeces, 69.2% had either poor knowledge or no knowledge at all, the knowledge of which was greatly influenced by educational levels of the populace, [$\chi^2 = 51.7$, p-value < 0.001].

Use of public latrine and open range defecation are the commonest toilet practices among the inhabitants of Kintampo District of northern Ghana. Defecating in refuse dumps or chamber pots is a common practice for children less than 6 years. Only negligible number of the populace from the different sub-districts of the study area knew the health implication of human faeces, the

knowledge of whom was greatly influenced by educational status(Okechukwu et al., 2012).

During the second quarter of 2015, Ghana embarrassingly was ranked the seventh dirtiest country in the world at the time the world celebrated World Environment Day. Unfortunately, just last November, Ghana was ranked second after Sudan with the worse open defecation record in Africa when the world celebrated World Toilet Day(citifmonline.com, 30, 2015). The country seems to have a grave record on open defecation across the country with statistics showing that nearly five million people, representing 20 percent of the population, are openly defecating. According to the UNICEF, open defecation is said to cost the country \$79 million each year, while posing the biggest danger to human health. UNICEF adds that Ghana has made zero progress in improving sanitation facilities for its citizens. One is inclined to believe that the country's poor rankings for the previous year have already been picked up as top priorities for fixing in the subsequent years by the ministries, departments and agencies concerned. It is obvious that we have not done enough when it comes to keeping up with sanitation. The efforts that have been exerted to put in the national, regional and district levels seem to have only succeeded in scratching the surface. Much more is needed to pull up from the bottom of the pile.

The Rio Conference (UNCED, 1992) considered sanitation to be part of broader environmental issues (Tenkorang, 2002). Today, 2.6 billion people including almost one billion children live without even basic sanitation. Every 20 seconds witnesses the death of a child as a result of poor sanitation. That is 1.5million preventable deaths each year (Langergrabera&Muellegger, 2005).

Besides health benefits, Seidu (2009) holds the view that improved sanitation in general is not only crucial for human health but also for economic and social development, yet total sanitation in African countries in particular faces a lot of challenges. Among these challenges is open air defecation which Seidu (2009) asserted is critically linked to human behaviour.

Management of Waste

Waste management in Ghana is a complex issue that has been a major feature on the priority list of successive governments, local authorities, and international donors in recent years. Generally, existing public facilities including sanitary facilities are inadequate to serve the user population, and the sheer volume of municipal solid waste generated in the country's urban centres is overwhelming (Sam Jr., 2009). Solid waste management is defined as the control of waste generation, storage, collection, transfer and transport, processing and disposal of solid wastes consistent with the best practices of public health, economics, financial, engineering, administrative, legal and environmental considerations (Othman, 2002).

The escalating problem on solid waste management in Ghana is due to various factors. Problems such as rapid urbanisation, financial incompetence of local authorities' lack of proper planning and management equipment for solid waste disposal have together escalated the already grave problem of solid waste disposal (webgovernment, 2011). Existing final disposal sites for municipal solid waste in Ghana are not engineered and may be described as crude dumpsites (Sam Jr., 2009). There is no waste separation at the source of generation, and hazardous and clinical wastes are often handled together with municipal solid waste. The situation creates a suitable environment for

breeding of disease vectors such as mosquitoes and cockroaches and the proliferation of rodents such as rats and mice (Sam Jr., 2009).

It was also reported by Komenda-Edina-Eguafo-Abrem (KEEA) Municipal Assembly (2006) that residents set fires to the waste in their environment, to create space for further dumping. In doing so, they cause atmospheric pollution and create health risks for themselves and their fellow towns' people. Burnt dumping grounds are still breeding places for flies and other vermin, which serve as vectors for disease transmission. The areas are also used as defecating grounds, again posing further health risks to residents. The KEEA Municipal Assembly also indicated that, at Mpoben, near the castle, Akotobinsin and Nyanta dumping sites without disposal facilities are situated very close to the main road. When fire is set to these, it causes smoke nuisance that impedes vehicular movement and can easily lead to road accidents.

Defecation around beaches, into gutters or into plastic bags thrown into bushes, gutters and backyards, is said to be rampant in African countries, for instance Ghana (Seidu, 2009). Seidu asserted it has double negative impact on the environment-pollution with plastic bags and human waste. Open air defecation does not only pollute ground waters, it contaminates agriculture produce, helps the spread of diseases such as diarrhoea, cholera and bilharzia. There are socio-economic and cultural factors that promote open air defecation. Indiscipline has been cited by Seidu (2009) as the first, followed by poverty (people not able to own toilets of their own), inability of designated state institutions to provide sanitation facilities and also to ensure that landlords provide toilets in houses they rent out.

Littering with Domestic Solid Waste

The UN General Assembly Special Session on Sustainable Development has identified waste management as a strategic issue for sustainable development (<http://edugreen.teri.res.in/explore/solwaste/types.htm>). The growing consumer market, rising urbanisation coupled with changing consumerist lifestyles over the last few years is rapidly leading to increased waste generation. Products are being packed in cans, aluminium foils, plastics and non-biodegradable items that are causing great harm to the environment (Sulphey& Safer, 2014). Garbage is generated mainly from residential and commercial activities. Garbage could be classified into household or municipal solid wastes, industrial wastes and biomedical wastes. Waste generation and disposal have become global issues because of their direct and indirect linkages with economic and social development. Waste is indiscriminately dumped anywhere and it is affecting reefs, lagoons, inshore fisheries, health and tourism. On the contrary, good waste management reduces the cost of health care, productive man hours spent on clean up campaigns and enhances tourism returns (Damoah, 2011). Waste collection in major cities is contracted to private companies to manage. However, there are various problems associated with waste collection thereby making people to resort to some methods of disposal which are not healthy to society. Some of these problems have been identified as late arrivals of waste trucks, irregular collection, inadequate collection, unavailability of dustbins and inability to afford collection fees. Waste therefore is illegally thrown into water bodies, unused land plots and gutters.

In Ghana waste generation and management were identified as environmental problems as far back as colonial days, particularly in Cape Coast before the capital was moved to Accra (Kendie, 1998). Indiscriminate waste disposal into drains and open spaces created conditions for breeding of flies and rodents which migrated into various homes, domestic and industrial settings, spreading various enteric diseases among others indicated that about 97% of solid waste generated were either burnt by households or dumped at one place or another (Kendie, 1999; Sey-Haizel,1999; Kendie, 1997). It was for this reason that BuabengandOkyere (1997) contended that the waste management departments should be adequately resourced both financially and in terms of infrastructure to be able to confront the waste management problem engulfing the metropolis. According to the Ghana Living Standard Surveys (GLSS), only 11 percent of urban dwellers had access to flush toilet facilities while 96 percent of wastes generated in these areas were dumped (Republic of Ghana, 1995). As a result Converyand Tutu (1990) andKendie(1998) were of the view that 70 percent of health care costs in Ghana could be linked to environmental health conditions.

Kendie (1998) rhetorically asked the question, ‘Do attitudes matter?’ What attitudes have contributed to such a wasteful society dubbed a “Throwaway society”(Awake, 2002) and how can we combat them? Gilbert (1990, cited in Aronson et al.,1999) also advocated a change in attitude. Any attempt to convince people to change this negative attitude towards the environment must first of all recognise the fact that it is a classic social and psychological problem. It is a social dilemma that has to do with changing people’s attitudes and behaviour. It involves a conflict in which the most

beneficial action for an individual will, if chosen by most people, have a harmful effect on everyone (Aronson et al., 1999).

The question is how can we resolve a social dilemma such as this? (Aronson et al., 1999; Aronson & Good, 2000) said one of the solutions lies in communication. Kendie (2002) also advocated a change in attitude by saying, 'behaviour is learned and can therefore be unlearned through education'. Littering is a behavioural issue. It requires education and raising the awareness of society, hence the need for environmental communication (Scheufele, 1999).

Environmental Communication

Environmental communication is basically about giving out information about the environment (Meisner, 2009). It is a planned and strategic use of communication processes to support effective policy-making and project implementation geared towards environmental sustainability (Organisation for Economic Cooperation and Development [OECD], 2004). Cox (2006, p. 12) provides a formal definition that posits environmental communication as a form of symbolic action, which is "the pragmatic and constitutive vehicle for our understanding of the environment as well as our relationships to the natural world.

Terms Related to Environmental Communication

Key to understanding the discipline of environmental communication are the quintessential concepts described herein. Environment, is often referred to as "all external conditions and factors, living and non-living (chemicals and energy), that affect an organism or other specified system during its lifetime" (Depoe, 2007). According to Depoe, "This definition

positions ‘environment’ as a relational term, encompassing both interaction and effect between an organism (human or non-human) and its surroundings, including other organisms” (p. 2). Consistent with this definition, an organism’s environment could be microscopic, or, instead, very large, depending on the context or situation. A more literal definition of environment is “that which surrounds; but it connotes far more” (Killingsworth, 2007, p. 59). In the field of environmental communication, scholars explain that the word environment reflects “anthropocentric, or human-centered, cultural views of and relations with the living Earth” (Milstein, 2009, p. 346). Thus, environment is a descriptive term, “but one that is never free of ethical and normative implications” (Heath, Palenchar, Proutheau&Hocke, 2007, p. 40). Although the word environment now signifies a wide range of concerns, Milstein’s (2009) description of the term as “a symbol we dominantly use ... to describe the natural world ... that surrounds us and is separate from us” (p. 346) best fits the purpose of this study.

Communication in its most fundamental form, between humans occurs through the use of a mutually understood set of symbols. Berlo (1960) explains that in order to express a message, the process of communication revolves around a complex interaction of variables and communicative events that enable interaction. Human communication can occur between people (e.g., interpersonal, speech), between groups(e.g., organisational, intercultural), between countries (e.g., international, developmental), within oneself (e.g., intrapersonal, self-talk), or even without speaking (e.g., non-verbal, subliminal). Mediated communication (i.e., mass media communication), like human communication, is continuous and dynamic,

involving the assignment of meaning through symbolically encoded messages. The central thrust of mediated communication, however, is characterised by its use of technologies (e.g., computer, television, voicemail) to facilitate communication. As a process of exchange, whether verbal or non-verbal, which involves the transmission of a message from the source, through a channel and to a receiver, the term communication can be narrowly defined as “measurable reduction of ambiguity in a receiver” (Yate, 2009). If it is agreed that “true communication occurs only within systems” (Killingsworth, 2007, p. 60), communication may more broadly be defined as the transfer of information.

According to Carbaugh (2007), “Communication mediates the relations between people and nature....affirming both as powerful sources of knowledge” (p. 69). Since human communication is a form of symbolic action where beliefs, attitudes, and behaviours relating to nature and environmental problems are mediated by communication, then the public sphere emerges as a discursive space for communication about the environment (Cox, 2010). Milstein (2009) writes, “Communication about the environment is embedded within social systems and within the power that is negotiated within these systems” (p. 346). An example of such a system regarding communication and the environment is the social use of language. However, “by the very act of using language, we become alienated from the environment. ... With each new layer of mediation, moving from speech to media that go beyond filtering and even seem to replace the natural or social world, we can expect further alienation” (Killingsworth, 2007, p. 60). For the purpose of this study, it is fundamental to distinctly understand

communication as it directly relates to the environment. Environmental Communication Environmental communication is communication about environmental affairs (Meisner, 2009).

Schwarze (2007) defines environmental communication “primarily as a set of instrumental practices that privilege the study of those practices over constitutive and structural communication issues” (p. 93). Milstein (2009) explains this concept as “a meta-field that cuts across disciplines. Research and theory within the field, are united by a topical focus on communication and human relations with the environment” (p. 345). Depoe (2010) adds that as a profession, environmental communication is a vehicle to “advocate for change, raise awareness, and collaborate to address environmental issues, change behaviour, and pass (political, economic, and technological) legislation” (para. 3). Senecah (2007) rationalises, “EC, by the very nature of its focus, must be trans-disciplinary and integrative” (p. 22). Related to the fields of literary ecocriticism and the rhetoric of place (Killingsworth, 2007), environmental communication consists of the many diverse forms of the communication field, including interpersonal, group, rhetoric, public, organisational, intercultural, and mass media that make up the social discussion and debate about environmental issues and problems (Meisner, 2009; Senecah, 2007).

Robert Cox (2010), an instrumental figure in the academic advancement of EC who has “played a key role in defining and raising environmental communication and credibility” (Senecah, 2007, p. 21) has determined seven major areas of study within the field. They are: (1) environmental rhetoric and discourse, (2) media and environmental

journalism, (3) public participation in environmental decision making, (4) social marketing and advocacy campaigns, (5) environmental collaboration and conflict resolution, (6) risk communication, and (7) representations of nature in popular culture and green marketing (Cox, 2010). Cox (2007), who served as three-time president of the Sierra Club, the largest environmental group in the United States, presents four main tenets, or broad agreements, of environmental communication: (1) environment imbricates material and social/symbolic processes, (2) social/symbolic representations of environment embody interested orientations toward their object(s), (3) social, economic, and ideological contexts both enable and inhibit the production of representations of environment, and (4) dominant systems of representations of environment influence societal deliberation about and/or response to environmental signals, including signs of deterioration of human health, climate, or ecological systems.

Cox's (2007) first tenet of EC explains that "our ideas, beliefs, attitudes, policies, and practices involving the natural world and environmental problems are mediated by systems of representation – by human communication" (p. 12). His second tenet states, "there is undoubtedly broad agreement that our symbolic mediations are interested; that is, they arise from and embody social locations, perspectives, aspirations, and objectives" (p. 13).

The author's third point is that "even as sociosymbolic representations of environment are inevitably interested, their productions occur in and through a range of institutional cultures and communication practices" (p. 13). And, finally, Cox's fourth tenet of environmental communication expresses

that “social communication, more than natural biological changes alone, determines a civilisation’s course when confronting environmental decline” (p. 14). These four tenets are basic to the field of environmental communication and have, contemporaneously, come to serve as the fundamental foundation of the discipline. Advancing EC even further, Cox (2007) suggests four normative assumptions for the study of environmental communication. They are: (1) environmental communication seeks to enhance the ability of society to respond appropriately to environmental signals relevant to the well-being of both human civilisation and natural biological systems, (2) representations of environment, including governmental information, scientific advisory systems, and decision processes, should be transparent and accessible to members of the public, (3) individual and societal opportunities and capacities to study, interact with, and share experiences of the natural world and to engage others’ communication about such experiences is inherently good and should be nurtured, and (4) scholars, teachers, and practitioners have a duty to educate, question, and critically evaluate when social/symbolic representations of environment and communication practices are constrained for unsustainable policies toward human communities and the natural world.

As witnessed through the above tenets and normative assumptions, “environmental communication should concern itself with issues beyond the production of mere opinion, belief, or conviction about environmental issues. ... Such a discipline must analyse, produce, and ultimately model judgment in its scholarship, pedagogy, and service” (Schwarze, 2007, p. 96).

Environmental Communication and the Public Sphere

As a field of study and environmental discourse, EC is “a diverse synthesis of communication and environmental theory that examines the role, techniques, and influence of communication in environmental affairs” (Meisner, 2009, p. 1). Moreover, environmental communication is “flexible and contingent, composed of overlapping discourses, which come from recognition of the validity of a variety of issues, problems, and framings” (Agyeman, 2007, p. 120).

Meisner (2009) pointed out that there are other forms of communications; environmental communication is both an activity or phenomenon and a field of study. He argued further that environmental communication is the various forms of interpersonal, group, public, organisational and mass communication that make up the social discussion or debate about environmental issues and problems, which could be referred to as “environmental discourse.” Pillman (2002) defines environmental communication as the link process between sources and the recipients of environmental information, which technically is a sender-receiver activity. From a historical perspective, it answers the question “who says what to whom through which channel and with what effect”. One can therefore deduce that environmental communication can play the role of bringing about environmental consciousness with regards to how people perceive the environment, its role in socio-economic development and its management for a sustainable development.

Environmental consciousness can broadly be defined as the acquisition of knowledge about environmental problems or issues that translate into

attitudinal changes and subsequently results in a tendency to act positively towards the environment (Kwansah-Aidoo, 2004). It comprises both an intellectual and an affective element. In other words, an individual who is said to be environmentally conscious would possess a body of knowledge of specific environmental problems. The individual will be awakened by that knowledge to act appropriately in concrete situations in demonstration of a desirable way of relating to those problems that crystallises into positive attitudes towards the environment. Such appropriate behaviour would therefore, represent affective dimension of environmental consciousness (Rannikko, 1996; Kwansah-Aidoo, 2004).

The Need for Environmental Communication

Environmental communication broadly deals with environmental information or communication about environmental affairs (Meisner, 2009). However, Cox (2006) has identified these as major subject areas; environmental rhetoric and discourse, news media and environmental journalism, public participation in environmental decision-making, environmental advocacy campaigns. The others are environmental collaboration and conflict resolution, risk communication and representations of nature in popular culture. This study was situated within the study contexts of news media, environmental journalism and environmental advocacy campaign.

Given the extent of environmental degradation especially in the area of the menace of plastic waste littering, there is the need to act with all urgency (Kwansah-Aidoo, 1999). Governments and environmental lobby groups have come to one important realisation. They believe that scientific

facts and ecological concerns are convincing and compelling on their own. However, affected people's perceptions are influenced by emotions and socialisation, as well as, by reason and knowledge (OECD, 1999). This implies that people must not only be made aware of the enormity of environmental problems, but must be involved and encouraged to act in a friendly way towards the environment. The most effective strategy for promoting environmentally responsible behaviour and positive attitude is to increase exposure to straight forward messages emphasising their relevance to the environment (Ogunbode& Arnold, 2012).

To buttress this recommendation, Kwansah-Aidoo (1999) posits that messages about the environment ought to be communicated to the public. This is where the mass media becomes very useful especially in an era where urbanisation is increasing rapidly.

Environmental Communication and Urbanisation

Urbanisation, simply defined as a radical shift from a rural to an urban society, is an essential corollary of industrialisation that goes hand in hand with the role of human settlements as engines of growth in the economy and as promoters of scientific, socio-cultural and technological development. The process of urbanisation in the developing countries, especially Africa is inexorable and rapid urbanisation presents one of the greatest challenges to human security and sustainable development. In many African countries, urbanisation has resulted in rapid population growth and concentration of people and industries in few urban areas such as Accra (Ghana), Lagos (Nigeria), Monrovia (Liberia), Abidjan (Cote d'Ivoire), etc. Rapid

urbanisation finds expression principally in outward expansion of the built-up area, converting prime agricultural land into residential and industrial uses.

Although urbanisation is growing throughout the world, the growth of cities is more rapid in the developing countries especially Africa where annual growth rate is 1.6% compared to 0.8% in the developed countries. In 1950, Africa was the least urbanised continent with only 14.5% of the population in urban areas, but by 1988, about 35% of Africa's population of 749 million people was urban. UN projections indicate that the urban population will increase to 914 million by 2025 or 4 times the 1990 levels.

