Dissertation

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UNIVERSITY OF GHANA

COMMUNITY ATTITUDES TOWARDS SOLID WASTE MANAGEMENT IN MADINA, ACCRA

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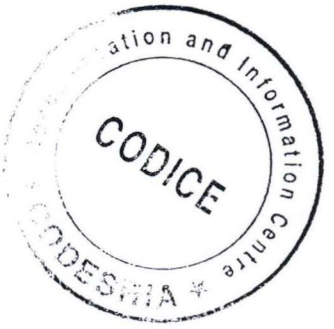

BY

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF M.PHIL SOCIOLOGY DEGREE.

AUGUST, 2008

DECLARATION

I, Mary Sefa Boampong, do hereby declare that except references to other people's work which have been duly acknowledged, this work is the result of my own field investigation conducted under the supervision of Professor Kodjo Senah and Dr Dan-Bright Dzorbo of the Department of Sociology. I also declare that as far as I am aware, this thesis has neither been presented in whole or part for another degree elsewhere.

…… ……

Professor. K. Senah Mary Sefa Boampong

(Supervisor) (Student)

……..

Dan-Bright Dzorgbo

(Supervisor)

DEDICATION

This work is dedicated to my husband Mr. Albert Sefa Boampong and my children.

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The accomplishment of a task of this nature is possible only through the guidance and support of God Almighty and certain individuals. I, therefore, acknowledge with thanks the protection, strength, and wisdom from God Almighty which have facilitated the successful completion of this work.

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ABSTRACT

Managing waste in general and solid waste in particular, has attracted worldwide attention. This is due to the recognition that, a clean environment is a prerequisite for a healthy living. People's attitude towards waste disposal has been identified as a crucial element in relations to successful implementation to any waste management policy.

It is against this background that this study examines community attitude towards solid waste management in Madina, a suburb of Accra. Employing qualitative methodology with in-depth interviews (using a semi-structure questionnaire) and observation as the specific data gathering techniques, this study investigates the challenges facing local public authorities in solid waste management as a result of people's attitude.

The major finding of study is that, generally, the attitude of residents within the Madina community towards solid waste management is negative. This is because, though, respondents know the harmful effects of solid waste, they emphasized that its management lies with the government and not the individuals. An analysis of the narratives of respondents in this study suggests that solid waste management is the responsibility of the Government and the District Assembly and not individual residents.

Based on these findings, this study has recommended that sensitization efforts on solid waste should focused more on attitudinal change of women and children because, primarily, they were found to be responsible for disposing waste.

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LIST OF ACRONYMS

AMA	… …	Accra Metropolitan Assembly.
CODESRIA	…	Council for the Development of Social Science Research in Africa.
DPCU	… …	District Planning Coordinating Unit.
EPA	… …	Environmental Protection Agency.
GESP	… …	Ghana's Environmental and Sanitation Policy.
GHC	… …	Ghana Cedi.
GPRS	… …	Ghana Poverty Reduction Strategy.
GWDA	…	Ga West District Assembly.
IPS	… …	Institute of Professional Studies.
IPT	… …	Intermittent Preventive Treatment.
ITNS	… …	Insecticides Treatment Net.
KVIP	… …	Kumasi Ventilated Improved Pit Latrine.
MDGs ...	…	Millennium Development Goals.
MLGRD	…	Ministry of Local Government and Rural Development.
MSW	… …	Municipal Solid Waste.
NGOS	… …	Non-governmental Organisations.
NHIS	… …	National Health Insurance Scheme.
OPD	… …	Out Patient Department.
PHC	… …	Public Health Care.

CHAPTER ONE

1.1 WASTE MANAGEMENT IN THE GLOBAL CONTEXT

The issue of waste management in general and solid waste in particular has been of great concern to individuals, groups, governments and the international community. According to Obirih-Opareh (2002), concern for solid waste management has increased in international circles, academic literature and policy practice since the 1990s. Two main reasons that account for this attention are; (a) concern for public health and (b) improper waste collection leading to filth and stench.

Globally, waste generation and its management are becoming a burden and this may be attributed to population growth, industrialization and urbanization, among others. For instance, in examining the generation and management of solid waste through the lenses of economics, Beede and Bloom (1995) estimated that the global burden of municipal solid waste amounted to 1.3 billion metric tons in 1990. In a similar vein, Lyon (2007) also estimated that the amount of municipal solid waste (MSW) generated worldwide in 2006 was 2.02 billion tons. In Lyon's view, there is a link between growth in wealth and increase in waste: the more affluent a society becomes the more waste it generates. In addition, as the less wealthy nations develop, they are also creating more wealth and adding to the world's waste.