The world is faced both by the massive degradation of the natural environment and by the accelerating decline in the quality of life of many of those who live in the built environment of cities. The two crises are related. The consequences of urbanisation make a major contribution to the global environmental changes that threaten the very existence of life in the future, while changes in the biosphere increasingly affect health and social conditions in the cities (World Health Report [WHR], 1999).

In 2007, for the first time in history, the global urban population exceeded the global rural population, and the world population has remained predominantly urban thereafter (Figure 2). The planet has gone through a process of rapid urbanisation over the past six decades. In 1950, more than two thirds (70 per cent) of people worldwide lived in rural settlements and less than one-third (30 per cent) in urban settlements. In 2014, 54 per cent of the world's population is urban. The urban population is expected to continue to grow, so that by 2050, the world will be one third rural (34 per cent) and two-thirds urban (66 per cent), roughly the reverse of the global rural-urban

population distribution of the mid-twentieth century (United Nations, 1974). This has serious implications for the urban environment because as Torrey (2004) pointed out that, as urban population increases, they interact with their environment more often, change their environment through their consumption of food, energy, water, land and these increase the pollution level in urban environment and in turn affect their health and quality of life. To Torrey (2004), human beings have become an increasingly powerful environmental force over the years. In view of this, the urban environment becomes an essential factor in determining the quality of life in urban areas and the impact of the urban area on the broader environment. Consequently, inadequate water and sanitation, lack of proper rubbish disposal and industrial pollution are some of the urban environmental challenges that governments have to address (Torrey, 2004).

Most developing countries due to their debt situation, are already suffering from unfavourable neo-liberal economic relations such as poor terms of trade and poor flows of international aid. Donors or development partners have prescribed various economic reforms with harsh conditions which are affecting the provision of even social amenities. Unfortunately, reducing some of the environmental challenges and mitigating their effects on the urban population are too expensive to bear from tax revenues (Torrey, 2004).

Often, various reasons such as high urban population growth rates and inadequate funds for local authorities are the causes of poor sanitation in cities (Pelman, 1998, cited in Kendie, 1998). Notwithstanding, it is important to indicate that urbanisation as a process may or may not be completely responsible for environmental degradation. However, what is at stake is how

environmentally conscious the urban dwellers are, especially, with regards to their daily personal interaction with the natural environment.

Urban dwellers, by virtue of the relative privileges available to them in terms of national distribution of social amenities *inter alia* have an advantage over their rural counterparts. For instance, in the area of mass communication facilities, urban dwellers may have access to more print and electronic mass media information on the environment than the rural folks. It is presumed that their literacy level is higher because of better educational facilities and resource persons available to them.

On environmental communication, the assumption is that they have adequate information on the environment through the mass media to enable them know what the environment is and its central position in their socio-economic wellbeing. This implies that they will be more inspired to relate positively towards the environment.

The State of Environmental Communication in Ghana

Ghana, by way of commitment to global environmental issues, is a signatory to many international environmental conventions. Again, this commitment, at the local level led to the establishment of the Environmental Protection Agency (EPA) formerly known as the Environmental Protection Council (EPC) in 1974. One of the core functions of the EPA as mandated by Act 490 which established the EPA in 1994 is, to raise the awareness of Ghanaians on the importance of protecting and enhancing their environment. The EPA was the first such government body in Africa which focused on environmental management issues. The other areas of focus included

monitoring, co-ordinating and finding solutions to Ghana's environmental problems.

The EPA in pursuit of its mandate formulated a national environmental action plan which aims to improve the surroundings, living conditions and the quality of life of the entire citizenry, both present and in the future. The plan seeks to ensure reconciliation between economic development and natural resource conservation. By this, a high quality environment has been made a key element to support the country's socio-economic development (EPA, 1994). Having realised that the success of any environmental policy depends on the fact that all sections of the population understand the functioning of the environment and the problems it presents, through environmental communication, the Environmental Protection Agency (EPA) facilitated and spearheaded the formulation of an Environmental Education Strategy for Ghana (EPA, 1994). The EPA identified some eleven sectors, formal and informal, to be responsible for providing environmental education in all forms throughout the country. Among these sectors was the mass media.

The EPA in 2011 organised capacity training for some journalists and had come out with a training manual to improve the knowledge and skills of journalists on environmental issues. According to EPA, this would enable journalists to have in-depth knowledge to make reporting easier and effective (Ghana Business News, 2009).

The Role of the Mass Media in Environmental Communication

The essential role of communication, particularly the mass media, in the development process has long been established Tuurosong, Kendie and

Agbesinyale (2014). Lerner (1958), for instance, noted that communication systems are both indicators and agents of social change. According to him, the mass media teach new skills, attitudes and behaviours and are, therefore, a “mobility multiplier” with the capacity to simultaneously communicate to large groups of people (Lerner, 1958: 82). Similarly, Merrill (1971) stated that the media contributes to national development through the creation of awareness of the potentialities for development.

Hornik (1989) identified several roles played by communication in the development process. According to him, communication acts as a low-cost loudspeaker. He cited instances in Guatemala where the United States Agency for International Development (USAID) sponsored radio broadcasts from agricultural extension agents to subsistence farmers to offer the later information about agricultural methods and practices in order to encourage increased yields.

The mass media play a significant role in the environmental discourse. Their scope or extent of reach or coverage makes them impossible channels to ignore in any effort to inform and educate people about crucial issues such as the environment (Kwansah-Aidoo, 1999). Critical to the realisation of any novel idea of relevance and practical translation is the matter of creating and raising its awareness. In the domain of environmental issues, environmental education plays a key role in sensitizing people on the need and significance of programs carried out to address environmental problems confronting them.

Morgan (1981) states that environmental education increase public consciousness and knowledge of environmental issues and challenges. Dalelo (2007) is also of the opinion that environmental education is necessary to

increase public awareness about effects of human activities on the environment. It is necessary to increase the public's sensitivity to environmental and development problems. People profit through environmental education, by gaining an understanding of how their individual actions affect the environment, acquiring skills are useful to evaluate various sides of issues, and becoming better equipped to make informed decisions. Studies indicate that there is very limited environmental education in Ethiopia (Shibru&Kifle 1998). Daniel (1998) revealed that environmental education has become non-existent in the curriculum of colleges and schools. According to Dalelo (2007) the inception of environmental education in Ethiopian schools and teachers training institutes is inextricable related to the efforts made by the government and non-governmental organisations to control the rate of environmental degradation. This situation thus makes the media a significant tool in raising the awareness of people on environmental matters.

According to Morgan (1981), the media is a significant source of environmental information for people. Morgan (1981) postulated that a significant amount of the public's knowledge of environmental issues is likely to come from the media. According to him, much of what people hear about issues such as the greenhouse effect, global climate change, ozone depletion, water and air pollution, and other environmental threats, is likely to come from the media (or from others who have heard it from the media), since our first-hand knowledge of the state of the environment is likely to be minimal.

In fact, it has been suggested that the media is frequently the only source that people use to gather information about environmental issues (McCombs, 1995). It could take up a crucial role by providing technical

information about relevant environmental problems and possibilities. Arcury (1990) suggested that environmental quality is unobtrusive issue (issues that humans do not directly experience) which by their nature, are more susceptible to a significant media agenda-setting effect, and consequently the public needs the media to tell them how important an issue on the environment is. Hansen (2010, p. 50) stated that “media discourses help to shape and set the parameters of discussion and understanding of environmental issues” and for resulting social and policy responses.

Media coverage of environmental issues can heighten or diminish the amount of attention the public pays to these issues and strongly influence the political discussions that take place about the environment. In the past, the role of media in human society was seen essentially as sources of information and to influence people. It is now being proposed that the media should be understood as a process of social interaction through a balanced exchange of information and experience. This implies participants critically analysing the role played by the media in environmental protection and progressive management (Hansen, 2010).

As a result of the significant role the media play in developing the public's understanding of environmental issues, it will give the confidence to act appropriately leading towards sustainability. Some researchers have concluded that the news media not only play a significant role in modelling the public's knowledge of environmental issues, but also play a part in the public's likelihood to participate in environmentally-friendly behaviours.

All stated issues indicated that the media are a significant tool in raising awareness of people on environmental issues. Article 4:10(h) of the

environmental policy of Ethiopia which was approved by the council of ministers in 1997 stress the role to be played by the media in raising environmental awareness (EPA 1997). According to the World Bank Group (WBG, 2005), radio, television and newspaper are considered the major media outlets in developing countries. The study also added that as is the case in developed countries measuring audience size by considering the number of households with radio/ television sets and distribution size of newspapers would determine the number of audiences in poor countries. The study argues that communal viewing, listening and reading habits are far more common in poor countries than wealthy ones. The actual proportion of the population that consumes radio, television and newspapers is likely to be considerably higher than the proportion that owns a set and the distribution quantity (WBG, 2005).

Hertsgaard (1992) asserted that the media did not cover environmental issues. It did not take environmental topics seriously. However, this attitude, he claimed, was changing. In 2002, Ogunleye posited that in people's daily interactions with the environment, they naturally have some kind of impact on the environment, which was often detrimental. Okae-Kissiedu (2004) is of the view that people may not be aware of the implications of environmental abuse they cause unless, it is brought to their knowledge. Dartey (2011) observed that the mass media held the key to influence attitudinal and behavioural change of Ghanaians particularly on the environment through conscious sensitisation and education.

This is why the role of the mass media in the environmental discourse cannot be relegated to the background. This, therefore, necessitates an environmental awareness campaign, or what Ogu(cited in Ogunleye,

2004) refers to as 'communication intervention'. That is, communication modes aimed at changing negative attitudes, practices and conditions to bring about desired positive changes.

The mass media, both electronic and print, have become a significant part of our environmental communication in playing the role of surveillance of the environment (Wright, 1975 cited in Okae-Kissiedu, 2004). Okae-Kissiedu (2004) asserted that frequent reportage of environmental issues creates awareness and also pushes the environment for discussion on the public agenda. It makes the issue of the environment alive and also legitimises the importance of environmental issues. To buttress the role of the mass media in the environmental campaign, Lester Brown of the World Water Institute says:

“We don't have time for the traditional approach to education – training new generations of teachers to train new generations of students – because we don't have generations, we have years. The communication industry is the only instrument which has the capacity to educate on a scale needed and also in the time available” (Hertsgaard, 1992, p.6).

Hertsgaard (1992) observed that internationally, the environment has not been traditionally seen as a very important news story by nations' major news organisations. They do not consider the environment a bona fide beat for assigning reporters. In Washington, for instance, the big beats for scheduling reporters are the White House, the State Department, the Pentagon and the related issues on Capitol Hill. Neither CBS nor NBC news has even one full time environmental correspondent. However, now that the environment is a

hot topic, the favourite new buzzword within the press seems to be “green” (Hertsgaard, 1992).

In recent years, the amount of environmental information available in Europe has considerably increased via the mass media (Pillman, 2002). In Nigeria, the print media have played a significant role in informing the polity about environmental issues. Hardly a day passes without the mention of one environmental issue or another in one of the numerous dailies or magazines in Nigeria (Ogunleye, 2002). A study on the coverage of environmental issues by Nigerian newspapers and magazines in 1987 and 1998 shows that 17.5% of the newspapers and 11% of the news magazines covered the environment, mostly in the form of news items (Denloye, 2002). For the electronic media, jingles such as, “For the future of our babies use a dustbin” is often aired on Nigerian Television Authority, Ibadan (NTA-Ibadan). The Broadcasting Corporation of Oyo State (BCOS), Ibadan, also produces some one minute jingles on various environmental issues including refuse dumping in gutters (Ogunleye, 2002).

In Ghana, the reportage of the print media on the environment dates back to the early 1990s (Okae-Kissiedu, 2004). These newspapers, the Daily Graphic, Weekly Spectator, Triumph and Horizon, reported regularly on the environment. For the electronic media, programmes like “Good morning Accra” and “Watch these things” were environmental programmes on Radio GAR and GBC television, respectively, within the same period (Media Monitor, 1997 cited in Okae-Kissiedu, 2004). The former, “Watch these things” exposed negative environmental habits such as littering of the surroundings (Okae-Kissiedu, 2004). There were some media content analysis

studies done which presented a description and analysis of media attention to the environment. These studies focused on single item and multiple items environmental issue(s). For instance, examination of acid rain coverage and analysis of the Exxon Valdez oil spillage, which are some examples of content studies which focused on single item environmental issues (Kauffeld & Fortner, 1987; Daily & 'O' Neills, 1991 cited in Okae-Kissiedu, 2004).

Muazu (1991), Quashie-Awusah (1998), Okae-Kissiedu (2004) and Kwansah-Aidoo (1999) did content analysis of multiple item environmental issues. Kwansah-Aidoo (1999) for instance looked at: toxic waste dumping, air pollution from exhaust fumes, environmental destruction resulting from mining activities, bush fires, sand and stone winning, disposal and management of waste and general sanitation among others. These studies on press coverage of environmental issues in Ghana in most cases have been comparative analyses based on ownership and how much have been covered by the state and the private media. Quashie-Awusah (1998) and Tetteh (2012) compared coverage of environmental stories in state-owned (Daily Graphic and Spectator) and private-owned (Public Agenda and Independent) print media. The variables mostly considered in these studies were, 'frequency of publication', the amount of 'news hole' or space allocated to the news, 'subject matter', 'picture accompaniment' and 'page placement' of the environmental report. One of the limitations of these studies was that the studies did not deal with the attitude of readers (Muazu, 1991).

The study done by Okae-Kissiedu (2004) reveals that the dailies and the weeklies together from January 2003 to December 2003 respectively covered 93.8% and 6.2% of environmental news. Straight news in the dailies

had 97.7% and 2.3% in the weeklies. Feature articles or stories recorded 60% and 40% for the dailies and weeklies respectively. Among the subject matter for the study were solid and liquid waste management with the focus on various human activities and natural occurrences that affect the aesthetics and sacredness of the immediate environment. Some specific issues considered were the plastic bag menace and littering.

Theoretical Framework

The theoretical framework on which this study was based was the mass media Agenda-Setting Theory of McCombs and Shaw (1972).

Mass Media Agenda-setting Theory

The Agenda-Setting Theory is basically about a theory of strong media effects which suggest that with passage of time the agenda of the mass media becomes the agenda of the public (Riaz,2008). Agenda-setting in its rudimentary form deals with the relationship between the mass media, events in the real world and images of these events in the minds of people. It is based on the assumption that audiences or readers do not only learn about public issues through the media. They also learn how much importance to attach to an issue or topic from the importance the media places upon it. Embedded in this theory are two elements: public and policy agenda settings (Kwansah-Aidoo, 1999).

Agenda setting historically was based on the findings of Lippman (1922), a prominent American journalist who first analysed the impact of the media on people's perception. Lippman (1922) asserted that people did not respond directly to events in the real world but instead lived in a pseudo-environment made of the pictures in their heads. To Lippman (1922), the

media would play an important part in the furnishing of these pictures and shaping of this pseudo-environment.

Progressing from the foundation laid by Lippman(1992), Cohen (1963) also asserted that the media are significantly more than a purveyor of information and opinion. It may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers and audiences what to think about. From these notions, McCombs and Shaw (1968) in their Chapel Hill study came out with the agenda setting theory which buttressed the assertions of both Lippman (1922) and Cohen (1963) that it was the mass media that set the agenda for public opinion by highlighting certain issues of public interest.

From the study, McCombs and Shaw (1972) discovered that the main effect of news media was agenda setting, that is telling audiences and readers what not to think, but what to think about whether social, or political, local or national, and that public issues are generated by the media. Consumers do not only learn about an issue “but how much importance is attached to that issue from the amount of information in a news story and its position (McCombs &Shaw, 1972). The agenda theory described the mass media as a tool that influences public opinion by setting the agenda in public discourse. Agenda theory also shows how the media affect public opinion, not necessarily by supporting one view over another, but emphasising certain issues in the public sphere. Agenda setting theory posits that, news does not tell people what to believe, but it does tell what issues and debates are worthy of attention. Therefore, there is a broader correlation between the agendas of media, the public and policy makers.

A replication of the Chapel Hill study in a new environment by MacCombs and Shaw (1972) compared the relationship between reality and the media's selection of reality and the influence on public perception as an application of the agenda setting theory. The comparison confirmed that media shaped people's minds especially those with no direct connection to news worthy events. As a result, topics not discussed in the media have proven to be irrelevant or less relevant to the public. Therefore, there is a correlation between the rate at which the media covers a story and the extent to which people think that the story is important. Some evidential landmarks to authenticate the agenda setting theory where the media were at the forefront or was the crusader were: the 1989 Exxon Valdex oil spilled and the accompaniment environmental issue; the 1984 Ethiopian famine where NBC broadcasted the first picture of the starving children thus triggering massive news coverage for months (Dearing & Rogers, 1996). In Ghana, Kwansah-Aidoo (1999) applied the agenda setting theory in a study on media coverage of the environment. One of his key findings was that, the media influences the environmental agenda.

The other components of agenda-setting theory are public and policy agenda settings. Public agenda-setting deals with the content and order of topics in the public agenda as its main dependent variable and how mass media agenda influences it. Policy agenda-setting, however, tries to find out how policy responses to both the media and the public agenda (Dearing & Rogers, 1988 cited in Kwansah-Aidoo, 1999).

Rogers (1986) in a study revealed that the perceived value of news is determined largely by certain presentation techniques. They asserted that the

placement of a story among others and the priming, which is the way it was emphasised, had a strong effect on its perceived importance. However, whether gate keeping is simply a reflection of public opinion, or whether public opinion is actually shaped by it has been a debatable issue. Notwithstanding, none of the studies has definitively shown a direct causal relationship between media presentation and public opinion. It is still not clear whether audiences and readers shape the media, or the media shape the audiences and readers, or the media and audiences with readers shape each other. However, to Rogers (1986) the correlation between the media and audiences or readers is significant.

Methodological Issues and Research Design involved in Agenda-setting Theory

There are four distinct research designs in agenda setting theory that deal with the relationship between the media agenda and the public agenda. These are often referred to as “Acapulco typology” and are classified as follows:

1. Type I, which compares news coverage for a set of major issues to the aggregate public agenda;
2. Type II, which examines the media agenda (defined in terms of issues) by shifting the units of analysis for the public agenda from the aggregate population to the individual;
3. Type III, which investigate the relationship between media coverage of a single item and its trend in public opinion over a period of time; and

4. Type IV, which examines the match between the media coverage of a single issue and the corresponding salience of that issue on an individual agenda (McCombs & Bell, 1996, pp.98-99).

This typology was first presented at the International Communication Association Convention in Acapulco, Mexico, hence the name Acapulco typology (Riaz, 2008).

Criticism of Agenda-setting Theory

Very early advocates of mass communication arrogated to the media an exceptional power to change human behaviour based on several theories of the mass media of which agenda-setting is one (McCombs, 2004). This contention has been subjected to scrutiny by scholars involved in mass media effect research to ascertain whether the mass media possibly influence people's attitudes or behaviour. One of these scholars was Klapper. In 1960, Klapper formulated several generalisations on the effects of the mass media. The main tendencies of his findings are: that the mass media does not ordinarily serve as a necessary and sufficient cause of audience effect, but rather functions among and through a nexus of mediating factors and influences. These mediating factors, Klapper (1960) asserted were such that they typically rendered mass communication a contributory agent, but not the sole cause, in the process of reinforcing the existing conditions. The main mediating factors Klapper considered to be responsible for the functions and effects of the mass media are selective exposure and selective perception and retention.

Klapper (1960) argued that people by their selective predisposition have to expose themselves to those mass media communications which are in

accord with their attitudes and interest. By selective perception and retention, people by their own predisposition dispose the meaning of mass communication messages in order to bring these messages into accord with their already existing views. Klapper (1960) buttressed his argument with the fact that people interact as members in social groups and this usually increases the reinforcing effects of their selective exposure, perception and retention. The group then sees to it that the individual member does not deviate from its norm of behaviour and this reduces mass media to a sort of accompaniment. The group conformity causes an individual member to be confronted with certain messages, but not by others, and also causes him or her to interpret the former in a group conformant ways.

To Klapper (1960) people communicate with each other and this influences their behaviour in many matters more than mass communication, moreover it influences them in favour of constancy and reinforcement. Klapper (1960) asserted that person to person communication was more effective than communication through various types of mass media. Notwithstanding, Klapper (1960) did not pretend that his generalisations were absolutely valid. He considered them to be formulations of predispositions and of tendencies likely to occur or usually occurring.

Criticisms on Methodological Bases

Some other critics of agenda setting theory were of the view that the theory was applied mostly in Western societies where media are widely dispersed and used, thus the linearity between the media agenda and the public agenda, with the former causing the latter, will be more pronounced in these societies more than societies where the media are less dispersed and less used.

Anokwa and Salwen (1988) and Kwansah-Aidoo (2001a) have however provided some evidence to show that there have been some research done in relatively non-media saturated societies as well, which also confirmed the linear relationship between the media agenda and the public agenda. Domfe (1999) also emphasised that the media plays a crucial role in setting the agenda for public debate on a wide range of issues. Traditional agenda setting has also been criticised on the grounds that it is triggered by the quantity of news coverage accorded a particular issue or event (Iyenger, 1997). That is, the higher the frequencies of message for instance in a paper the more importance the sender attaches to it (Kwansah-Aidoo, 1999).

The general objective of this study is to examine the influence of environmental communication on the environmental consciousness of urban dwellers. Influence in this context refers to how the mass media by ‘type’, ‘content’ and ‘strategies’ disseminate environmental information to create environmental consciousness that will affect the environmental attitude or behaviour of listeners, audiences and readers. It is for this reason that the researcher has chosen the Agenda- Setting Theory of the mass media.

Conceptual Framework

The conceptual framework for this study is adapted from the environmental consciousness and socio-economic development model by Kwansah-Aidoo (2004) to guide the study (see Figure 1).

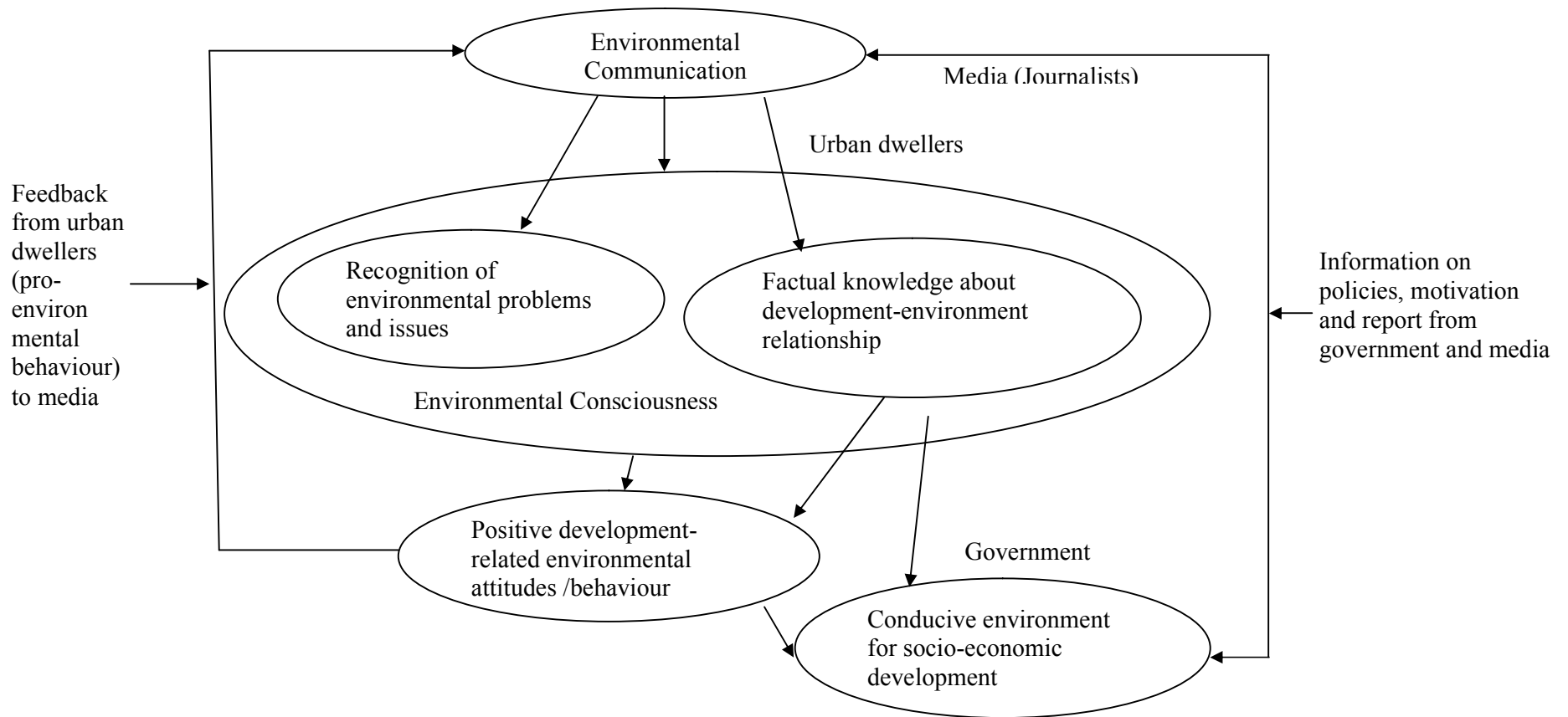


Figure 1: Model of environmental consciousness and socio-economic development
 Source: Kwansah-Aidoo, 2004.

The adapted conceptual framework has four main components. These are environmental communication, environmental consciousness, development-related environmental attitudes/behaviour and a conducive environment for socio-economic development. In the context of the study, the model has three stakeholders or actors; Journalists (in the mass media), urban dwellers (the listening and viewing publics) and government (policy makers).

The ultimate aim of the model is to achieve a positive development-related environmental attitude/behaviour that will translate into the protection and enhancement of the environment. This will subsequently lead to improved quality of life because clean environment is one of the entry points to poverty alleviation (The WASH Campaign, 2002) -the ultimate aim of all development efforts.

From the first stage of the model, the assumption is that environmental communication through the mass media is where relevant environmental information is gathered or generated, packaged and effectively disseminated by the mass media to the listening, viewing and reading publics of the society. These media activities underscore the assumption that it is the mass media that sets the agenda for the public not to only know about public issues, but to learn how much importance to attach to those issues from the media according to the Agenda-setting theory of the media. At the second stage, which is environmental consciousness, the assumption is that the relevant environmental information will be disseminated in such a way that recipients of the information will be able to recognise environmental problems and issues, and appreciate how these problems and issues are intertwined with

their socio-economic development. This stage is considered to be a stage where information from the mass media is expected to make the listening and viewing publics (urban dwellers) have factual knowledge about development-environment relationship. At this stage the assumption is that, 'recognition of environmental problems and issues' and 'factual knowledge about development-environment relationship' are constantly interacting to bring forth the environmental consciousness of the individual's self-judgement of positive environmental conduct.

At the third stage, the assumption is that positive development-related environmental behaviour will be the outward or practical expression of the invisible environmental consciousness urban community dwellers will exhibit from environmental information received from the first stage of the model, which has internalised at the subconscious level of the individual at this point.

At the final or the fourth stage it is assumed that there is an enabling environment created by government for socio- economic development where environmental information on policies will emanate from government or policy makers to the media and then to urban dwellers.

CHAPTER THREE

RESEARCH METHODS

Introduction

A combination of qualitative and quantitative perspectives and methods were used to gain understanding of how environmental communication influences environmental consciousness for either a positive or negative environmental behaviour. This chapter examines the description of the study area, research design, study population, sampling techniques, instrument for data collection and the methods of data analysis.

Study Area

The study covered the Cape Coast Metropolitan Area in the Central Region of Ghana. The Cape Coast Metropolis is bounded to the South by the Gulf of Guinea, West by the Komenda-Edina-Eguafo-Abrem Municipality, and East by the Abura-Asebu-Kwamankese District and to the North by the TwifuHeman Lower Denkyira District. The Metropolis occupies an area of approximately 122 square kilometers, with the farthest point at Brabedze, about 17 kilometres from Cape Coast, the capital of the Central Region (Republic of Ghana, 2015).

According to the 2010 Population and Housing Census, the Cape Coast Metropolitan Area is composed of about 70 settlements. The population for the Metropolis in 2010 was 169,894 with an annual growth rate of 3.1 per cent (Ghana Statistical Service [GSS], 2012). The Metropolitan area has become urbanised as a result of the rapid population increases of contiguous settlements such as Abura, Pedu and Ekon. The Metropolis has heterogeneous

occupational characteristics such as farming, fishing, technical and vocational, trading and white colour jobs among others. Due to its historical role in the Trans-Atlantic slave trade and other tourism features, Cape Coast has become a tourist destination. It receives most of the tourists who arrive in the region before they disperse to visit the various tourist sites. Cape Coast Metropolis is made up of various ethnic groups such as Fantes, Ewes and the Asantes. The main language spoken by the people is 'Fante'.

Cape Coast was the first national capital of the then Gold Coast where the first medium of mass communication, the *Royal Gold Coast Gazette and Commercial Intelligence* (first Newspaper), was introduced in 1822 by Sir Charles McCarthy, the then Governor of the Gold Coast (Ansu-Kyeremeh & Kwame, 1998). By virtue of its proximity to Accra, now the capital of Ghana and improvement in the road transport system, all newspapers that are found in the national capital are virtually found in Cape Coast soon after they come out of press.

There are six established FM Radio Stations (one state-owned) in Cape Coast. These are Radio Central, ATL, Sompa, Yes, Eagle and Ahomka. All these radio stations broadcast in both English and Fante. There is also one private Television station, Coastal T.V, in the Metropolis, apart from external TV signals enjoyed from the nation's capital Accra, through GTV, TV3, Metro TV, TV Africa, Viasat 1, News One, Joy News, Adom TV, UTV, among others. Cape Coast also enjoys fairly stable internet connectivity.

Despite the continuous education and sensitisation of residents about their responsibilities in maintaining decent environment in order to reduce (if not to eradicate) the high incidence of environmentally-induced sicknesses,

such cases are regularly recorded in the Metropolis. This underpinned the choice of the Metropolis for this study to assess the influence of mass media on the environmental consciousness of residents. Also, Cape Coast has been chosen for this study because of the central position it has in the tourism industry of the nation's economy. Tourism has been rated the third foreign exchange earner for the country.

Tourists are very much attracted by clean environment and for Cape Coast to maintain its lead in the tourism industry, there is the need to get the people to stop littering the environment with plastic bags, domestic solid waste and open air defecation around beaches. The study areas were Amanful/Regional Administration, Kotokuraba, Adisadel, UCC/OLA and Pedu/Abura. The urban communities were coloured red for easy identification as shown in Figure 2.

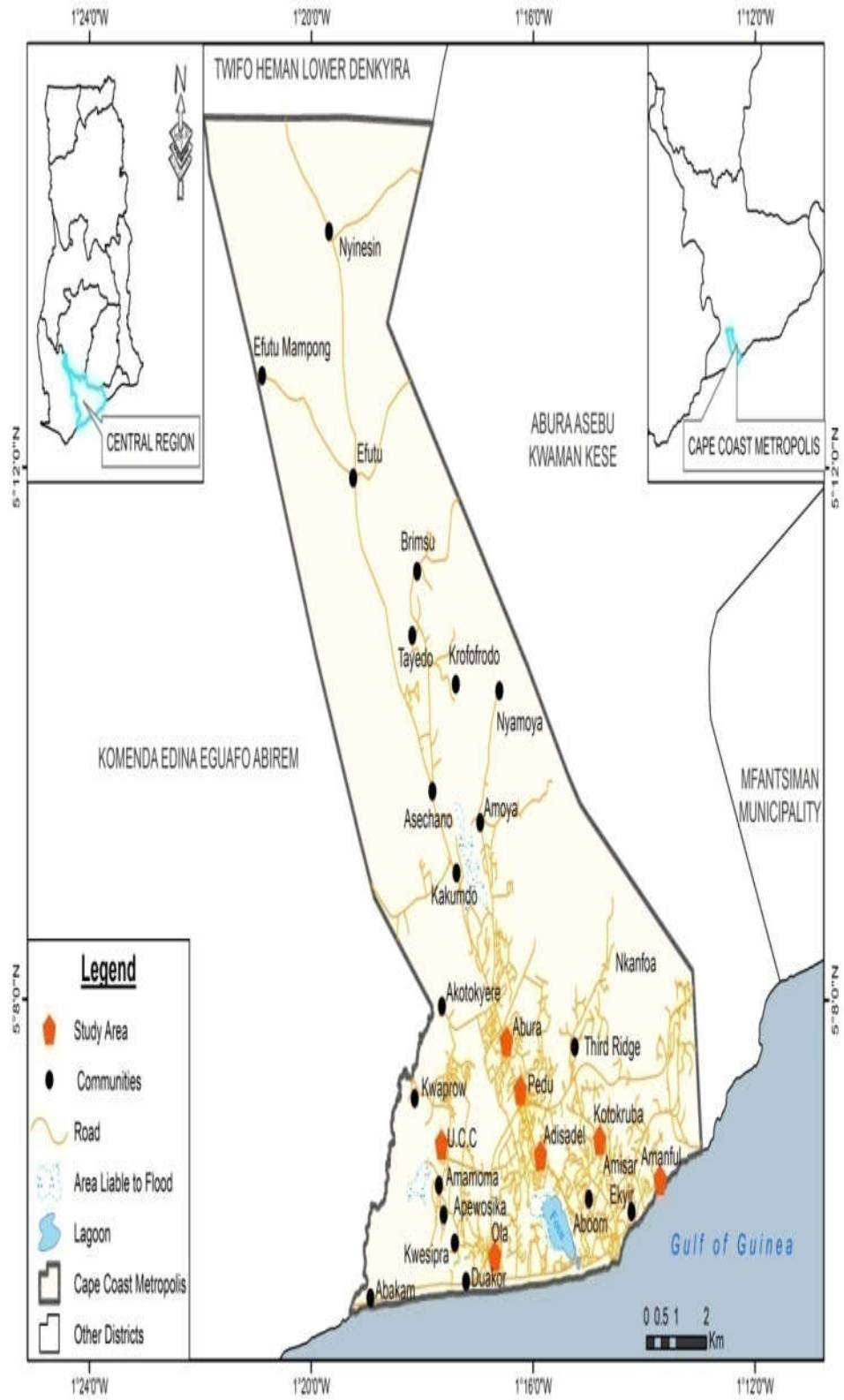


Figure 2: Map showing urban communities of Cape Coast Metropolis

Source: Geography and Regional Planning Department, UCC, 2012

Economic Activity

Economically, Cape Coast was once a vibrant economic centre which was an attraction point for migrants (Kendie, 1998). It had the Surf Port and several manufacturing and wholesale activities. Among the major development problems facing the Metropolitan Assembly is inadequate water supply and poor sanitation. Solid waste, which is often called the ‘third pollution’ after air and water pollution arising from human activities such as rubber and plastic waste, is one of the wastes generated by people in the Metropolis (Addo, 2005).

Cape Coast is the regional capital of the Central Region. The Ghana Living Standard Survey (2010) has identified the Central Region as the fourth poorest region among the 10 regions of the country, Ghana. The sale of iced-water in a sachet or hand-tied polythene is a common business found everywhere in the Metropolis. It probably does not require a huge capital to start with and this may be the reason why both adults and children are actively involved in this business to make extra income to supplement their family budgets.

The staple food of the people Cape Coast Metropolis is ‘Fantekenkey’ and ‘etsiw’. Until recently, the two food items made from corn were wrapped only in dried plantain leaves. However, recent development in the local food industry shows that most of the local foods such as ‘Fantekenkey’, rice (cooked and raw), ‘koko’, fruits and vegetables among others are “packaged” in polythene bags for sale (Ghana Standards Authority, [GSA], 2008). Another common local food item ‘Banku’, which sellers used to dish out directly into plates for buyers is also now moulded into small balls and wrapped in pieces

of polythene before sale. According to Owusu-Sekyere, Osumanu, Abdul-Kadri, (2013), anyone who buys ‘kenkey’ or ‘banku’ used at least four pieces of plastic bags, one for the ‘kenkey’ or ‘banku’, one for pepper or soup, one for fish and one for carrying all the items mentioned. One can, therefore, imagine how many pieces of polythene bags a ‘kenkey’ or ‘banku’ seller gives out after selling about hundred balls of ‘kenkey’ or ‘banku’.

The polluted Fosu Lagoon within the Municipality is a clear evidence of what plastic waste littering among others can do to a beautiful water body which used to serve as a source of livelihood and also has a tourist potential for revenue generation. Eshun (2011) said that about two years ago, the Environmental Protection Agency of Ghana advised that all fishing and swimming activities in the Fosu Lagoon be stopped due to its highly polluted nature. The Fosu Lagoon is now the third most polluted lagoon in Ghana, aside the Korle lagoon in Accra and the Chemu lagoon in Tema. It was also recently added to the list of water bodies with dead zones in the world.

Research Design

Research design is a strategy that provides a framework or a mould for a systematic study that will address the general objective of the study. This study adapted the descriptive study design to find out the influence of environmental communication on the environmental consciousness of urban dwellers. A descriptive study requires that information is gathered from a set of cases that are carefully selected to enable the researcher make estimates of the precision and generalisation of the findings (Singleton & Straits, 2009).

The study was based on Type I of the ‘Acapulco Typology’ research design of agenda setting theory which compares the news coverage of the

media for a set of major issues to the aggregate public agenda (McCombs & Bell, cited in Stacks & Salwen, 2014). The original Chapel Hill study is the best example of the Type 1 design in the agenda-setting literature (Riaz, 2008). The traditional agenda setting methodology uses content analysis of media and survey for data. Statistical methods are integral part of all the typologies associated with agenda setting theory (Kwansah-Aidoo, 1999).