Deductible from the above is the fact that quantities of solid waste are produced daily as a result of the production of goods and services and increase in the consumption of modern industrial goods due to changes in life style. For instance, within a period of a decade-

and-half, food wrapping and packaging have moved on from bio-degradables like leaves to paper, to thin-film plastics, and now to denser styro-foam and plastics. Similarly, drinking water vending has evolved from "bucket-and-cup", to thin-film plastics and now to more dense plastics to sachet and bottled 'mineral' water (Ghana's Environmental Sanitation Policy, 2007). Humankind being the center of these processes acts positively or negatively towards the waste produced in order to survive. Indiscriminate disposal of waste may have a telling effect on the environment and well being of the citizenry in general. The situation is worsened when these waste products are thrown into water bodies and thereby disturbing aquatic life and the general quality of water. In addition, if the waste is thrown on the streets and other public places, its health implications may be profound. As Baitie (2007:15) notes, " Many of our water bodies are so polluted with solid waste, plastic, chemicals and affluent that eventually Nature's cleansing system is unable to cope.''

Comparatively, management of solid waste appears to be effective in most advanced countries because of high technology (recycling) and other economic advantages. For instance, United States generated 251.3 million tons of municipal solid waste in 2006. Out of this, the country recovered through recycling and composting, 81.8 million tons. In addition, out of the 251.3 million tons of municipal solid waste (MSW), 31.4 million tons was used to generate energy. The rest of the municipal solid waste of 138.2 million tons was deposited in landfill (United States Environmental Protection Agency, 2006). Despite the large volume of solid waste generated, the US is able to manage these wastes to some extent to ensure environmental sanitation. Besides, most of the advanced

countries have sorting mechanisms where plastics, glasses, cans and decomposition materials are put into different categories for effective management. To facilitate this, Obirih-Opareh (2002) observed that in Europe and other high-income countries, waste bins or underground waste containers are provided at vantage points such as bus stops, train and metro stations and along the streets. This helps to reduce littering to the barest minimum and this is achieved through an active role played by members of various communities because citizens of these countries appear to be conscious of and abide by the laws of the land. Thus, community attitude towards solid waste management appears to be very critical.

In most developing countries (Ghana inclusive), the management of waste in general and solid waste in particular poses perhaps a major challenge to health. The problem has become more serious as a result of lack of funds, transport, technology, equipment and other infrastructure. Urbanization, rapid population growth and migration have been cited as some of the causes. Contreau (1982), for instance, has observed that lack of financial resources in developing countries renders municipal refuse administration vulnerable. In addition, she noted that even though between 20 and 40 percent of budget allocation is for collection and disposal services for municipal refuse, it is not perceived as deserving higher priority. Similarly, according to the World Bank group (2007), it is common for municipalities in developing countries to spend 20 to 50 percent of available recurrent budget on solid waste. Yet between 30 and 60 percent of all waste in developing countries is uncollected. Besides, 80 percent of the collection and transport equipment is out of service, in need of repair or maintenance and open dumping is the norm.

Studies undertaken and recent media reports indicate that solid management is problematic in Ghana and it appears community attitude towards it is part of the problem. Thus, Benneh et al. (1993) observed that solid waste disposal has become one of the more intractable environmental management problems. They further noted that despite recent upgrading, the Waste Management Department of Accra Metropolitan Assembly (AMA) is only capable of collecting some 60 percent of refuse generated. Recent media publications have further depicted in graphic terms piles of solid waste in some parts of Accra. The Waste Management Department of Accra Metropolitan Assembly (2008) estimates that with a population of about 4 million, Accra generates close to 2000 tons of solid waste daily. Out of this, only 1500 tons are collected. There is, therefore, an obvious sanitation problem in the Accra metropolis.

According to an officer[1] of the Waste Management Department of Accra Metropolitan Assembly (AMA), one of the critical challenges faced in the Accra Metropolis is the negative attitude of people towards waste disposal. As a result, political leaders, the mass media and the general public have raised concerns about the need for people to change their attitude towards waste management in Ghana. In some parts of Accra, it is common to see mountains of garbage close to human habitation. Consumer items including food are sold close to piles of solid waste as well as choked gutters producing unpleasant miasma. To compound the problem, traders of various items find their own means of disposing garbage indiscriminately without regard for the law on sanitation.

[1] The officer here refers to the Public Relations Officer of AMA at the time of the interview which was April 2008.

Waste management in Ghana was a challenge even before independence. Addae (1997) noted that before 1880, the towns along the coast of the Gold Coast (Ghana) were notorious for their unsanitary state. All had similar unhealthy features: they all contained lagoons which bred mosquitoes and gave off pungent disagreeable odour. No public or private latrine existed. Excreta and garbage were similarly deposited anywhere and everywhere. Besides, there was no organized collection of waste and garbage. Consequently, the colonial government took certain measures by propagating the knowledge of sanitation and hygiene. In spite of all these reforms the Africans, the huge majority who lived in the rural areas, remained totally ignorant of the linkage between the endemic diseases from which they suffered on one hand, and the unsanitary conditions under which they lived. After independence it appears successive governments have been battling with sanitation in Ghana

The global approach to health and development is increasingly influenced by the Millennium Development Goals (MDGs). There is increasing global consensus that countries such as Ghana need to scale up investments and activities towards achieving the MDGs. Achieving the MDGs require that countries look beyond the traditional health systems and address the broader determinants of ill-health. These determinants include low levels of education, poverty, unequal gender relations, high risk behaviours and unhealthy environment (National Health Policy, 2007).

Improper management of waste has profound impact on the health of the citizenry and the proper waste management systems are critical in achieving MDGs. In 1990, more

than 1.2 billion people – 28 per cent of the developing world's population – lived in extreme poverty (MDGs, 2006). Goal 1 which deals with extreme poverty eradication may be hard to achieve in some developing countries including Ghana where basic sanitation presents a challenge. Even if the extreme poverty reduction is achieved without proper waste management systems in place, people who are out of the extreme poverty may not live long to enjoy their emancipation from the poverty. For instance, illness and diseases associated with improper management of solid waste, (example Malaria), may inflict the people leading to death and incapacitation. It is estimated that 9 percent of all deaths or about 16,000 deaths per year are attributable to malaria (Senah, 1989). The Ghana Poverty Reduction Strategy which seeks to eradicate poverty appears not to be doing well in the area of waste management. The eradication of poverty should go hand in hand with healthy environment.

However, some people in Madina community have resorted to open defecation at the refuse dump. This behaviour may be attributed to inadequate toilet facilities in the community causing people to find their own means of easing themselves. The issue of open defecation in Ghana has become the order of the day in some communities. This has attracted the attention of some NGOs. For instance, Water and Sanitation Monitoring Platform in Ghana published an article on open defecation (Daily Graphic Page 41 August 14, 2008). Refer to the culled article at Appendix IV.

From the article, it is obvious that sanitation situation in the country presents a challenge. It is, therefore, not surprising that Ghana is still battling with most of the preventable

diseases such as malaria. For instance malaria is still the number one cause of mortality in children less than 5 years and the commonest cause of OPD attendance in the entire population. Refer to Appendix III for more information about Top 10 Causes of Outpatient National Morbidity.

Even though efficacious tools and technologies like Insecticides Treatment Net (ITNs) and Intermittent Preventive Treatment (IPT) in pregnancy and new funding sources are available it appears that largely the cause of malaria is due to improper management of waste. (The Ghana Health Sector Annual Programme of Work, 2004). This phenomenon is a shadow of what prevails in the study area. The environmental sustainability appears to present a challenge. The discharge of dangerous substances and indiscriminate disposal of waste on the environment for economic and domestic purposes may go a long way to affect public health and the environment at large. A safe and healthy environment including the quality of air, water and soil has major implication for the health of Ghanaians and for that matter Madina residents. (National Health Policy, 2007). In the same vein, Senah (1989) noted that without good drinking water, health education, clean environment, safe disposal of waste, among others, the desired impact of Primary Health Care (PHC), cannot be achieved.

In order to improve sanitation, the government, through the decentralization policy has mandated the district assemblies to be responsible for waste management.

In addition to the District Assemblies, a body known as Ghana Environmental Council was established to deal with all environmental issues in the country. This statutory council was later renamed Environmental Protection Agency (EPA).