Sources of Data

The study was carried out among a heterogeneous population of illiterate, semi-literate and literate. The researcher employed both primary and secondary sources of data for the study. The primary data was collected through survey questionnaire and interviews. Primary data was collected from the interviews conducted by the researcher with editors of TV3 and Metro TV. Secondary data was collected from research papers, journals, newspapers radio, TV and the internet. The documentary study of records of broadcasts done by TV3 from 2010 to 2011 constituted the main secondary data for the study.

Study Population

The target population or object of investigation (Amedahe, 2002) for this study was urban community dwellers of Cape Coast Metropolis. The classification of urban community in this study is based on the operational definition of the Ghana Statistical Service that it is an area with a population of 10,000 and above (Ghana Statistical Service, 2010). The researcher chose urban population of Cape Coast Metropolis because environmental sanitation issues in urban communities are different in nature from that of rural communities. Some characteristics such as population density, type of

economic activities, food and energy consumptions in urban communities generate a type of waste that differs from what exists in the rural areas (Torrey, 2004). The urban communities for the study are: Amanful/Regional Administration, Kotokuraba/ Tantri, Pedu/Abura, Cape Coast Central, Cape Coast University/OLA, and Adisadel. These are designated urban areas of Cape Coast Metropolis according to the 2010 Population and Housing census by the Ghana Statistical Service.

These six urban communities in 2010 Population and Housing Census, had a total population of 169,894 made of 82,810 representing 48.7 per cent males and 87,084 representing 51.3 per cent (GSS, 2012). Though gender and environment was not the focus of the study, a study by Hiramatsu, Kurisu and Hanaki (2016) showed that male respondents had more knowledge about environmental issues than females. They further argued that same way older people are more concerned about environmental issues.

Sample Size and Sampling Techniques

Sampling enables a researcher to study a relatively small number of units in place of the target population. The study used both probability and non-probability sampling techniques to select the sample size from the target population under study.

Probability sampling gives an equal opportunity to every member or unit of the population to be selected. It has high reliability, degree of representativeness and high generalisation (Sarantakos, 2005). The sample size for this study was determined using Krejcie and Morgan's Table for determining the sample population. The required sample size for a projected population of 169,894 according to Krejcie and Morgan's Table was 387

(Sarantakos, 2005). The study adopted the 387 sample size as it was reasonable and feasible for this particular study. The researcher used proportional representation method to work out the sample sizes of the various urban communities in general taking gender into consideration. Refer to Table 2 for the total population and the sampled size for the five urban communities based on Krejcie and Morgan's Table.

It was assumed that almost everyone in the urban communities drinks sachet water and uses plastic carrier bags. The same way, domestic solid wastes of all types, organic and inorganic are generated by people in urban communities but for some reasons they are not able to dispose all these wastes legally (Mariwah, Kendie & Dei, 2010). The unit measure of the sample frame was permanent residential status of a community member who was 15 years and above, and had lived in the study area for at least two years. An adolescent age limit of 15 years was set by the researcher with the view of getting respondents who were responsible and were likely to understand environmental issues.

Table 2: *Sample Size Determination by Proportional Representation*

| Urban Communities | Total Population | | | Sample Population | | |
|--------------------|------------------|--------|--------|-------------------|--------|-------|
| | Total | Male | Female | Male | Female | Total |
| Cape Coast Metro | 101,518 | 48,744 | 52,774 | 188 | 199 | 387 |
| Amanful/Reg. Adm. | 43,397 | 20,831 | 22,566 | 44 | 45 | 89 |
| Kotokuraba/Tantri | 36,003 | 17,281 | 18,722 | 36 | 41 | 77 |
| Pedu/Abura | 29,866 | 14,336 | 15,530 | 34 | 37 | 71 |
| Cape Coast Central | 22,111 | 10,613 | 11,498 | 30 | 33 | 63 |
| UCC/OLA | 20,156 | 9,675 | 10,481 | 23 | 23 | 46 |
| Adisadel | 18,361 | 8,813 | 9,548 | 20 | 21 | 41 |

Source: Ghana Statistical Service, 2010.

In addition to the 387 main respondents in Table 2, I also selected editors of Metro TV, TV3 and Coastal TV, stations as respondents. The selection was based on the choices made by respondents to the questionnaires administered. They were asked to select from among five TV stations, their favourite or the TV station they watched most.

Six FM radio stations were presented for the 387 respondents to select their favourite or most listened to station from. Three radio stations, Sompaa, Ahomka and ATL were selected by the respondents as their most preferred choices.

Instruments for Data Collection

Kendie (2000) defined data as the unitary relationship between observations and the real world phenomena. He further explained that the description of the real world requires a matching of what we see or perceive

and what really exists. Mensah, Enu-Kwesi and Agyenim (2004) also defined data as factual information on a particular subject which is used as the basis for reasoning, discussion, and calculation. Indeed data are the building blocks of knowledge (Kendie, 2000). The choice of instrument and design for data collection were therefore very crucial for the study. This was to avoid errors that can negatively affect accuracy, reliability, and validity of the findings (Kendie, 2000). Three main data collection tools were used to collect the necessary data for the study. These were questionnaire, interview guide and content analysis of environmental sanitation coverage by TV3.

The questionnaire generally consisted of closed-ended items having a total of 72 items. It was divided into three main sections which are demographical data, environmental sanitation consciousness and practice, and plastic bags and environmental behaviour (see Appendix A). The other instrument used in the study was interview guide for news editors of TV3 and Metro TV stations. The interview guide for the two TV news editors were mainly open ended questions of nine (9) items (See Appendices B and C for detail). Content analysis of environmental news bulletins of TV3 using designed coding scheme was also used by the researcher to assess the types and content of environmental sanitation coverage of the television station.

Internal Validity and Reliability of the Instruments

Content-related evidence and face validity was used to ensure validity of the instruments (Questionnaire & Interview Guides). According to Fraenkel and Wallen (2005), content-related evidence helps to determine if the content of the instrument contains an appropriate or adequate sample of the domain it is supposed to represent or reflect.

Pilot-testing of Instruments

The questionnaire was pilot tested for its reliability at Elmina also in the Central Region to ascertain its reliability. The Cronbach's alpha reliability test was conducted in the SPSS and it yielded a reliability coefficient of 0.7501 as against the acceptable minimum cut-off value of 0.6000 (Leech, Barrett & Morgan, 2005). This implies that the questionnaire had an 'adequate' internal according to Leech et al. (2005). The interview guide was reframed with the help of experts in the area of this study. Hence, the researcher was very optimistic that it can collect the desired data for the study.

Data Collection Procedure

I used survey research, documentary analysis of mass media broadcasts and face-to-face structured interviews to collect both primary and secondary data that met the general and specific objectives of the study. The questionnaire was used to collect primary data from 387 respondents from the target population of urban community dwellers. I trained five (5) research assistants who could speak both English and Fante languages to assist in the administration of the questionnaires. The target population was heterogeneous in nature and in terms of languages spoken. Those who could read and write English were allowed to fill the questionnaire by themselves.

The documentary or content analysis was used to extract requisite data on environmental sanitation from news bulletins of TV3 from January 2010 to December 2011. The structured interview guide was used to solicit the views of news Editors of Metro TV and TV3 on littering with plastic bags, domestic solid waste, open air defecation and environmental consciousness of urban dwellers. I chose a mixed-method design to obtain a variety of information on

the issue being studied so as to use the strength of any of the methods to overcome any deficiencies that the other methods might exhibit (Sarantakos, 2005).

The specific variables that the study considered in the documentary study of environmental information coverage by TV3, were 'types', 'contents' of information, and 'strategies' by which it generated environmental news for broadcast.. These three variables form the core issues of the study. Other variables that constituted the background or subsidiary issues were, 'frequency', 'length' 'direction' of broadcast, 'phone-in', 'picture accompaniment' and 'assessment' of the environmental information.

Coding of Content Analysis

For analytical purposes, the following details were identified and coded from TV3 news bulletins on environmental sanitation from 2010 to 2011: Types of environmental information, contents or topics, Strategies or sources, frequency and length of broadcast. The others were phone-in, direction, assessment or emphasis and video accompaniment. The coding scheme was developed specifically for this study, as argued by Jose and Shang-Mei (2007) any content analysis depends on coding categories defined beforehand. A study into environmental communication is not new but the problem definition was such that the researcher could not find any pre-described or conventional categories that could be used for this type of analyses.

Classification of Variables on Coding Scheme

The variables, 'types' of environmental information in this study was referred to as mass media reports in the forms of 'events' and 'issues', in

other words, news and programmes. An ‘event’ type of media environmental information referred to an event that had happened immediately and conveyed details about, “who says or does what, by who and to whom, at what place, time, or what happens at where, at what time and at what cost,” which was otherwise known as “straight or hard” news coverage (Reinemann, Stanyer, Scherr&Legnante, 2011). Examples were people being addressed during a clean-up exercise by some personality, provision of dustbins by Assembly, advice to the public to relate to the environment responsibly. The ‘issues’ type of media environmental information referred to media programmes that put a past environmental sanitation topic into perspective, focus on plans for the future and provides alternative solutions (Reinemann et al., 2011). Programmes such as interviews, panel discussions, commentaries, jingles, advertisements and documentaries geared towards action and awareness building campaigns and education about littering with plastic bags, domestic solid waste, open air defecation and Metropolitan Assembly sanitation investment profile was considered as ‘issues’. Radio and TV advertisements such as ‘Watch these things’ ‘Keep Ghana clean’, Lever Brothers ‘Clean Mama’ sanitation programmes were captured under this.

The variable, ‘contents’ of environmental information referred to environmental sanitation topics or issues the media had covered with specific reference to plastic bags, domestic solid waste and open air defecation. These topics were considered in the context of human interactions with the environment by way of waste disposal. The content variable also referred to media messages that were targeted at informing the public on sanitation investments made by the government, private individual or institution. The

topics that were examined under ‘contents’ were assessed under, ‘causes’, ‘effects’ and ‘mitigation’ of the environmental sanitation problem. That is, were the broadcasts more about informing viewers about the cause of the problem, effects, mitigation or a combination of the variables?

The variable ‘strategies’ (mode of news generation) referred to how TV3 came by the environmental information for broadcast or its sources of environmental information. It is argued that media sources play an important role in shaping the news content. They do so by identifying problems and prescribing potential solutions. They set parameters and define terms of reference (Kula, 2004).

I examined ‘strategies’ under enterprise and routine strategies or sources of media report. Enterprise reporting involves news stories that are not based on press releases or news conferences. Enterprise news reports are the stories a reporter digs up on his or her own or what many people call “scoops.” Enterprise reporting goes beyond merely covering events. It explores the forces shaping those events (Rogers, 1986). Enterprise report comprises features, programmes and serious investigative pieces while routine reports are run-of-the-mill events which are common or daily planned coverage of pre-scheduled events.

Other variables that constituted background information were ‘frequency’ ‘length’, ‘direction’ of broadcast and ‘phone-ins’. These variables in this context were to find out how many times TV3 aired the particular news a day, how many seconds or minutes was allotted to the news, was the news positive, negative or neutral and finally, was there opportunity for inputs to be made by viewers through interactive phone-ins. Copies of questionnaire,

interview guides, table of sampling procedure, coding scheme for content analysis have been attached as appendices A, B and C.

Data Analysis

As already indicated, data is the building blocks of knowledge. The essence of data collection is to assist in solving a problem under a consideration or situation that undermines the quality of life of a society (Kendie, 2000). However, data in their raw state do not provide information that would result in “succinct and salient knowledge needed to solve a problem or to show patterns or directions”, unless, they are analysed (Frank et al. 1979, cited in Kendie, 2000). Therefore, primary and secondary data collected through questionnaire, interviews and content analysis were analysed using both descriptive and inferential statistics. Statistical Product for Service Solutions (SPSS) version 18.0 software was used to aid in the data analysis. Frequencies and percentages were used to analyse demographical data and research questions one and three. Content analysis was used to answer research question two.

The study attained a 100% retrieval of questionnaire. This implied that all the 387 respondents fully completed their copies of the questionnaire. The assistance of the trained research assistants had really paid off despite the financial strain involved.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results and discussions of the findings. The results were presented in four segments to cover the demographic characteristics of respondents, the types and contents of environmental sanitation information, strategies used by the mass media to raise environmental consciousness of respondents and the effects of environmental information on the sanitation practice and health of respondents.

Demographic Characteristics of the Respondents

The demographic characteristics of the respondents were explored under the headings, age distribution, gender distribution, educational status and marital status. The others are occupation, languages spoken and duration of stay in the community as shown in Tables 3-7 and Figures 3 and 4. The study covered six urban communities, namely; Amanful/Regional Administration, Kotokuraba/Tantri, Pedu/Abura, Cape Coast Central, UCC/OLA and Adisadel.

Table 3 presents the distribution of respondents by age. A uniform class interval age grouping technique was used.

Table 3: *Age Distribution of Respondents*

| Age (in years) | Frequency | Percentage |
|----------------|-----------|------------|
| 15 – 19 | 13 | 3.36 |
| 20 – 24 | 36 | 9.30 |
| 25 – 29 | 72 | 18.60 |
| 30 – 34 | 103 | 26.61 |
| 35 – 39 | 96 | 24.81 |
| 40 – 44 | 32 | 8.27 |
| 45 – 59 | 23 | 5.94 |
| 60 and above | 12 | 3.10 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

Age is a factor valued much in life. It often determines a person capability and thinking ability when it comes to performing a task. It is with this and others that age 18 is an employable one and also qualifies a person to vote in Ghana. The majority (82.69%) of the respondents were aged between 15-39 years. According to Ghana's employment regulations, it means most of the working class are in this age range. Responsibility at times goes with age in Ghanaian society and mostly in our rural areas. The reason being that older persons can discern right from wrong and these inform who should take what responsibility in society. The sampled respondents in the 15-39 years age group are full of energy to work. Fifty-five representing 14.21 percent of the respondents were 40-59 years, while the remaining 3.10 percent were at least 60 years.

Also, the study examined the gender distribution of respondents using the pie chart. Figure 3 presents the results.

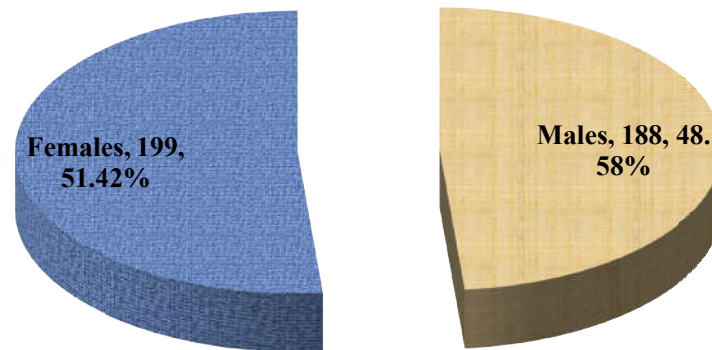


Figure 3: Gender distribution of respondents

Source: Field data, 2011.

Gender by nature determines what role one has to play, particularly at home. In the traditional setting, men and women have their distinctive roles to play. Females were the majority (51.42%) of the group of people sampled in the study. For the fact that men and women have their functions at home, society and the nation as a whole, the nation Ghana recognises this and every population census takes this into account (Owusu-Sekyere, Osumanu, Abdul-Kadri, (2013). For instance, it is common knowledge that women have to keep the home while the men look for bread for the family. Cleanliness of homes is the direct responsibility of women. However, the men have to play an active role in keeping our towns and cities clean from filth.

Formal education in our contemporary world is the key to human development. It is believed that enlightened citizens are somewhat empathetic to the environment. Table 4 presents the educational status of respondents.

Table 4: *Educational Status of Respondents*

| Level of education | Frequency | Percentage |
|---------------------|-----------|------------|
| No formal education | 42 | 10.85 |
| Basic education | 155 | 40.05 |
| Second cycle | 120 | 31.01 |
| Tertiary education | 70 | 18.09 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

From the sampled respondents, it was noted that, more people had access basic education and 18.09 percent also had attained tertiary level of education in the communities (see Table 4). This is an indication that there were a lot of people in these communities that could be used to educate those around them about developmental and health related matters. Forty-two (10.85%) of the sampled respondents indicated that they did not have formal education but it was possible that some of these people had a lot of life experiences to bring to bear on their communities. For instance, children who do not want go to school or even learn any trade for their own good and society would be counselled to do the right thing by using their experiences in life.

The study also solicited data on the marital status of the respondents. Table 5 summarises the details of the results.

Table 5: *Marital Status of Respondents*

| Status | Frequency | Percentage |
|-----------|-----------|------------|
| Single | 186 | 48.06 |
| Married | 159 | 41.09 |
| Divorced | 3 | 0.78 |
| Separated | 25 | 6.46 |
| Widowed | 14 | 3.61 |
| Total | 387 | 24.81 |

Source: Field data, 2011.

In Table 5, the majority (51.94%) of the sampled respondents were single, while 41.09 percent were married. Those who were not married normally have much time at their disposal to spend and they also mostly stay with somebody or depend on someone. In Ghana, it is presumed that married people have much more responsibilities at homes and communities. Often, they have other dependants to care for, either to attend school or learn a trade. Divorce is a state not much appreciated among Ghanaian. When it occurs, the parties involved are frowned upon no matter the circumstance surrounding it. Only 0.78 percent of the sampled respondents were divorced and about 7 percent of the respondents were separated from each other as husbands and wives.

Similarly, the researcher sought to understand the occupational activities of the respondents. The study identified some respondents to be students, farmers, among others. Table 6 presents the details about their occupations.

Table 6: *Occupation of Respondents*

| Occupation | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Student | 81 | 20.93 |
| Unemployed | 39 | 10.08 |
| Trader | 102 | 26.36 |
| Artisan | 53 | 13.70 |
| Fisherman/fishmonger/farmer | 21 | 5.43 |
| Retired | 13 | 3.36 |
| Civil servant | 50 | 12.90 |
| Other workers | 28 | 7.24 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

From Table 6, the major occupation of the sampled respondents was trading (26.36%). This is evident when one visits the communities, be it day or night. People could be seen busily selling on streets and in stores. Most items sold were packaged in polythene bags which have their associated challenges to the environment. Cape Coast is noted for having a lot of educational institutions which attract people across the length and breadth of Ghana. It can be noted that 20.93 percent of the respondents were students which was an indication that more people were going to school to better their lot.

Cape Coast, formerly the nation's capital town, is currently the regional capital of the Central region. It has a lot of institutions and offices, either private or public owned. Civil/public servants who constituted 12.90 percent of respondents were also scattered in the various communities sampled for the study. They at a point in time have to retire from active work. In

Ghana, the statutory age for retirement is 60 years and from the sampled respondents, there were 3.36 percent retirees.