Despite the efforts of EPA and the District Assemblies, waste management continues to present a challenge to most urban communities in Ghana. The situation has become so serious that it has attracted attention from high political circles. For instance, while performing the sod-cutting ceremony at the project site of Waste-to-Energy Programme in Kumasi on the 7th of May 2007, President Kufour (Former President of the Republic of Ghana) stressed the need for people to acquire a positive attitude towards waste generation. Also, based on an environmental report made by a team of government officials which toured Bangladesh and Ethiopia, the former Ashanti Regional Minister has challenged people to adopt a positive behaviour to enhance sound sanitation management. Addressing poor behaviour and attitude towards environmental sanitation is critical to achieving any meaningful progress (Ghana's Environmental and Sanitation Policy, 2007).

1.2 THE PROBLEM STATEMENT

At the community level, public attitude towards solid waste management is not encouraging. Generally it seems people's attitude to filth, especially in urban communities in Ghana presents a challenge and this poses a threat to the nation's development. A clean environment is a prerequisite for a healthy living. A country's waste management system is a critical indicator of its level of development. While

developed countries have devised very complex but effective systems to manage their waste, developing countries have still not come to grips with how to do this effectively (Obirih-Opareh 2002). Madina being one of the fast growing urban areas in Accra is no exception. This community is saddled with enormous waste management problems and this was observed during data collection. For instance, an early morning visits to some unapproved dumpsites portrayed a clear picture of how some residents relate to waste. It was surprising to observe how squatter settlers are very close to these sites. With no public toilet and bath room, occupants wake up early to ease themselves at the site and bath just close to the site. Besides, open defecation is the norm for both children and adults. Picture 1 on page 10 shows how some communities in Madina relate to waste.

Picture 1 Squatter settlement near a Dump Site

The above picture shows the development of slums at a dump site. This squatter settlement is sharing boarders with garbage producing stench to the environs. This unhygienic situation may no doubt lead to the spread of preventable diseases and environmental degradation.

Other problems observed include the spill over of toilet tanks and overflow of communal waste container; indiscriminate dumping of garbage and human excreta wrapped in polythene bags, littering on the street and choked drains and mismanagement of public

toilet, among others. In addition, most of the households use open containers and sacks for keeping solid waste even though most of the waste appear to have moisture content discharging liquid substances (leachet). According to an Environmental Health and Sanitation Officer, community attitude to waste is one of the critical challenges faced apart from logistics. The officer further intimated that indiscriminate dumping of waste in the community involves the poor, low income earners middle-income and the rich. He further remarked, “People remove their waste from their cars and dump in the bush”. Besides, people dump waste in drains, along the street, especially when it is raining. This portrays negative attitude in the community. This is a critical factor which needs to be addressed so as to ensure effective management of waste. Picture 2, on page 12 shows an aspect of waste management problems in Madina.

Storm Drain as Waste Receptor Madina (Picture 2)

From the picture above, it is evident that waste management is problematic in Madina. This unhygienic condition may no doubt have adverse effect on the health of the community. Although the district assembly is trying to control the situation it appears to be handicapped in terms of funds, technology and other factors. In an interview with the district waste management officer, he mentioned a lot of problems faced.

It is against this background that this study was conducted in Madina to examine community attitude towards waste management. Another reason for the choice of this area is the feasibility of accessing the area and the target population. In addition, my familiarity with the area as well as the local languages is another advantage in gathering a more reliable data within reasonable period of time. This study may serve as a source of

reference to the district assembly in solving waste management problems in Madina and the nation as a whole.

1.3 OBJECTIVE OF THE STUDY

Principally, this study intends to examine the attitudes of communities towards solid waste management in Madina in the Ga East District of Accra. In this connection, the study aims at exploring the following specific issues:

(i) The perceptions of Madina residents on solid waste management.

(ii) Mode of domestic management of solid waste in Madina.

(iii) The relationship between local authorities and the community in the management of solid waste in Madina.

(iv) The challenges faced by the Madina Urban Council and private operators in the management of solid waste.

(v) Community awareness of waste hazards.

(vi) Level of community awareness of waste management policies.

1.4 METHOD OF DATA COLLECTION

1.4.1 Introduction

This section discusses how the research was carried out, the research design and the method of data collection. It explains sources of data, how respondents were selected for the study, the type of instrument used, as well as the procedure of data collection. Finally, challenges and lessons learnt from the fieldwork are addressed.

1.4.2 Research Strategy

This study is basically descriptive, cross-sectional and exploratory. To realize the research objective of examining the attitude of community members towards solid waste management, qualitative methods of data collection was employed. In his *"Analytic Ethnograhy,"* Lofland (1996: 30) explains that qualitative research as an investigation tool that attempts to "provide generic prepositional answers to questions about social life and organizations….strives to present data and analysis that are true; seeks to provide data and/or analysis that are new; and present an analysis that develops in the senses of being conceptually elaborated, descriptively detailed, and concept-data interpreted."

This paradigm is most suitable in providing comprehensive understanding of the meaning people give to waste management. This study therefore relied on sources such as interviews, documents and field observation and the internet, among others. Qualitative method was used to find out the perception of respondents towards solid waste management. The case study approach was used in this study. This approach is suitable in making an empirical enquiry to investigate contemporary phenomenon in real life

context. It therefore provides a more holistic approach to the understanding of community attitude towards solid waste management in Madina. The availability of multiple sources of information that are interactive and humanistic makes the case study strategy appropriate for this study (Creswell 2003: 181).

1.4.3 The Unit of Analysis

According to Madina Urban Council, Madina, the study area, is officially stratified into six divisions (called strokes) for the purpose of waste management. Based on this stratification, the researcher employed purposive sampling method to select respondents from two strokes, namely, Madina Zongo and Madina Estate (Residential) Strokes. Kumekpor (1999) noted that in purposive sampling, it is more appropriate to identify units of the universe which satisfy the characteristics of the phenomenon under study. Hence, the Residential and Zongo Strokes were purposively chosen. The two 'Strokes' selected were used for generalization. The map at Appendix V shows the six divisions/stokes of Madina.

With regard to Zongo Stroke, a previous study made by Quarcoo et al. (1967) indicates that most of the residents are migrants from different parts of Ghana. In addition, they are mostly self-employed and have low or no education. Therefore, as far as solid waste management is concerned the Zongo Stroke may have a different attitude. On the other hand, the Residential Stroke also has some peculiar features. The residents are mainly middle or high income earners, fairly educated, are public sector workers and presumably should have a high level of environmental awareness as far as solid waste management is

concerned. Therefore, they may have a different attitude with regard to waste management. The selection of this stroke can also be connected to a study made by Benneh et al. (1993) which observed that 65% of all wealthy households stored their solid waste in closed containers. The use of closed containers suggests a better understanding of safe waste storage practices. Against this background the choice of the two stokes should enable the researcher to compare attitudes as far as waste management practices are concerned.

1.4.4 Target Groups

In all, the researcher interviewed 310 respondents. Specifically, out of the 310 respondents, 300 were selected from the two strokes (Zongo and Residential strokes). Besides, the remaining 10 interviewed were officials. The selection of only 300 respondents from the area is due to financial constrains and the limited time at the disposal of the researcher to complete this academic exercises.

With regard to the selection of respondents from the two strokes (Zongo and Residential Stroke), Quota sampling technique was employed. The Zongo stroke has the largest population in Madina with an estimated population of 8,534. The Residential Stroke, even though is the largest stroke in terms of geographical size has an estimated population of 3,033. (Electoral Commission, Ga East Municipal Office, 2004-2006).

In quota sampling, a maximum number or proportion acceptable is assigned to a specific group and the actual selection of the units to be studied is left to the researcher

(Kumekpor 1999). In this regard, at the household level, 190 respondents out of a sample size of 300 were selected from the Zongo Stroke. This number constitutes 63.3 percent of the total sample size. The rest, 110 respondents representing 36.7 percent of the household sample size were selected from Residential Stroke.

Specifically, 130 females and 60 males were interviewed from the Zongo Stroke and 70 females, 40 males from the Residential Stroke were also interviewed. In all, 200 females and 100 males were interviewed at the household level. The rationale behind the choice of more females than males was due to the fact that women are seen as homemakers who produce a lot of solid waste through their domestic and commercial activities. Moreover, they may have various ways of managing the solid waste produced. In all, 67 percent of the respondents were female while 33 percent were males. Semi-structured open-ended questionnaire was used to elicit responses from the households.

Ten Officials interviewed were selected from the national, district and local levels. These include one schedule officer from Environmental Health and Sanitation Unit at the Ministry of Local Government, Rural Development and Environment, one from the Environmental Protection Agency, one from the Ga East District, and five from Madina Urban Council (Environmental Health and Sanitation Department). In addition, two private contractors of waste management were interviewed. Here interview guide was used to elicit responses from the officials.