Language is one of the means through which we communicate mostly as human beings. In Ghana, we have many languages across the length and breadth of the country. Due to work, education and other factors, these languages have spread, including foreign languages that are also infiltrating into the country for which Cape Coast is not exempted. It is believed that the language used in communicating environmental and sanitation matters on radio, TV or print media are critical if understanding of issues by listeners is considered. Table 7 presents the details of languages used to educate respondents on environmental and sanitation issues.

Table 7: Languages Spoken by Respondents

| Languages | Frequency | Percentage |
|--------------------|-----------|------------|
| Akan | 345 | 89.15 |
| Ewe | 10 | 2.58 |
| Ga/Adangme | 7 | 1.81 |
| Northern languages | 9 | 2.33 |
| Others | 16 | 4.13 |
| Total | 387 | 24.81 |

Source: Field data, 2011.

The dominant ethnic language spoken in the areas where the study took place was Akan 89.15 percent and the minor language was Ga/Adangme (1.81%). It is not surprising that Akan was the dominant language spoken because the people of Cape Coast are Akan speaking. The minor language being Ga/Adangme among the languages in Table 7 is also not much of a

surprise in that these people might either be workers or students staying in the study communities.

Duration of Stay in the Community

People become more acclimatised with their environments depending on the number of days, months or years they have stayed in that environment. Therefore, the researcher analysed the number of years that respondents had spent in their localities. The results are presented in Figure 4.

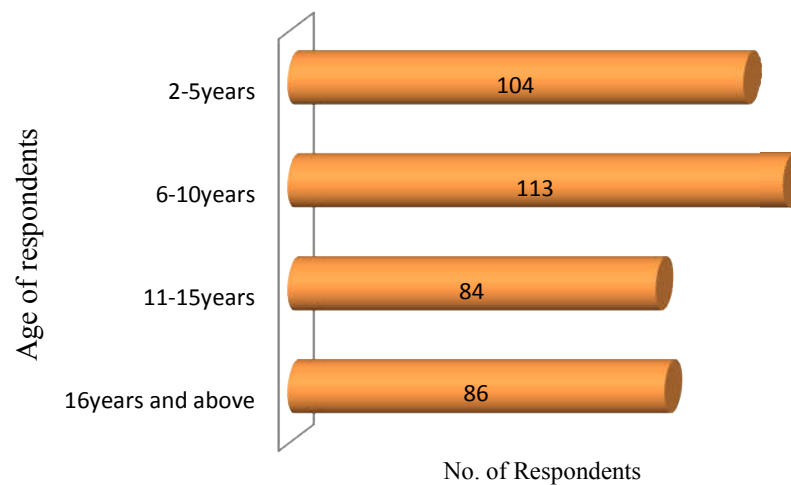


Figure4: Respondents' duration of stay in the study area

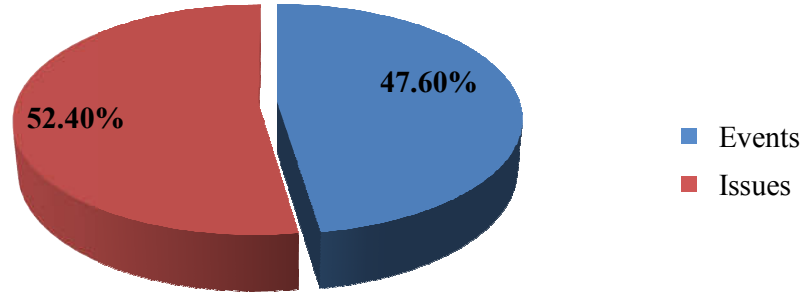
Source: Field data, 2011.

In Figure 4, respondents who had stayed in the study community from about 2-5 years were 104 while those who have stayed from 6-10 years were about 113 people. It can be inferred from their long years stay in the communities that they were much familiar with the environment where they lived and could reminisce past environmental situations in the community.

Types and Contents of Environmental Information Disseminated by Mass Media

In a bid to examine the types and contents of environmental information disseminated by the mass media (TV3) on littering, I did a content analysis of 63 environmental sanitation news bulletins between 2010 and 2011. A coding scheme was prepared (See Appendix C) to extract, collate and analyse electronically the variables; 'types' and 'contents' of environmental sanitation news the station had broadcasted within the period. Some background information or subsidiary issues to the core variables such as assessment, direction of the news and video accompaniment were also analysed. Information from structured interviews conducted with news editors of TV3 and Metro TV were also employed to answer this research question.

News in general, is to inform, educate, entertain and preserve the cultural values of society. The types of news, thus, event or issues oriented news disseminated by the media, are very crucial to the listening and viewing public because of the effect each type has on the patrons. Television news, for instance, is an attention receiver because of the still and motion pictures associated with it. Figure 5 represents issues and event oriented news covered by TV3 on environmental sanitation.



*Figure 5:*Types of environmental information covered by TV3

Source: Field data, 2011.

The analysis shows that TV3 covered 52.40 percent of ‘issues oriented and 47.50 percent of ‘events’ oriented news. Muazu (1991) has identified that putting environmental information in perspective in the form of issues oriented news was the best to bring the necessary education to the target group. Issues oriented news focus on plans for the future, provides alternative solutions and delayed rewards (Reinemann et al., 2011). On the contrary, event oriented or straight news broadcast focused on what had happened immediately and conveyed details about, “who says or does what, by who and to whom, at what place, time, or what happens at where, at what time and at what cost.” It provides immediate reward. I observed from the documentary review that feature stories on environmental sanitation were what constituted issues oriented coverage by TV3. Some extracts culled from the bulletins were:

“The Essikado community faces an outbreak of epidemic if sanitation is not improved. The community of about eight thousand residents is choking under filth” (Prime-Time News at 7 pm by Ebenezer Abakah-Ebanak, 5th May, 2011).

“The garden city of Ghana is gradually turning into a city of filth. Kejetia is considered the hub of Kumasi, but the area is gradually turning into a dumping site. Consistent littering is said to be crippling the efforts of the Kumasi Metropolitan Assembly to keep the city clean” (Prime-Time News at 7.00pm on 6th November, 2010 covered as programme).

Kwansah-Aidoo (1999) stated that one way by which the media in Ghana had tried to make the public more conscious of environmental issues was through their news reports, stories and bulletins. A diverse opinion however, expressed about the effect of straight news report was that news about the environment (mostly disasters of one kind or the other) will not galvanise the people to do something about their own immediate environment (cited in Kwansah-Aidoo, 1999) and Aro (2015) contended that, for environmental communication to be successful, it must use a format other than straight news reporting. They argued that, news is usually reactive and news format mostly dwells on the spectacular which does not leave much room for a thorough analysis of the issues that could result in a better understanding of the environmental issues.

Content of Environmental Information

Mass media reports, whether event or issues oriented, deal with specific topics of the major subject matter. In the broad context of environmental sanitation, the information from TV3 was categorised into three topics so as to examine which topic(s) TV3 had covered most and with what emphasis. The news reports of TV3 were classified into three categories so as to examine which topic(s) TV3 had covered most and with what emphasis.

Table 8 shows the specific topics of environmental sanitation topics covered by TV3 including the subsidiary issues.

Table 8: *Contents of Environmental Information by TV3*

| Characteristics | Frequency | Percentage |
|--------------------------------------|-----------|------------|
| Content | | |
| Investment in sanitation | 41 | 65.10 |
| General sanitation | 12 | 19.00 |
| Domestic solid waste | 6 | 9.50 |
| Plastic bags | 3 | 4.80 |
| Open air defecation | 1 | 1.60 |
| Total | 63 | 100.00 |
| Assessment of content | | |
| Causes | 7 | 11.10 |
| Effects | 1 | 1.60 |
| Mitigation | 23 | 36.50 |
| Mitigation& Causes | 5 | 7.90 |
| Mitigation& Effects | 3 | 4.80 |
| Mitigation, Causes& Effects | 16 | 25.40 |
| Causes& Effects | 8 | 12.70 |
| Total | 63 | 100.00 |
| Video accompaniment with news | | |
| Yes | 54 | 85.70 |
| No | 9 | 14.30 |
| Total | 63 | 100.00 |

Table 8:*Continued*

| Direction of information | | |
|---------------------------------|----|--------|
| Positive | 21 | 33.30 |
| Negative | 39 | 61.90 |
| Positive & Negative | 3 | 4.80 |
| Total | 63 | 100.00 |

Source: Field data, 2011.

People listening or watching news on radio or television expect to hear information that can educate or inform them on a particular issue that would be of benefit to them. Environmental news is a type of news that can easily bring the desired development to communities (Meisner, 2009). From the analysis in Table 8, investment in sanitation and general sanitation topics gained prominence in TV3 news coverage. Investment in sanitation (63.90%) received more coverage. These were categorised as issues that had to do with financial and human resource (labour) investment, expressed in the provision of sanitation facilities, services, logistic and clean up exercises undertaken by public or private institutions or individuals. There is no way our environment can be free from filth and its related diseases if stakeholders or concerned individuals do not invest in sanitation. However, investment in logistics and clean up exercises without educating the citizens on the hazards of littering may not yield the needed result for which the money and energy have been used.

Agencies responsible for making sure our communities are kept clean should be seen playing their roles effectively and satisfactorily. Responses from the studied communities indicated that about 20 percent of news contents

were on general sanitation. General sanitation topics were issues relating to outbreak of diseases, food being sold at unhygienic places, flooding, shirking of responsibilities by officers concerned, etc.

Assessment of content of environmental sanitation topics covered by TV3 to find out where it had laid emphasis showed that 36.50 percent was on mitigation while 25.40 percent as a mixed of causes, mitigation and effects. Also, investment in sanitation received a higher coverage. It is therefore not surprising that by assessment of the coverage, mitigation of the environmental mess caused by human interaction with the environment topped the list. It is probably an indication that the mass media was reporting on environmental sanitation, but the emphasis, was more on mitigation activities expressed in the provision of sanitation facilities, logistics, and clean up exercises than education on causes and effects.

Coverage by TV3 from Table 8 shows that 61.90 percent of the coverage were of negative direction. That is, they were not favourable for the achievement of the desired development goals of pro-environmental sanitation consciousness as far as human interaction with the environment is concerned. I observed that TV3 had done more issues oriented news by type on investment in sanitation and mitigation and yet these were negative in terms of direction. The negative direction of the environmental information per the analysis was not because provision of logistics and facilities were bad by themselves.

I also observed that most of the news reports were on overflowing public waste containers. The containers were provided for the public to put in domestic solid waste yet they were neglected thus resulting in overflowing and littering around. Ironically, these containers were to serve a good cause, but

due to human negligence, they had rather become a nuisance and public health concern. Considering this phenomenon by the law of unintended consequence, the good intention of solving a particular problem of waste management using the public waste containers had itself turned out to become a problem, thus rendering the mitigation intervention negative.

TV3 from the analysis had 85.70 percent reports accompanied with videos. This was good because audio visual or video effect of TV news is very important for emphasis. It brings out the issues real to the viewer who perhaps in the absence of videos or pictures might find it difficult to conceptualise and appreciate the extent of the issue being talked about.

Strategies by Mass Media to Raise Environmental Consciousness

Every organisation or institution has a strategy to reach its target group. TV3 as an electronic media house is no exception. Strategies or modes of news generation are very crucial as far as the agenda setting theory of the mass media is concerned. It is in view of this that I the examined how TV3 came by its news reports, whether they were of their own creation or external sources. Strategies or modes employed in news generation by TV3 are presented in Figure 6.

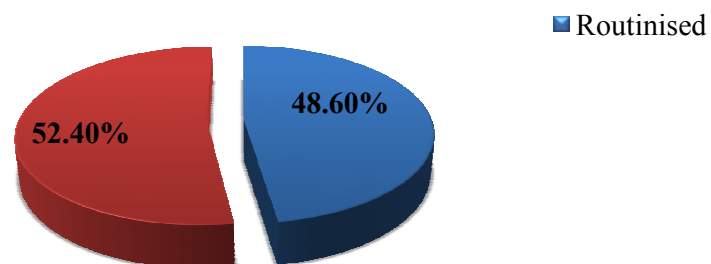


Figure 6: Strategies or modes of news generation by TV3

Source: Field data, 2011.

From Figure 6, TV3 had 52.40 percent of 'enterprise' and 47.50 percent 'routinise' news reports. This shows that TV3 most at times took the initiative to look for or scoop environmental information for broadcast by way of setting the agenda. It did not just wait for solicited news for its viewers.

Interviews with News Editors of Metro TV and TV3

Interview was one of the instruments I employed to collect data for the study. I interviewed two news Editors to solicit answers to compliment two of the research questions. These were types and content of environmental information covered by the media and the strategy they used to get the information. These two media houses, TV3 and Metro TV, were selected by respondents themselves in the survey conducted as their first and second TV stations they watched most. The two TV stations are located in Accra, but signals of their transmissions could be received in the Cape Coast Metropolis.

The interview generally sought to examine the place of environmental communication in the two media houses especially with respect to environmental sanitation. In order to achieve this, interviews with the news editors focused on, how often they reported on the topic, percentage of total broadcast allocated to the environment, strategies and creation of environmental desks. Others were; feedback processes, relationship with EPA, challenges and advice for both the public and government.

The responses were that Metro TV at least covered two major environmental news broadcasts on the Central Region and other regions each month. According to the News Editor, the roving reporter in the region paid routine visits to important public places such as the castle area, beaches, major drains and markets to do stories on the environmental sanitation situation of

these places. However, if the reporter's attention was drawn to anything that threatened the health of people in other communities such as epidemics and communicable diseases, he or she quickly attended to it.

TV3 Editor, on the other hand, said environmental news including sanitation across the country was so important that their daily news bulletins always had some issues on the environment. It could be on sanitation, water pollution, "galamsey" or something else. The environment was important that they could not neglect it in their daily news reportage during the station's 7GMT, Midday live, News360 at 7.00pm and even late news at 10.00pm.

With respect to percentage allocation of environmental news, Metro TV gave 10-20% of its news coverage to all aspects of the environment every month. The station did not give so much attention to politics but to social, human interest and development issues. TV3, unlike Metro TV, allotted 40% of total daily coverage to environmental issues and also gave almost equal prominence to politics, according to the News Editor. Much as one would expect the media to give more attention to environmental communication, there is also a caveat. Yankah (1994) was of the view that it was not a policy for media houses to give absolute air time or print space of their news stories to the environment alone when there were other competing or equally important topics to publish. News editors therefore viewed coverage of the environment as a social responsibility, to contribute to the creation of awareness among the general public on the dangers posed by environmental degradation.

The study sought to find out if the two stations, apart from straight news, had some special programmes to the environment or as Aro (2015) put

it, casting environmental information in a “format other than straight news reporting.” That is to say an “issue” type of information solely dedicated to environmental sanitation such as documentaries. The responses indicated that both Metro TV and TV3 did not have any strategy by way of a format or programme that was dedicated solely to environmental sanitation. The Metro TV News Editor said the station had just an hour for major bulletins to touch on all other issues of interest. Hence, the strategy adopted to focus monthly on all the regions, especially when the rainy season was approaching. The station had been doing this to sensitise people on possible flood disasters and environmental diseases associated with poor environmental sanitation. The station looked at environmental issues such as the habit of littering, authorities shirking their responsibilities and non-enforcement of bye-laws. It covered pro-environmental activities such as clean-up exercises. Another strategy used by the station was to provide a platform for Metropolitan Assemblies, Assemblymen/women, residents and all stakeholders during major news broadcast to educate or give their messages across to the public on the environment.

The editor was of the view that environmental sanitation issues could not be reduced to “talk shows” on air. They must be very factual and specific. Packaged in the form of short documentaries, highlighting causes of the environmental problems, effects and how it related to socio- economic lives of the people.

TV3 used to have a dedicated environmental programme dubbed, ‘Insight’. It was a thirty-minute documentary on environmental issues. But according to the editor, the programme had gone to ‘rest’. Notwithstanding,

the editor hinted that, there were some proposals on paper to be rolled out into action soon.

The two TV stations had environmental sanitation desks with senior journalists manning these desks. Metro TV had three reporters assigned to the environmental desk who have been nicknamed, “Bola reporters” by their colleagues. These reporters had their eyes on the ground to scoop environmental information for the station. TV3 also had environmental desk which was manned by a senior journalist with five reporters. The creation of functioning environmental desks is an indication that the two stations attached importance to the coverage of the environment. It also shows that a suggestion by Yankah (1994) that media houses should create environmental desks to provide adequate research and background to stories seemed to have been heeded to by TV3 and Metro TV.

On the issue of feedback from viewers on environmental news that were aired, Metro TV said it did follow ups of previous broadcasts. The follow ups were to find out if viewers and institutions concerned had taken the necessary action on issues they had raised in their previous broadcasts. That was, if people were changing their attitude towards the environment or institutions concerned had provided the needed sanitation facilities to solve the environmental problem the stations had pointed out. According to Metro TV, some viewers themselves called to give Metro TV feedbacks which at times were not aired. The station also advertised its contact numbers as crawling news for viewers to contact the station. The station from time to time did what was called, “Vox pop” or sampled public opinion for feedback.

By virtue of the social media platforms as technological advancement in communication, TV3 have been receiving feedbacks from its viewers on environmental news broadcasts. Viewers used Facebook, Twitter, e-mail, etc. The station also used a short code, 1734 by which viewers sent feedbacks. TV3 reporters, according to the News Editor, had also been very active on their phones too. By the same social media platforms, the station received hints on environmental problems from the public for broadcast. The adoption of various social platforms for feedback and the public alerting the TV stations of environmental problems that were news worthy underscore the assumption based on the model of environmental consciousness and socio-economic development (Kwansah-Aidoo, 2004). According to him, relevant environmental information would be disseminated by journalists in such a way that, recipients of the information would be able to recognise environmental problems and issues. One can also infer from what Funkhouser (1973) and Dearing and Rogers (1986) said that media agenda with the passage of time drives public agenda is true. It further gives credence to Cox (2006) that, environmental communication had the attributes of being a pragmatic vehicle that has the instrumental functions of educating, alerting, persuading and mobilising people.

The mandate of EPA according to Act 490 is to raise the awareness of Ghanaians on the importance of protecting and enhancing the environment (EPC, 1994). The mass media (electronic and print) was one of the vehicles EPA had identified in its Environmental Education Strategy for Ghana document in 1994 to work with. It was to collaborate with the mass media to promote environmental awareness in the viewing, listening and reading public.

I therefore tried to find out how the relationship or the collaboration had fared over the years. Metro TV said the EPA had failed a lot in this direction. They hardly gave access to the media. It was the Media that rather went to them. The media would fish out for environmental information and had to beg EPA to comment on it. He asserted the EPA was not readily available, unless there was environmental crisis. The relationship with EPA was characterised with a lot of bureaucratic bottlenecks. There was no collaboration with EPA with respect to production of dedicated environmental programmes such as documentaries for broadcast. According to the editor, EPA was not proactive. They only acted when there was a problem or they invited the media to cover their annual International Environment Week celebration in June.