The data for the study were obtained from both primary and secondary sources. The primary source consists mainly of data collected from the study areas through in-depth interviews and field observation. Bearing in mind the objectives of the study, the semi-structured open-ended questionnaire was also employed. The flexibility of this method allows for the gathering of in-depth data from respondents. In all, a set of semi-structured questionnaire and three sets of interview guide were used.

Secondary data for the study included an extensive examination of the body of literature on the subject. The literature included textbooks, journals, newspaper publications, policy documents, unpublished documents, media reports and articles relevant to the study. The internet was also used as a very valuable source of current information on the subject.

1.4.5 Ethical Consideration

Browne (2005) has cautioned that researchers should take account of a number of ethical issues. These include, the sensitivities of those helping with the research, anonymity, privacy and interest of people who participate in the research. He cautioned also that the research should be based on the free consent of those studied.

Against this background, the study addressed the above ethical issues by protecting and safeguarding respondent confidentiality. In this regard, respondents were assured that information obtained would not be used for any reason other than for the purpose of this research. The study, therefore, ensured the maximum respect for the privacy of the target groups. This is what Kvale (1996) calls, “protection of subjects” privacy. Changing

peoples' names and identifiable features in the reporting of interviews ensures anonymity. In this instance, the names of respondents were also replaced by pseudonyms. Respondents were given the freedom to participate or opt out.

1.4.6 Limitations

Encountering challenges in research work is not new and this work is no exception. The use of qualitative method attracts some challenges. The use of purposive technique to select only two strokes out of six strokes is a limitation in that the findings cannot be used to generalize for the whole community. Bryman (2004) has observed that unlike internal validity, external validity represents a problem for qualitative researchers because of the tendency to employ case studies and small samples. One of the main challenges of qualitative research is how to address concerns raised by critics. The approach fails to address the issues of validity, reliability and objectivity.

Also, the use of quota sampling for the selection of the respondents was a problem. This was due to the fact that the 2000 population census did not provide reliable data for the community. Hence an estimated population projected by the District Assembly was used. According to Kumekpor (1999), deciding on relative size of quota to be assigned to different sub-division of the universe is a problem of quota sampling. Thus, he identified the following problems in using this method. First, significant reliable data on the universe which are necessary for a quota is a problem especially in West Africa where population census is rarely conducted. Second, the estimation of the actual size of the different constituent groups is difficult and may lead to assignment of inappropriate

quotas. Third, since the choice of the actual units to be studied is left to the interviewer, he is likely to select those who are easily accessible or traceable. Despite these problems and difficulties in quota sampling, the writer noted that quota samples are useful especially where a small number might be unrepresentative of a large population.

As far as this work is concerned, significant number of problems were also encountered. Madina being an urban community consist of various kinds of people of different origin. As a result of crime and other social vices people become suspicious of each other in such an urban environment. There is anonymity unlike a village community where members are familiar with each other. However, with the help of an opinion leader, the researcher was able to enter the chosen communities to establish rapport with respondents and subsequently interview them. Some respondents refused to be interviewed with a tape recorder because they feared that the authorities and the media may take them on. Hence only those who were willing were interviewed.

The problem accentuated during interview with officials at both the national and local levels. Various appointments made for interviews were postponed on several occasions, prolonging research time. However, persistent approaches were made until the interview was conducted. Also, poor data base on waste management at both district and local level posed significant problems for data analysis. The Urban Council for instance, does not have appropriate data about various communities in Madina. According to the Principal Environmental and Sanitation Officer, there is lack of logistics to keep proper records. The office does not have even one computer for record purposes. With no air conditioner, the place is normally hot making it uncomfortable for workers. With a very small space

and corridor, community members and other visitors who patronize the office had to queue for their turn. Noise is the order of the day at this office because it is located very close to Madina market. At this juncture it is expedient to put this work in a proper context. Hence, the next chapter focuses on Ghana's Environmental and Sanitation Policy

1.5 ORGANIZATION OF THE THESIS

There are six (6) chapters in the study. The first chapter comprises of introduction, the problem statement, and objective of the study, methodology, ethical consideration and limitation of the study. Chapter two, deals with Environmental and Sanitation Policy. Literature review and theoretical framework form chapter three. Chapter four presents the profile of study area. Chapter five comprises of presentation and analysis of data. The final chapter six (6) provides conclusion of the study and recommendations to improve waste management situation.

CHAPTER TWO

2.1 GHANA ENVIRONMENTAL AND SANITATION POLICY

2.1.1 Introduction

Waste management is one major area in urban management which has a major impact on urban livelihood and people's health (Obirih-Opareh 2002). The Government's action plan and Ghana's Vision 2020 have recognized environmental sanitation as a factor contributing to health, productivity and welfare of people of Ghana. These programmes have acknowledged environmental protection and improved management of human settlement as key factors in rural and urban development (Environmental Sanitation Policy, 1999). For the purpose of this work, the discussion of the policy may be restricted to objectives and core components; challenges; role of the district assembly, communities and individuals among others. It will also present the strengths and weakness of the policy.

The Ghana Environmental and Sanitation Policy (GESP) formulated in 1999 aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements to promote the social, economic and physical well-being of all sections of the population. It comprises a number of complementary activities, which includes the construction and maintenance of sanitary infrastructure, the provision of services, public education, community and individual action, regulation and legislation.

The principal components are collection and sanitary disposal of wastes, including solid and liquid wastes, excreta, industrial wastes, health care and other hazardous wastes;

cleansing of thoroughfares, markets and other public spaces; control of pest and vectors of diseases; food hygiene; environmental sanitation education; inspection and enforcement of sanitary regulations; disposal of the dead and monitoring the observance of environmental standards, among others.

These services according to the policy, must be provided reliably and continuously to mitigate the negative effects of social and economic activity in human settlements. However, the above listed services appear not to be effectively provided in most urban areas in Ghana. The urban crisis is most evident in the areas of solid waste management and sanitation. House-to-house collection services in most urban areas are inadequate; both solid and human wastes are disposed of in an insanitary manner (Ayee and Crook 2003).

Currently, the environmental sanitation status of Ghana leaves much to be desired. Less than 40% of urban residents are served by solid waste collection services and less than 30% by an acceptable household toilet facility GESP (1999). The former Minister of Local Government and Rural Development, Mr. Kwadwo Adjei-Darko, alluded to this fact. In addressing The Association of Refuse Collecting Containers Manufacturers, he advised newly created sub-metropolitan councils to set up Sanitation Task Forces to address this problem *The Accra Daily Mail*, Jan. 28 2004 see Appendix IV for a culled Newspaper report of his speech.

In areas where wastes are removed, most are disposed of in an unsanitary manner, posing serious risks to human health and the environment, including the country's dwindling water resources. Storm water drainage is inadequate or absent in most settlements, and flooding is common. In addition, malaria continues to be one of the major health problems in rural communities in Ghana.

Besides, the availability of modern toilet facilities seems to be a major problem in Ghana. Information collected on types of toilet used by households show that a fifth of households in Ghana do not have any toilet facilities. Only 6 percent of households have access to flush toilets, and 28 percent use Kumasi Ventilated Improved Pit latrines (KVIPs). The most common form of toilet, used by 38 percent of all households, is the ordinary pit latrine, while 7 percent use a pan or bucket for toilet (Ghana Statistical Service, 2000). Ironically, The Supreme Court in a land mark ruling has ordered the Accra Metropolitan Assembly (AMA) to phase out the use of Pan Latrines by 2010 and prosecute those who fail to convert their Pan Latrines into KVIP or Water Closets. (See Appendix IV for Newspaper report of this Order).

In terms of locality, rural households are worse off: 27percent of rural households do not have access to any kind of toilet facility. Therefore, people ease themselves in the bush or on the beach (popularly known as "free range"). The situation in rural savannah is quite alarming; nearly 70 percent of households in this ecological zone do not have access to any toilet facility. Even in urban areas, the provision of toilet facilities is far from encouraging: about a tenth of urban households do not have access to a toilet. In terms of

the country as a whole, these figures imply that close to a million households do not have any toilet facilities; 23,500 of these households are in Accra, 131,000 in other urban areas, and 783,000 in rural areas (Ghana Statistical Service, 2000).

The Growth and Poverty Reduction Strategy 1 (GPRS 1) issued in 2003 was directed primarily towards the attainment of the anti-poverty objective of the UN MDGs. GPRS II is intended to introduce a new policy which seeks to accelerate the growth of the economy so that Ghana can achieve middle-income status within a measurable planning period. Poverty eradication should not focus on only accelerated growth but also the health of the citizenry is very crucial. In this regard, proper waste management systems and clean environment are very critical to poverty eradication. For instance, some parts of the urban areas in Ghana, especially Accra, are very dirty. The coverage of sanitation in the country is even lower. As at 2001 the coverage of sanitation in the country was 12.61%, which is reflected in the frequent sight of people relieving themselves in public places, near water sources and with associated environmental degradation (Ministry of Health, 2007). Madina being one of the urban areas in Ghana is no exception.