Though the relationship of TV3 with EPA was said to be very cordial, the extent of this cordiality was not different from what Metro TV had with EPA. TV3 only relied on EPA to sort out technicalities of environmental news broadcast. According to the TV3 news editor, journalists would see environmental issues with “journalistic eyes”.

“We do not have the technical experts who can give interpretation of what we see, so we rely so much on EPA for interpretation, advice and how a specific environmental problem can affect the people.”

From the various responses on Media-EPA relationship one can infer that the media-EPA relationship had not translated into serious collaborative efforts to produce and broadcast environmental programmes to educate the public over the years. According to EPA’s own documented strategy in 1994, it was to liaise with the media institutions to produce documentaries on the

environment and to formulate official policy on the environment for the mass media.

The current relationship however with the media seemed to have been reduced to only media contacts for technical interpretation of environmental issues the media could not handle. Environmental issues indeed are said to be very technical. It therefore requires some special knowledge and periodic training for journalists who are engaged in environmental reporting. It is for this reason that Dartey (2011) observed that the mass media held the key to influence attitudinal and behavioural change of Ghanaians particularly on the environment through conscious sensitisation and education. Dartey, therefore, called on the EPA to avail itself as an important news source that view environmental communication and media intervention as critical factors in its organisational success.

On the issue of challenges faced by the media in the course of reportage of environmental sanitation news, Metro TV said, the challenge had to do with funding. With funding from government, philanthropists and NGOs, the mass media could produce daily advertisements, jingles and documentaries on the environment to educate the public.

For the TV3 Editor, this was what he had to say on the issue:

“We do face some challenges of course, in doing our work. First and foremost, understanding the issues involved. If for instance, people are engaged in “galamsey” and are using certain chemicals, to the journalist, it is not easy to understand what this means and its’ effect on the environment and the people.

Sometimes, clearly getting the picture out and letting it out to the public is a challenge, because we do not have the expertise or the skills to interpret the situation. The other challenge is how to get the people affected by the environmental situation to know and understand that what is happening is a danger to their health. If people live in unhygienic and poor environment, our job as journalists, is not only to film, put out the story and leave it. Our job also includes letting the people know the dangers that they are exposed to. Now these are people who have been living in this environment all their lives.”

Another challenge faced by journalists was that they did not only put out stories for the sake of it and left them. The aim of putting out the stories was to convince policy makers and the people who lived around the area where the environment was being abused to influence policy direction towards the issue. The challenges journalists faced was the failure of policy makers and institutions to take remedial actions when attention was drawn to environmental problems prevailing in the communities. This persistent failure on the part of those who had to take decisions, especially, government institutions to make available the needed facilities to solve the problem or to enforce the law discouraged the journalists.

The researcher found the concern being raised by the media as a challenge to the environmental consciousness and development model, which under-pinned the study. The model identified government as a stakeholder

that has to create a conducive environment for socio-economic development. Government has to take the necessary environmental actions by way of motivation, provision of facilities, logistics, enforcement of environmental laws and others. All these, the model said, would culminate into conducive environment for promoting effective environmental communication in society.

On the attitude of littering with plastic waste, domestic solid waste disposal and open air defecation, the researcher asked the editors what advice or suggestion they had for the general public. The Metro TV editor said,

“Poor environmental sanitation is not only an attitudinal issue but a combination of failure to provide facilities, lack of maintenance of the facilities and absence of deterrent measures such as punishing the culprits.”

He disagreed with people who said sensitisation had not worked. It was because the facilities had not been provided. Those provided were also not adequate. Punitive measures were also not enforced. The editor suggested that the public should embrace the polluter pays system, which he said was one of the efficient ways of managing waste. He was of the opinion that if those who were in charge of keeping sanitation facilities like public places of convenience were diligent in their work, making sure that the toilets were kept neat, free of offensive smells and flies, most users would not resort to open air defecation. He cited China, where as a policy, a toilet facility provider could be prosecuted and jailed if “one fly” was found at the facility. He was of the opinion that those who failed to provide the requisite sanitation facilities and

maintained them were those who always said the problem was mainly “attitudinal.”

For TV3, littering was a huge attitudinal problem. The Editor gave a personal eye witness account of the situation:

“It is not lack of facilities because, I have seen places where there were facilities for disposal of waste yet the litter was on the ground while the containers were empty. There were some societies where there were no facilities at all yet the people don’t drop litter around. The people were conscious of the environment.”

The Editor rhetorically asked, “why will people not drink sachet water and leave the waste on their beds and yet, they will drop it on the ground when outside of the home?” Notwithstanding the different opinions expressed, both editors proposed that culprits must be publicly shamed for abuse of the environment.

On the media’s own appraisal of its performance on environmental sanitation reporting in the country, TV3 was of the opinion that as far as environmental news was concerned, the media had performed poorly in that direction because they did not find it lucrative or vital. Hence, there was so much attention on politics and others, to the neglect of the environment. He said environmental news had not been given prominence. They did not receive the big banner headlines. They were placed in obscured pages or slots of print media for instance. To him, funding of the media was not the solution. The Editor believed that if the media in general had led the crusade by allotting just 5% of their daily news coverage to environmental issues like sanitation, it

might not take even 3-4 months before the environment would become clean. Companies could be involved but the onus lied on the media.

Effect of Environmental Information on Environmental Consciousness and Practices

To answer the research question on how environmental information from the mass media affects the environmental practices of urban communities, the researcher examined respondents’ access to radio and TV sets, media patronage, environmental consciousness and waste disposal practices of the respondents. Various questions were posed to the respondents. The responses are presented in Tables 9.

Table 9: *Media Patronage–Radio*

| Characteristics | Frequency | Percentage |
|--|-----------|------------|
| Access to functioning radio set | | |
| Yes | 348 | 89.90 |
| No | 39 | 10.10 |
| Total | 387 | 100.00 |
| Favourite radio station | | |
| Sompa | 96 | 24.80 |
| Ahomka | 84 | 21.70 |
| ATL | 64 | 16.50 |
| Radio Central | 59 | 15.20 |
| Eagle FM | 37 | 9.60 |
| YES FM | 33 | 8.50 |
| None | 14 | 3.40 |
| Total | 387 | 100.00 |

Table 9: *Cont'd*

| How often respondents listen to Radio | | |
|--|-----|--------|
| Daily | 312 | 80.60 |
| Occasionally | 37 | 9.60 |
| Weekly | 23 | 5.90 |
| Not applicable | 13 | 3.40 |
| Others | 2 | 0.50 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

A lot of the sampled respondents (80.6%) listened to FM radio stations in their communities daily (see Table 9). Apart from television, the commonest medium to inform and educate was radio. Issues discussed daily helped to re-enforce the subject matter. Since majority of the respondents did listen to radio daily, it would help to drum home some particular issues that would be of a great benefit to the communities. There were six FM radio stations in the Cape Coast Metropolis within the six study areas. The FM radio station mostly listened to in the sampled communities was Sompa FM. It had 24.80 percent of preference by the respondents. Ahomka was the next favourite FM radio station followed by the ATL (16.50%), Radio Central (15.20%), Eagle FM (9.60%), and YES FM (8.50%). However, 3.40 percent of the respondents indicated they did not listen to any FM radio stations in the six communities. This could be attributed to the usually acrimonies that characterise discussions on airwaves. Also, during news broadcast, environmental cleanliness usually may form part of news and this can at least occur once in a week.

Furthermore, the researcher requested the respondents to identify their reasons for listening to radio. Table 10 presents the details of their responses.

Table 10: *Reasons for Listening to Radio*

| Characteristics | Frequency | Percentage |
|--|-----------|------------|
| Reasons | | |
| Gives a lot of news | 221 | 57.10 |
| Has educative programme | 111 | 28.80 |
| Plays a lot of music | 45 | 11.60 |
| Broadcast a lot of religious programme | 5 | 1.30 |
| Gives opportunity for phone ins | 4 | 1.00 |
| Has articulate presenters | 1 | 0.30 |
| Total | 387 | 100.00 |
| Radio topics that appealed to respondents | | |
| Social issues (religious/entertainment) | 114 | 29.50 |
| Environmental issues | 88 | 22.70 |
| Political issues | 76 | 19.60 |
| Health issues | 64 | 16.50 |
| Economic issues | 19 | 4.90 |
| Not applicable | 19 | 4.90 |
| Others | 7 | 1.80 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

Radio stations are to educate, inform and entertain. Everybody has a reason why he or she listens to a particular station. People do not listen to radio for the sake of it so if a person's expectation is not met the person would either tune in to other radio stations or forget about radio entirely. In Table 10, majority (57.10%) of the sampled respondents did listen to radio for news. News help individuals to be updated on current issues in the community or the country. Due to the advancement in technology, mobile phones can be used to tune in to radio stations. This has made it easy for people not to carry with

them the normal ‘box’ radio. Educative programmes also had 24.30 percent of the respondents paying attention to this educative programme. From the analysis, it is therefore clear that the media (radio) did more of issue oriented news than event oriented.

Also, a cursory look at Table 10 indicates that social issues (religious/entertainment) were the issues capturing the attention of the respondents. Closely related to social issues were environmental issues and health issues. It is obvious that what might take the attention of respondents were social, health and environmental issues. It is also an indication that respondents did listen to information on the environment that would culminate in change in attitude of people in the communities provided they paid heed to the information.

The study also identified some specific radio programmes within the Metropolis. Table 11 presents the details of the results.

Table 11: *Some Specific Radio Programmes Respondents Listened to*

| Station | Programmes | Theme | On air (Yes/No) | No. | % |
|---------------|-----------------------|-------------------|--------------------|-----|------|
| Radio Central | Talk to your minister | Mixed development | Yes | 30 | 7.75 |
| | ‘Fafaadwen’ | Mixed | No | 27 | 6.98 |
| | Papa Tankas | Sanitation | No | 21 | 5.43 |
| | Keep Ghana clean ad | Sanitation | No | 21 | 5.43 |
| | Hi Ha Ho | Health | No | 21 | 5.43 |
| | You and your health | Health | No | 15 | 3.88 |

Table 11: *Cont'd*

| | | | | | |
|-----------|----------------------|-------------------|----------|-----|--------|
| ATL | Health tit bits | Health | Yes | 25 | 6.46 |
| | 'Mantemasem' | Mixed development | Yes | 22 | 5.68 |
| | Efutusem | Mixed social | Yes | 21 | 5.43 |
| Station | Programmes | Theme | On air | No. | % |
| | | | (Yes/No) | | |
| | Hwanadwuma' | Mixed | Yes | 21 | 5.43 |
| | 'Biribisoronko' | Social | Yes | 5 | 1.29 |
| Sompa | Sompa drive | Mixed development | Yes | 37 | 9.56 |
| | Nyansapo | entertainment | Yes | 30 | 7.75 |
| | Dwasonsem | Mixed | Yes | 25 | 6.46 |
| | 'Obi nyima obi kyere | Social | Yes | 17 | 4.39 |
| | Sompa drive | Health | Yes | 12 | 3.10 |
| | 'Abusua fie | Social | Yes | 10 | 2.58 |
| Ahomka FM | Me mahwanakye' | Mixed development | Yes | 27 | 6.98 |
| Total | | | | 387 | 100.00 |

Source: Field data, 2011.

Radio is one of the mass media gadgets that can be found almost everywhere. It is one of the electronic media which has become very interactive in the sense that opportunities are created for listeners to 'phone in' while the programme is being aired for their contributions. Programmes such

as ‘Talk to your minister’ and ‘Hwanadwuma’ were some of the favourite programmes of respondents. However, ten of the respondents could not actually remember the particular programme they listened to (see Table 11). Due to the interactive nature of radio through ‘phone in’ facility, listeners could also make their views known and these would definitely set the agenda for discussion in the sampled communities. The more people talk about the issue on the table for discussion; the more it sinks into people’s mind. It may lead to change in attitude in the communities and the nation as a whole.

Similarly, the study explored among the respondents the extent to which they viewed televisions. Table 12 is the summary of their responses.

Table 12: *Media Patronage – TV*

| Characteristics | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| Access to functioning TV set | | |
| Yes | 326 | 84.24 |
| No | 51 | 13.18 |
| Not applicable | 10 | 2.58 |
| Total | 387 | 100.00 |
| Favourite TV station | | |
| TV3 | 155 | 40.05 |
| Metro | 99 | 25.58 |
| Coastal TV | 58 | 14.99 |
| GTV | 38 | 9.82 |
| TV Africa | 37 | 9.56 |
| Total | 387 | 100.00 |

Table 13: *Cont'd*

| How often respondents watch TV | | |
|---|-----|--------|
| Daily | 278 | 71.80 |
| Occasionally | 61 | 15.80 |
| Weekly | 27 | 7.00 |
| Not applicable | 19 | 4.90 |
| Monthly | 2 | 0.50 |
| Total | 387 | 100.00 |
| Reasons for watching TV | | |
| Gives a lot of news | 177 | 45.70 |
| Has educative programmes | 119 | 30.70 |
| Social issues (religious/entertainment) | 36 | 9.40 |
| Opportunity for phone-ins | 25 | 6.50 |
| Do a lot of programmes on sports | 22 | 5.70 |
| Plays a lot of music | 7 | 1.80 |
| Others | 4 | 1.00 |
| Total | 387 | 100.00 |
| Topics that appealed most to viewers | | |
| Social issues (religious/entertainment) | 124 | 32.00 |
| Health issues | 80 | 20.70 |
| Environmental issues | 74 | 19.10 |
| Political issues | 56 | 14.50 |
| Economic issues | 22 | 5.70 |
| Not applicable | 18 | 4.70 |
| Others | 13 | 3.40 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

Viewing television is an interesting thing because it appeals more to the human senses. The television station respondents preferred or watched most was TV3 (40.05%). TV Africa was the least 9.56 percent watched television station among the sampled respondents in the study communities (see Table 12). People have reasons for watching television and that of the sampled respondents were not different from some of these motives. Most respondents in the communities watched television because the stations either gave a lot of news or educative programmes in varied forms. Entertainment such as music forms only 1.80 percent of the sampled respondents. In terms of issues that appealed most to the respondents, social, health and environmental issues were some of them. Environmental issues were areas that have direct effect and bearing on the health of the people living in the study areas.

Table 13 displays television programmes respondents said they watched. Some were purely sanitation related while others were health, social, entertainment and a mixture of all topics.

Table 13: *Some Specific TV Programmes Watched by Respondents*

| TV station | Programmes | Theme | On air (Yes/No) | No. | % |
|------------|------------------------|----------------------|--------------------|-----|------|
| GTV | Woabo dam' | Sanitation | No | 23 | 5.94 |
| | Zoomlion promo (Ad) | Sanitation | No | 17 | 4.39 |
| | Clean mama | Sanitation | No | 15 | 3.88 |
| | You and your health | Health | Yes | 10 | 2.58 |
| | Complete woman | Health | Yes | 12 | 3.10 |
| | Roll out malaria | Health | No | 19 | 4.91 |
| | Smart people | Social | Yes | 21 | 5.43 |
| | Akan drama | Entertainment | Yes | 13 | 3.36 |
| | Adult education | Mixed development | Yes | 14 | 3.62 |
| | Health line | Health | No | 12 | 3.10 |

Table 13: *Continued*

| | | | | | |
|-------------------|------------------------------|-------------------|-----|-----|--------|
| Metro TV | Efutusem' | Mixed | Yes | 24 | 6.20 |
| | Full story | Mixed | No | 18 | 4.65 |
| | Good morning Ghana | Mixed development | Yes | 25 | 6.46 |
| | Health line | Health | Yes | 18 | 4.65 |
| | Musical drama on environment | Entertainment | Yes | 16 | 4.13 |
| Coastal TV | 'Me ahwan akye' | Mixed development | Yes | 25 | 6.46 |
| | Matters arising | Mixed development | Yes | 13 | 3.36 |
| | Apatakese" | Mixed development | Yes | 17 | 4.39 |
| TV3 | My news story | Mixed development | Yes | 15 | 3.88 |
| | Ghana's most beautiful | Entertainment | Yes | 18 | 4.65 |
| | Music! Music!! | Entertainment | Yes | 23 | 5.94 |
| TV Africa | Celebration of role model | Social | Yes | 14 | 3.62 |
| | Has forgotten | | | 5 | 1.29 |
| Total | | | | 387 | 100.00 |

Source: Field data, 2011.

Ogunleye (2002) was of the view that to address environmental problems effectively; awareness campaign has to be launched strongly through the mass media to change the negative attitude, practices and conditions that would bring about desired positive change. Environmental sanitation promo 'Clean Mama' and 'You and your health' on GTV were favourite programmes watched by respondents in the communities sampled with a percentage of 13.69. 'Clean Mama' was a promo by Lever Brothers. It had environmental and health issues, which were geared toward promoting the agenda of environmental cleanliness (see Table 13).

Adult education on GTV was the second preferred programme. This discussion programme cuts across so many areas of human endeavour. Ghana

Television (GTV) network had its channel transmission reaching the length and breadth of the country so almost everybody would benefit from its educative programmes.

Other Sources of Environmental Information

Dissemination of environmental information is not only the preserve of the mass media. Respondents were asked to indicate other sources by which they received or got environmental information, and Table 14 presents their responses.

Table 14: *Other Sources of Environmental Information*

| Sources | Frequency | Percentage |
|---|-----------|------------|
| Assemblymen/women | 106 | 27.39 |
| Metropolitan Assembly office | 92 | 23.77 |
| Religious bodies | 90 | 23.26 |
| Others (hospital, clinic, kinsmen, friends) | 61 | 15.76 |
| Social groups/Associations | 38 | 9.82 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

From Table 14, 27.39 percent of respondents indicated that assemblymen/women were other sources by which they got information on the environment. This was followed by religious bodies (23.26%). Klapper (1960) was of the view that the mass media did not ordinarily serve as a necessary and sufficient cause of audience effect, but rather functioned among and through a nexus of mediating factors and influences. Therefore, some people also rely on other news sources, which are usually traditional in nature.

Environmental Consciousness of Respondents

The study sought to find out the environmental knowledge base of the respondents by asking them some questions about how central the environment was to their lives. Questions on specific environmental problems they had identified in their communities, effects of littering on the environment, socio-economic effects and respondents' thoughts on why people littered the environment are presented in Table 15. The options to the questions were scored using: Strongly Agree = SA; Agree = A; Undecided =U; Disagree = D and Strongly Disagree = SD.

Table 15: *Environmental Knowledge Base of Respondents*

| Statement | SA (%) | A (%) | U (%) | D (%) | SD (%) | Total |
|--|---------------|---------------|--------------|---------------|---------------|----------------|
| The environment is everybody's property and therefore anybody can do what he/she likes with it. | 11 (2.8) | 5 (1.3) | 13 (3.4) | 178 (46.0) | 180 (46.5) | 387 (100.0) |
| The environment needs to be kept well for future generations | 221 (57.1) | 160 (41.3) | 1 (0.3) | 5 (1.3) | 0 (0.0) | 387 (100.0) |
| Littering with waste plastic bags e.g. pure water sachet, fan ice, yoghurt and take-away rubber has increased. | 99 (25.6) | 174 (45.0) | 20 (5.9) | 80 (20.7) | 11 (2.8) | 387 (100.0) |
| Openly defecating into gutters, at beaches and in bushes has increased. | 92 (23.8) | 136 (35.1) | 35 (9.1) | 105 (27.1) | 19 (4.9) | 387 (100.0) |
| Throwing of domestic solid waste into gutters and streams has increased | 86 (22.2) | 123 (31.8) | 45 (11.6) | 112 (28.9) | 21 (5.4) | 387 (100.0) |

Source: Field data, 2011.

In Table 15, respondents were asked to indicate their agreement with the statement that ‘The environment is everybody's property and therefore anybody can do what he/she likes with it’. More than 93 percent of the respondents had the view that the environment could not be treated anyhow by the respondents. This response was very encouraging and if this attitude could be translated into practise then, it would help preserve the environment for not only this generation, but for posterity.

In order to understand the specific environmental problems the respondents found, they were asked to identify them. Table 16 presents the details.

Table 16: *Specific Environmental Problems identified by Respondents in their Communities*

| Response | Frequency | Percentage |
|--|-----------|------------|
| If “Yes”, which of these is of most concern to you? | | |
| Littering with plastic bag | 108 | 27.9 |
| Littering with domestic solid waste | 83 | 21.4 |
| Open air defecation | 89 | 23.0 |
| Choked gutters | 36 | 9.3 |
| Others | 34 | 8.8 |
| Not applicable | 37 | 9.6 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

Respondents were asked if they were aware of any specific environmental problem in their communities. Majority (89.7%) indicated that they were aware of some environmental problems and had specified littering with plastic bags (27.9%) as the highest response. Plastic waste is said to be

one of the greatest environmental challenges facing the country though it constitutes just 4 percent of the total volume, it is the second largest waste generated in the country (Anku, 2009). Other responses indicated, which were not listed by the survey recorded (8.8%). Some of these responses were lack of gutters, fresh fish waste water people have been throwing behind their neighbours' houses.

Similarly, the study sought to solicit from the respondents some of the threats that littering posed to the environmental and their health in general. The summary of their responses is contained in Table 17.

Table 17: *Threats Posed by Litter as Thought by Respondents*

| Description | Frequency | Percentage |
|---|-----------|------------|
| Opinion on plastic threat | | |
| Blocks drainage system | 250 | 64.6 |
| Pollute the environment | 53 | 13.7 |
| Affect the beauty of the environment | 53 | 13.7 |
| Contributes to flooding | 31 | 8.0 |
| Total | 387 | 100.0 |
| Opinion on domestic solid waste | | |
| It choked gutters and contributes to flooding | 287 | 74.2 |
| It breeds mosquitoes | 75 | 19.4 |
| It attracts pests and rodents | 18 | 4.7 |
| Not applicable | 5 | 1.3 |
| Others | 2 | 0.5 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

From Table 17, the majority (64.6%) of the sampled respondents acknowledged that plastics blocked drainage systems. The same for littering with domestic solid waste (74.2%). This corroborates Ngnikam's (2001) and Sam's (2009) that uncollected wastes which is illegally dumped in open spaces, water bodies, storm-drainage channels or deposited along streets, block drainage channels thus causing increased floods in cities.

If the drainage systems in the communities are blocked with litter and it rains, water will have to find its way through the community, thus destroying people's belongings and sometimes public infrastructure. Property worked for, for so many years would have to go in a matter of minutes with flood due to irresponsible environmental behaviour. In some severe cases precious lives are lost.

The results are poverty and huge financial burden on both the individual and government. One reason why our environment has to be protected is for us to derive the maximum socio economic benefit from it. About 14 percent of the sampled respondents were of the view that dumping of plastics indiscriminately would destroy the beauty of the environment that is, the surrounding.

Most at times people wait for problems to occur before solutions are sought to address them. People do not see why open defecation is bad to the environment and its inhabitants. Effects of open defecation on the environment sampled from the respondents have been presented on Table 14.

Table 18: *Threats Posed by Open Air Defecation as Thought by Respondents*

| Opinion | Frequency | Percentage |
|---|------------|--------------|
| It makes the environment prone to disease vectors and pathogens | 179 | 46.3 |
| It makes the environment dirty | 118 | 30.5 |
| It does not speak well of the community | 74 | 19.1 |
| It makes the environment stink | 7 | 1.8 |
| Others | 9 | 2.4 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

A substantial proportion of the respondents (46.3%) had identified disease vectors and pathogen which came as a result of open defecation. Diseases are easily transmitted from the ground into food chains, river bodies and others which end up in the human systems due to open defecation.

Some respondents (19.1%) were of the view that it does not speak well of the community. People visiting a particular community or town the first time may have either a positive or negative mental picture of the place depending on how they see the environment. Cape Coast Metropolis is a tourist attraction town. A lot of people around the globe visit the town and some of the sampled communities. Open defecation could make visitors tag the community as untidy and stinky and it will even cast a slur on the people who dwell in these communities.

Reasons for which people threw rubbish into gutters or near river bodies was sampled from respondents and presented in Table 19.

Table 19: *Why People Throw Rubbish into Gutters or Near River Bodies*

| Reason for littering | Frequency | Percentage |
|--|-----------|------------|
| Bad attitude | 75 | 19.4 |
| Lack of radio/ TV education on the effects of poor rubbish | 61 | 15.8 |
| Absence of by-laws | 59 | 15.2 |
| Irregular collection of waste by commercial waste collectors | 52 | 13.4 |
| Children sent to throw rubbish away | 32 | 8.3 |
| Inadequate collection by commercial waste collectors | 22 | 5.7 |
| Lack of/inadequate refuse containers | 21 | 5.4 |
| Cannot afford waste collection fee | 17 | 4.4 |
| Ignorance | 10 | 2.6 |
| Dump site far from homes | 6 | 1.6 |
| Intentional | 6 | 1.6 |
| Laziness | 4 | 1.0 |
| Others | 22 | 5.7 |
| Total | 387 | 100 |

Source: Field data, 2011.

In Table 19, the respondents gave about 12 reasons why people would dispose rubbish indiscriminately in their communities. Bad attitude (19.4%) was one of the major reasons. Irregular and inadequate collection of waste by authorities was also cited as reasons. No matter the circumstance or motive, bad attitude cannot be justified in any way. People at times have to be forced

to do what is right in society. Law enforcement agencies such as the police are to protect and enforce the laws. The simple thing to do is for CCMA to enforce the bye-law on refuse dumping. If there is no such law on indiscriminate disposal of rubbish into open spaces and rivers then one has to be enacted and communicated to the citizens in the Metropolis. It is obvious from the information given that some people would just not care about their surroundings and therefore would not do anything to protect it from being destroyed through human activities.

The researcher also sought to know the underlying factors of open defecation among the respondents. Table 20 presents their responses.

Table 20: *Factors Contributing to Open Defecation*

| Factors | Frequency | Percentage |
|---|-----------|------------|
| People not used to modern toilet facilities | 78 | 20.16 |
| Toilet facilities not neat | 72 | 18.60 |
| Cannot afford fee for use of toilet | 43 | 11.11 |
| Lack of/inadequate public toilet facilities | 39 | 10.08 |
| Public toilet at a fee | 39 | 10.08 |
| Bad attitude/laziness/indiscipline | 36 | 9.30 |
| Lack of radio and TV education | 25 | 6.46 |
| Lack of toilets at homes | 25 | 6.46 |
| Private toilet at a fee | 25 | 6.46 |
| Others | 5 | 1.29 |
| Total | 387 | 100.00 |

Source: Field data, 2011.

From Table 20, the sampled respondents gave varied reasons why people used open gutters or beaches as places of convenience in the community. Modern toilet facility usage was identified as one of the major (20.16%) reasons why people would defecate in open places followed by toilet facilities not being neat (18.6%). Some interesting reasons specified as others were that toilet attendants would want to charge extra fees for children's faecal product in chamber pots in addition to that of the mothers at every visit to the facility. The beaches were considered to more airy as compared to well-built toilet facilities. Money to pay for toilet facilities (6.46%) and other reasons forced people to pollute the environment. Though, these reasons were not excuses to do wrong, these were the conception of some of the sampled respondents.

Socio-economic Effects of Littering and Sanctions

Socio-economic effects cannot be de-linked from human interaction with the environment. The study sought to find out if respondents were aware of the relationship between their socio-economic life and interaction with the environment. A question was posed to them with possible answers to choose from. The opinion of respondents on effect of plastic bags, domestic solid waste and open defecation on the socio-economic situation of CCMA or government is shown in Table 21.

Table 21: *Effects of Littering on Socio-economic Situation of CCMA*

| Category | Frequency | Percentage |
|---|-----------|------------|
| Effects on government/CCMA | | |
| It affects tourism | 154 | 39.8 |
| Government/Metropolitan Assembly spends money on treatment of environmental health related diseases | 98 | 25.3 |
| Metropolitan Assembly spends money on cleaning litter. | 96 | 24.8 |
| Government/Metro spends more money to settle flood victims/repair damaged infrastructure | 18 | 4.7 |
| Unemployment (dirty environment scares investors) | 11 | 2.8 |
| No idea | 10 | 2.6 |
| Total | 387 | 100.0 |
| Sanctions | | |
| Arrested and fined | 240 | 62.0 |
| Given education | 91 | 23.5 |
| Arrested and cautioned verbally | 19 | 4.9 |
| Arrested and shamed | 16 | 4.1 |
| Others | 21 | 5.5 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

The effect on tourism received a highest response of 39.8 percent. It is clear that the sampled respondents knew the negative effects that could come

as a result of littering with plastics bags, domestic solid wastes and open defecation on tourism and its related financial burden on the Assembly. The environmental mess created would have to be cleared using logistics and human resource. That is, money and time. Environmental health issues that sometimes come as epidemics such as cholera would have to be dealt with swiftly as an emergency outside of government budget. Money that could have been invested into job creation or developing infrastructure has to be invested in cleaning the surroundings.

Tourism, which brings income to the community and the country is affected. In effect, the socio-economic effects given by the respondents are interlinked to result into poverty. Though some might argue that littering creates job for some unemployed community members, the issue is that, it is an enemy of environmental protection and sustainable development. It is clear from these responses that the respondents in these communities were much aware of socio-economic consequences of littering the environment and for that matter, confirming that there was a relationship between environment, development and poverty (Tutu, 1996).

Sanctions are to check those who do wrong in society. The constitution of Ghana recognises punishment as good to correct and deter people from doing the wrong thing. From the sanctions listed for respondents to make a choice, majority (62.0%) of them preferred arrest and fine as the best which CCMA could use to deter people who throw plastics and solid wastes anyhow and defecate in the open. This would serve as a good deterrent to others in the communities

Environmental Sanitation Practices of Respondents

An environmentally conscious person would possess a body of knowledge of specific environmental problems or issues that will awake him or her to act appropriately in concrete situations in demonstration of a desirable way of relating to those problems that crystallises into positive attitudes towards the environment (Kwansah-Aidoo, 2004). In a bid to find out how environmental information had affected the environmental practices of respondents, the researcher posed a few questions to the respondents with respect to how they disposed plastics, domestic solid waste and human excreta the week preceding the survey and Table 22 presents the results.

Table 22: *Disposal of Plastic Wastes the Week before Survey*

| Category | Means of disposal | No. | % |
|-------------------------|--|-----|-------|
| Sachet water | | | |
| (pure water)/ | Drop it on the ground/bushes | 122 | 31.5 |
| Fan Ice/ Yoghurt | | | |
| | Drop it in a dust bin nearby | 107 | 27.6 |
| | Keep it in my bag/pocket/car till get home | 106 | 27.4 |
| | Give it to seller | 35 | 9.0 |
| | Not applicable | 9 | 2.4 |
| | Others | 8 | 2.1 |
| | Total | 387 | 100.0 |
| Take-away rubber | | | |
| | Drop it in a dust bin nearby | 249 | 64.3 |
| | Keep it in my bag/pocket/car till I | 59 | 15.2 |

| get home | | | |
|----------|------------------------------|-----|-------|
| | Drop it on the ground/bushes | 59 | 15.2 |
| | Not applicable | 11 | 2.9 |
| | Give it to seller | 3 | 0.8 |
| | Others | 6 | 1.6 |
| Total | | 387 | 100.0 |

Source: Field data, 2011.

Manufacturing companies these days find it easier and convenient to package their foods in plastics; Fan ice and yoghurt are some of the foods being packaged in plastics. The disturbing issue is that most of the wastes from plastic packaged foods were dropped on the ground. For example majority (31.5%) of the sampled respondents dropped their water, fan ice and yoghurt wastes sachet on the floor after drinking. All these plastic wastes find their way into gutters, open fields and into rivers or oceans. This comes back as problems to the immediate surroundings of the sampled communities and the entire Central Region of Ghana. A very few (9.0%) of the respondents however gave the plastics back to the sellers after consuming the content.

How the sampled respondents disposed their rubbish in a week has been presented in Table 23.

Table 23: *Disposal of Rubbish the Week before the Survey*

| Response | Frequency | Percentage |
|---|-----------|------------|
| Put it a container for a fee | 310 | 80.1 |
| Burn it | 37 | 9.6 |
| Throws it at dunghill | 11 | 2.8 |
| Throw it into any bush/ any water body nearby | 8 | 2.0 |

Table 23: *Cont'd*

| | | |
|-----------------------------|-----|-----|
| Put in a waste bin for free | 7 | 1.8 |
| Bury it | 5 | 1.3 |
| Others | 9 | 2.3 |
| Total | 387 | 100 |

Source: Field data, 2011.

Solid waste disposal is one of the issues that society has to deal with. The challenge confronting the entire world now is improper disposal of plastic waste on land and sea (Grant, 2009). So far as human beings live, waste generation cannot be avoided, but how best to dispose waste without degrading or polluting the environment is the issue. The responses from Table 23 show that majority (80.1%) put their domestic solid waste in containers for a fee. This is encouraging. A few respondents (2.0%) threw it into bushes and nearby water bodies.

Shelter and places of convenience (toilet facilities) are basic amenities that human beings cannot do without yet there are communities where toilet facilities do not exist in houses. Therefore, the study wanted to find out the situation among the respondents. Table 24 presents the details of their responses.

Table 24: *Open Air Defecation*

| Characteristics | Frequency | Percentage |
|--|-----------|------------|
| Do you have toilet in your house? | | |
| Yes | 223 | 57.62 |
| No | 164 | 42.38 |
| If no, please where do you use as a place of convenience? | | |
| Not applicable | 223 | 57.62 |
| Public toilet at a fee | 108 | 27.91 |
| In the bush or beaches | 45 | 11.6 |
| Private toilet without a fee | 8 | 2.1 |
| Private toilet at a fee | 3 | 0.8 |
| Total | 387 | 100.0 |
| If answer in question 56 is A or B, how much does it cost you per visit | | |
| GHC5.00/month | 1 | 0.3 |
| 30 pesewas daily | 1 | 0.3 |
| 20 pesewas | 3 | 0.8 |
| 10 pesewas | 68 | 17.6 |
| 5 pesewas | 63 | 16.2 |
| It cost a lot | 1 | 0.3 |
| Not applicable | 243 | 62.8 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

The results indicated that 57.62 percent of the respondents had toilet facilities in their homes, while the remaining 42.38 percent did not have. From Table 24, it is clear that about 37.0 percent of the respondents in the studied communities paid monies ranging from five Pesewas to five Cedis to use public toilet facilities per day. This implies that they did not have toilets in their houses. It, therefore, suggests that if there was no money, then the person would have to find an alternative by defecating in the open environment. Responses from the sampled respondents on how much they paid to use public toilets also showed that on the average a patron of the facility paid 20 Pesewas per visit. Based on the analysis of tables 23-24, it is obvious that the respondents are aware of good environmental sanitation practices to some extent despite the positive environmental knowledge based shown by table 15.

Strategies Mass Media can use to Promote Environmental Information

Besides the content analysis and interviews to examine strategies used by the media to raise the environmental consciousness of its listeners and viewers, I asked the respondents of the survey to indicate their expectations of the media with respect to what they should do to promote environmental information. The responses are presented in Table 25.

Table 25: *How Media can Promote Environmental Sanitation*

| Category | Frequency | Percentage |
|---|-----------|------------|
| Inform/educate the public in local languages by specialist. | 205 | 53.0 |
| Daily jingles on environmental sanitation issues. | 54 | 14.0 |
| Broadcast environmental sanitation | 28 | 7.2 |

Table 25: *Continued*

| issues during major news broadcast | | |
|--|-----|-------|
| Use drama and documentaries to educate the public | 20 | 5.2 |
| Educate and raise funds to support environmental sanitation | 17 | 4.4 |
| Institute award schemes to honour best environmentally clean | 13 | 3.4 |
| Do environmental sanitation programmes where people can phone | 7 | 1.8 |
| Broadcast more sanitation programmes and stop politics | 7 | 1.8 |
| Culprits should be shown on TV | 4 | 1.0 |
| Organise clean up campaigns in communities | 2 | 0.5 |
| No idea | 2 | 0.5 |
| Radio/TV stations should see it as a social responsibility to educate the public | 1 | 0.3 |
| Not applicable | 27 | 7.0 |
| Total | 387 | 100.0 |

Source: Field data, 2011.

From Table 25, respondents gave varied suggestions on what they thought the media could do to promote environmental sanitation. The major response (53.0%) was that the media should inform or educate the public in local languages by specialist. A few others were that the media should use

environmental sanitation jingles daily, interlace major news bulletins with environmental sanitation information and stop too much political talk. There are views that if the media in Ghana could give at least 5 percent of daily news coverage to the environment, the sanitation problem of the country will be solved in no time. The Broadcasting Corporation of Oyo State (BCOS), Ibadan, for instance, was said to produce some one minute jingles on various environmental issues including refuse dumping in gutters as was an intervention to educate society on environmental sanitation (Ogunleye, 2002). Continuous education by the media is therefore crucial.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter summarises the findings of this study, conclusions based on the study and makes recommendations. The purpose of this study was to examine the influence of environmental communication on the environmental consciousness of urban community dwellers in the Cape Coast Metropolis. Six communities were used in the study. Descriptive and ‘Acapulco Typology’ research design were employed in this study. Questionnaire, interview schedule and content analysis guide were the main tools used to collect data for the study. The questionnaires were administered to 387 community residents in the study areas. The respondents were systematically drawn from Amanful/ Regional Administration, Kotokuraba/ Tantri, Pedu/ Abura, Cape Coast Central, UCC/OLA and Adisadel in the Cape Coast Metropolis.

The Agenda-Setting Theory of the mass media and the adapted model of environmental consciousness and socio-economic development were found to be appropriate for this study. The SPSS was used to analyse the data collected using the appropriate statistical tools. Frequencies and percentages were used to analyse the biographical data and the three research questions.

Summary of Key Findings

Using the research questions as the focus of this study, the following were the findings:

1. TV3 in terms of contents or topics covered environmental sanitation information, which gave more attention to issues that had to do with financial and human resource investment in sanitation.

2. TV stations, especially TV3 run varied programs to create and draw attention of respondents to environmental cleanliness in the six communities.
3. FM radio stations by virtue of their designed or dedicated talk shows which were mostly of mixed-topics by nature, seemed to be giving environmental information tit bits during broadcasts.
4. TV3 used both events and issues oriented types of reporting to package environmental information for the public.
5. TV3 generated most of the environmental sanitation information by itself through its environmental sanitation desks.
6. Interpretation of technical environmental issues was a major challenge for TV3 and Metro TV.
7. Information disseminated by the mass media, FM radio and TV stations influenced how the community dwellers behaved to some extent with respect to littering the environment in the Cape Coast Metropolis.

Conclusions

The mass media, especially the private-owned ones determined their ways of sensitising the public on the environment. Elsewhere some media houses do not even have any allocation/slot for such vital public education programme. It is, however, re-assuring that TV3 spent fairly adequate time for reporting on investment in sanitation, general sanitation, domestic solid wastes, plastic bags, and open air defecation. These programmes are mainly considered to be their corporate social responsibilities within the catchment area.

The different strategies used by the various media houses could help disseminate environmental and sanitation information effectively. FM and TV stations using local dialects, tit-bits on mixed programmes, interactive phone-in segments, usage of social media platforms and short codes and creation of environmental desks in some cases were useful means of educating and receiving feedback from both listeners and viewers. This is because different segments of the residents within the metropolis have different ways of obtaining educative information via the mass media.

Despite the environmental sanitation campaigns waged by the mass media, there is more to be done as the level of environmental consciousness still remained low (36.7%) among the respondents. Until and unless the Assembly took up environmental education matters seriously, its efforts would not yield the expected results.

Recommendations

The following recommendations have been made based on the findings.

1. Environmental Protection Agency as well as the Cape Coast Metropolitan Assembly should collaborate with mass media to roll out ‘issue’-oriented environmental news such as documentaries, jingles drama to educate the public.
2. The Ministry of Local Government and Rural Development should engage the media to come out with ‘issue’ oriented environmental news to complement the ‘event-oriented’ news that the media disseminate during the monthly National Sanitation days for public education and participation.

3. The Assembly should regularly organise interaction with the media on their sanitation strategies for onward transmission to the general public.
4. By-laws on environmental sanitation should be enforced by the Metropolitan Assembly.
5. Ministry of Health should collaborate with the media to educate the citizenry on environmental cleanliness.
6. Environmental journalism should be made part of the curricular for institutions that train journalists.
7. The Cape Coast Metropolitan Assembly should consider sponsoring and paying for air time for environmental education programmes.
8. Environmental information could be integrated with Religious programmes since most listeners of FM stations patronised these segments.

Suggested Areas for Further Studies

This study limits its scope to mass media use to radio and Television (TV) that operate locally in Cape Coast Metropolis or send broadcast signals from the nation's capital, Accra. It is, therefore, suggested that a study should be conducted in other districts, municipalities and metropolis in the region (Central Region) to see the general picture of people's environmental consciousness.

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APPENDICES

APPENDIX A

HOUSEHOLD QUESTIONNAIRE

A Study on the Influence of Mass Media on the Environmental

Consciousness of Urban Dwellers in the Cape Coast Metropolis

Dear Sir/ Madam,

This is a study on the “Influence of Mass Media on the Environmental Consciousness of Urban Community Dwellers in the Cape Coast Metropolis.” It is in partial fulfilment of the requirements for the award of Master of Philosophy Degree in Development Studies from UCC. You have been randomly selected to participate in this survey which will take approximately 30 minutes. The study is mainly for academic purposes and I wish to assure you that all your responses will be treated with utmost confidentiality. The questionnaire seeks to elicit your views on environmental sanitation with plastic waste, domestic solid waste and open air defecation.

Please do you agree to participate? Yes [] No []

***Instruction to the one filling the questionnaire:** Tick [✓] where appropriate and provide answers to the questions, please. If you do not understand any of the questions, please tell me and I will explain it again.*

NAME OF INTERVIEWER:

DATE OF INTERVIEW:

URBAN AREA:

SECTION A: DEMOGRAPHIC DATA

1. Sex:
 - A. Male []
 - B. Female []
2. Please indicate your age at your last birthday (in years).....
3. What is your marital status?
 - A. Single []
 - B. Never married []
 - C. Married []
 - D. Divorced []
 - E. Separated []
 - F. Widow []
 - G. Others.....
4. What is your educational background?
 - A. No formal education []
 - B. Primary school []
 - C. JSS/Middle school []
 - D. SHS/Vocational []
 - E. Tertiary []
5. What is your major occupation?
 - A. Professional (specify)

- B. Trader
- C. Artisan
- D. Unemployed
- E. Student
- F. Fisherman/Fishmonger/farmer
- G. Others (specify).....

6. What is your ethnic background?

- A. Akan
- B. Ewe
- C. Ga/Adangbe
- D. Others (specify)

7. Please for how long (in years) have you lived in this community?

SECTION B: MEDIA PATRONAGE AND KNOWLEDGE

ACQUISITION

8. Which of the following FM radio stations do you **mostly** listen to?

- A. ATL FM [] B. Yes FM [] C. Radio Central []
- D. Ahomka FM [] E. Eagle FM [] F. Sompa FM []

9. Which of the following local/ nationwide TV stations do you **mostly** watch?

- A. GTV []
- B. Metro TV []
- C. TV3 []
- D. TV Africa []
- E. Coastal TV []

10. Do you have a functioning Radio or TV set of your own?

| | Radio | TV |
|--------|-------|-----|
| A. Yes | [] | [] |
| B. No | [] | [] |

11. If NO, how do you have access to a Radio or TV to listen to or watch?
(Tick only one).

| | Radio | TV |
|-------------------------------------|-------|-----|
| A. From neighbours in my house | [] | [] |
| B. From neighbours outside my house | [] | [] |
| C. Others (specify)..... | [] | [] |

12. How often do you listen to or watch your favourite Radio or TV channels?

| | Radio | TV |
|---------------------|-------|-----|
| A. Daily | [] | [] |
| B. Weekly | [] | [] |
| C. Monthly | [] | [] |
| D. Occasionally | [] | [] |
| E. Others (specify) | [] | [] |

13. Why do you listen to this particular station/channel the most?

| | Radio | TV |
|--|-------|-----|
| A. Gives a lot of News | [] | [] |
| B. Has educative programmes | [] | [] |
| C. Plays a lot of music | [] | [] |
| D. Gives opportunity for phone-in | [] | [] |
| E. Has articulate presenters | | |
| F. Broadcast a lot of religious programmes | [] | [] |
| G. Others (specify)..... | [] | [] |

14a. Do you listen to News on Radio?

- A. Yes
- B. No

14b. Do you watch TV News?

- A. Yes
- B. No

15. Which of the following issues appeal to you most when listening to your favourite radio/ TVV station?

| | Radio | TV |
|--|-------|-----|
| A. Environmental issues | [] | [] |
| B. Health issues | [] | [] |
| C. Social issues (Religious/Entertainment) | [] | [] |
| D. Political issues | [] | [] |
| E. Economic issues | [] | [] |
| F. Others (specify) | [] | [] |

16a. Do you know of any specific environmental sanitation programme on your favourite radio/ TV station?

- A. Yes
- B. No(if no skip to Question 18)

16b. If Yes, what programme is it?.....

17. In what language (s) does your favourite radio/TV mostly broadcast?(

Skip to Ques. 19 after answering this question)

- A. Fante/Akan
- B. English

18. Apart from news does your favourite Radio/ TV station broadcast environmental sanitation programmes?
- A. YES
 - B. NO
19. Do you think you derive any benefit (s) from listening/ watching environmental sanitation programmes on your favourite radio/ TV station?
- A. YES
 - B. No
20. If “Yes,” what benefit(s) do you derive from listening to your favourite Radio/ TV channel?
-
21. Which of the following environmental sanitation issue was mostly discussed on your favourite radio/TV stations in the last week preceding this exercise? (Choose only one)
- A. Plastic/ rubber issues
 - B. Domestic waste disposal
 - C. Open defecation (gutters/beaches/bushes)
 - D. None
 - E. Others (specify)
22. In your opinion, do you have any specific environmental sanitation issues in your community?
- A. Yes
 - B. No
24. If “Yes,” which of these is of most concern to you? (*Tick only one*).
- A. Plastic bag issues

- B. Domestic waste disposal
- C. Open air defecation
- D. Others (specify).....

25. For how many years has this been a problem for you in this community?

26. Have you ever heard your favourite radio/TV station broadcast any programme on these specific issues of concern in your community or other communities in Cape Coast?

| | Radio | TV |
|--------|-------|-----|
| A. Yes | [] | [] |
| B. No | [] | [] |

27. If yes, was there provision made for phone-in?

- A. Yes
- B. No

28. If YES, did you phone-in?

- A. Yes
- B. No

28. If YES, what was your contribution?

29. If No, why?

30. Apart from the media, which of these places do you get information on environmental sanitation issues?

- A. Religious groups/ Associations
- B. Social groups/ Associations
- C. Metropolitan Assembly
- D. Assemblyman/woman

E. Others (specify).....

SECTION C: ENVIRONMENTAL CONSCIOUSNESS AND PRACTICE

| Statements | SA | A | U | D | SD |
|---|----|---|---|---|----|
| 31. The environment is everybody's property and therefore anybody can do what he/she likes with it | | | | | |
| 32. The environment needs to be kept well for future generation | | | | | |
| 33. Littering the environment with waste plastic bags e.g. pure water sachet, fan ice, yoghurt and take-away rubber has increased | | | | | |
| 34. Openly defecating into gutters, at beaches and in bushes has increased | | | | | |
| 35. Throwing of domestic rubbish into gutters and streams has increased | | | | | |

Please indicate your view/ acceptance of the following statements

36. How do you see your immediate surrounding as far as environmental sanitation is concerned?.....

38. How do you compare the environmental sanitation consciousness and practice of people now to two years ago?

A. It has fallen (*Go to next question*)

B. It has increased (Please explain).....

C. It has not changed

39. Do you know the cause of the fall in environmental sanitation consciousness and practice?
- A. Yes B. No
40. If yes, which of the following do you think is the MAIN factor responsible for the fall in environmental consciousness and practice? (*Tick only one*).
- A. Lack of radio/TV education on environmental sanitation
- B. Absence of dust bins at vantage points
- C. Bad attitude
- D. Absence of by-laws
- E. Others (specify).....

SECTION D: PLASTIC BAGS AND ENVIRONMENTAL BEHAVIOUR

41. Which of these do you use or come into contact with when you are out of home? (Select more than one if applicable).
- A. Pure water
- B. Fan ice
- C. Yoghurt
- D. Take-away rubber
- E. All the above
42. Please provide the following information about your behaviour towards disposal of plastic waste during the last week preceding this exercise.

| Plastic waste | Behaviour | | | | |
|---------------|-------------------|-------------------------------|---------------------|-------------------|------------------|
| | Keep it in my bag | Drop it on the ground/ bushes | Drop it in dust bin | Give it to seller | Others (specify) |
| Pure water | | | | | |

| | | | | | |
|-----------|--|--|--|--|--|
| Fan ice | | | | | |
| Yoghurt | | | | | |
| Take-away | | | | | |

43. In your opinion, which of the following is the most threat posed by plastic waste bags

- Blocks drainage system []
- Pollutes the environment []
- Contributes to flooding []
- Affects the beauty of the environment []

44. Do you think plastic waste affect farming activities?

- Yes []
- No []

45. If YES, how does it affect farming?

- A. It does not decompose easily
- B. It makes weeding difficult
- C. Animals die when they chew/swallow plastic waste
- D. Others (specify).....

46. Do you think plastic waste affect fishing activities?

- Yes []
- No []

47. If YES, how does it affect fishing?

- A. Fishermen catch plastic waste for fish when they go fishing
- B. It pollutes water bodies
- C. Others (specify).....

48. How does plastic waste affect the beauty of the environment?

.....

SECTION E: DOMESTIC SOLID WASTE DISPOSAL

49. In the last week preceding this exercise, how did you dispose of rubbish/garbage at home? (*Tick only one*).
- A. Bury it
 - B. Burn it
 - C. Put it in container for a fee
 - D. Throw it into any bush nearby
 - E. Throw it into any water body nearby
 - F. Others (specify).....
50. Are you aware of any rubbish or garbage being dumped into/near gutters or water bodies in your community?
- A. Yes
 - B. No
51. In your opinion, why do you think people throw rubbish about?
- A. Cannot afford waste collection fee
 - B. Lack of radio/TV education on the effects of poor rubbish disposal practices
 - C. Absence of by-law
 - D. Irregular collection of waste by commercial waste collectors
 - E. Inadequate collection by commercial waste collectors
 - F. Others (specify).....
52. Do you think littering with rubbish affects the environment?

- A. Yes
- B. No
- C. No idea

53. If YES, how does it affect the environment? *(You may tick more than one).*

- A. It choked gutters and contributes to flooding
- B. It attracts pests and rodents
- C. It breeds mosquitoes
- D. Others

(specify).....

54a. Does littering with rubbish give any environmental health problem (s)?

- A. Yes
- B. No

54b. If yes, what are some of the environmental health problem (s) associated with littering with domestic solid waste?.....

**SECTION F: OPEN AIR DEFECATION INTO GUTTERS AND
AROUND BEACHES**

56. Please do you have toilet in your house?

- A. Yes
- B. No

57. If NO, please where do you use as place of convenience?

- A. Public toilet at fee
- B. Private toilet at fee
- C. Private toilet without fee
- D. In the bush or beaches
- E. Others (specify)

58. If answer in question 51 is A or B, how much does it cost you each visit to use the toilet facility?
59. In your opinion, which of the following best explains why people defecate openly around the beaches, gutters and water bodies?
- A. Cannot afford fee for use of toilet []
 - B. Cannot afford fee for use of toilet []
 - C. People not used to modern toilet facilities []
 - D. Lack of radio and TV education []
 - E. Lack of public toilet facility []
 - F. Toilet facilities not neat []
 - G. Others (specify)
60. Does defecating openly into gutters, around beaches and bushes have any effect on the environment?
- A. Yes
 - B. No
61. If yes, how does it affect the environment most?
- A. It makes the environment prone to disease vectors and pathogens
 - B. It makes the environment dirty.
 - C. It does not speak well of the community
 - D. Others (specify).....
62. Does defecating openly into gutters, around beaches and bushes cause any environmental health problem (s)?
- A. Yes
 - B. No

63. If Yes, what environmental health problem (s) does open defecation cause?
- A. Cholera
 - B. Typhoid fever
 - C. Diarrhoea
 - D. Don't know
64. In your opinion, which of these best explains the effect of plastic waste/ domestic solid waste and open defecation to the Cape Coast Metropolis?
- A. They affect tourism
 - B. Metropolitan Assembly spends money on cleaning litter
 - C. Government/Metropolitan spend more money on treatment of environmental health related diseases
 - D. Government/Metropolitan Assembly spend more money to settle flood victims and rehabilitation of damaged infrastructure
 - E. Employment (Dirty environment will scare investors)
 - F. Others (specify).....
65. In your opinion, what should be done to people who litter with plastic/rubber, domestic solid waste and defecate in the open? (*Choose only one answer*).
- A. Arrested and fined
 - B. Nothing
 - C. Given education
 - D. Arrested and shamed
 - E. Arrest and cautioned verbally
 - F. Others (specify).....

**SECTION G: GOVERNMENTAL POLICIES ON ENVIRONMENTAL
SANITATION**

66. Do you know of any Governmental/ Metropolitan Assembly policy (ies)
on environmental sanitation?

A. Yes

B. No

What is the policy about?

67. How did you get to know about this policy?

A. Through radio and TV

B. Assemblyman/ woman

C. Religious group/Association

D. Social group/Association

E. Others (specify)

68. Do you think Radio and TV stations can do something to promote
environmental sanitation?

A. Yes

B. No

69. If Yes, what in your opinion, do you think Radio and TV stations can do
promote environmental sanitation in the
communities?.....

70. Do you think Metropolitan Assembly can do something to promote
environmental sanitation information through Radio and TV?

A. YES

B. No

71. If Yes, what in your opinion, do you think Metropolitan Assembly can do to promote environmental sanitation information through radio and TV?

.....

73. Do you think community members have a role to play in keeping their communities clean?

A. Yes

B. No

72. In your opinion, what do you think communities can do to improve environmental sanitation in the communities?.....

.....

.....

Thank You for Your Time!!!

APPENDIX B

INTERVIEW GUIDE FOR NEWS EDITORS OF TV

1. How often does your station report on environmental sanitation issues in Cape Coast metropolis? (e.g., plastic waste, rubbish/ garbage, open air defecation).
2. I believe you report on other social issues such as politics, religion and entertainment. In terms of percentage broadcast, what percentage will you give to environmental sanitation broadcast by your station?
3. Apart from straight news report where you cover events, what other strategy(ies) do you employ to give report on environmental sanitation?
4. Do you have an environmental sanitation desk?
5. Do you have a reporter specifically assigned to environmental issues?
6. Do you have a way of finding out whether listeners/viewers listen to/view your programmes?
7. What challenges do you face when reporting environmental sanitation related issues?
8. What advice/ suggestion do you have for the general public on their attitude towards plastic waste littering and domestic solid waste disposal?
9. What advice do you have for the government/ metropolitan assembly to promote mass media education on environmental sanitation?

Thank You

APPENDIX C

CONTENT ANALYSIS CODING SCHEME FOR TV

Name of TV Station.....Date of Broadcast.....

Time of BroadcastPrime/non-prime (prominence given to environmental information)

| Types of Environmental Information | Contents/Topic | Strategies or mode of generation | Frequency of broadcast | Length of broadcast sec/min/hour | Phone-in | Direction positive/negative | Assessment of report |
|------------------------------------|----------------|----------------------------------|------------------------|----------------------------------|----------|-----------------------------|----------------------|
| Event/Issue | | | | | | | |

Keys

| Types of environmental | Contents/Topic | Strategies or mode of generation | Direction of Broadcast | Assessment of Broadcast |
|------------------------|--|----------------------------------|---|---|
| E – Event I – Issue | PB – Plastic Bags DW – Domestic wastes OAD – Open air defecation SI – Sanitation investments O – Others not classified | R- Routed E - Enterprised | P – Positive N – Negative NT- Neutral | C – Causes E – Effects M – Mitigation O – Others |

APPENDIX D

PLATES



Plate 1: Plastic usage and disposal in Cape Coast Metropolis

Source: Field data, 2014.



Plate 2: Polluted Fosu lagoon

Source: Field data, 2014.