At the household level, poor hygienic practices by individuals and communities are compounded by insufficient and ineffective hygiene education. Vector-borne diseases such as malaria and bilharzias are rife due to the virtual absence of pest and disease vector control programmes. These factors have serious health impact: more than half of all reported diseases are related to poor environmental sanitation with its attendant social and economic costs. Flooding causes major damage to public infrastructure and private

property. Pollution of water resources increases technical difficulty and cost of providing water supplies. Besides, the sight and smell of inadequately managed wastes constitute a major discomfort to citizens and visitors to Ghana.

Some of the underlying causes of this situation have been identified as: (a) lack of a clear national goal or vision of environmental sanitation as an essential social services and major determinant of the standard of living; (b) lack of a formally constituted environmental sanitation sub-sector in governmental system of sector development planning; (c) lack of a comprehensive policy assigning responsibilities for environmental sanitation to the relevant Ministry and agencies, resulting in overlaps, gaps and poor co-ordination in the management of programmes and services; (d) lack of technical capacity in Ministry of Local Government and Rural Development (MLGRD) to orient and support the District Assemblies in the provision of environmental sanitation services; (e) attempts to transfer to the Assemblies environmental sanitation functions performed by Ministries and central Government agencies, without transferring accompanying budgets, personnel and equipment; (f) weak and/or outdated and poorly enforced environmental sanitation legislation; (g) inadequate allocation of resources for environmental sanitation services, both nationally and at district level; (h) lack of adequate professional manpower including engineers, planners and administrators, for planning, management, policy formulation and research.

The basic elements of a strategy to respond to the objectives and problems outlined above and to promote accelerated development of the sector include: (a) formal establishment of

environmental sanitation as a sub-sector within the national development programme; (b) rationalization of institutional objectives and function at all levels, including delineation of responsibilities and the establishment of inter-agency linkages; (c) establishment of a National Environmental Sanitation Policy Coordination Council within the Ministry of Local Government and Rural Development; (d) establishment of a National Environmental Sanitation Day to be observed one day in a year by all citizens and (e) development and strengthening of the community's role in environmental sanitation, among others.

By adopting the above strategies it is intended that by the year 2020 the following should be achieved: National Environmental Sanitation Day is established by legislation and observed regularly; The National Environmental Sanitation Policy Coordinating Council is established within the Ministry of Local Government and Rural Development; environmental sanitation technologies are under regular review and continuous improvement; all solid wastes generated in urban areas are regularly collected and disposed of in adequately controlled landfills or by other environmentally acceptable means; all excreta are disposed of either in hygienic on-site disposal systems or by hygienic collection, treatment and off-site disposal systems; all pan latrines are phased out (by 2010); at least 90% of the population has access to an acceptable domestic toilet and the remaining, 10% has access to hygienic public toilets; environmental standards and sanitary regulations are strictly observed and enforced, among others.

The above mentioned strategies appear to be laudable. If well implemented, they may go a long way to improve the sanitation situation in general and solid waste management in particular. However, with regard to waste management, it appears implementation procedures are weak. To achieve proper sanitation in the country, there is the need for leaders to be committed to the implementation of policies designed to achieve healthy environment. In addition, communities need to be educated to acquire a positive attitude towards waste management.

Ensuring good sanitation is, therefore, the responsibility of all citizens, communities, private sector enterprise, NGOs and institutions of Government. All these actors have an essential part to play in maintaining a high standard of environmental sanitation. Where individuals, establishments or institutions fail to discharge these responsibilities, the competent authorities shall take any necessary remedial action at the expense of those in default. The competent authorities shall also assume responsibility for the maintenance of specified public areas in a sanitary condition and charge fees for the use of such areas.

The above responsibilities of individuals and institutions, if well discharged, may promote environmental quality. In addition if sanitary laws are strictly enforced by competent authorities against the individuals or institutions it may go a long way to check recalcitrant individuals and institutions. It appears the laws of the land are not effective. This is evident in most urban areas where indiscriminate littering and dumping appears to be the order of the day and the local authorities and the laws seem not to deal accordingly to these acts.

According to the Environmental Sanitation Policy, waste management shall be carried out by waste management departments within metropolitan and municipal assemblies, or a Waste Management Unit within the Environmental Health and Management Departments of District Assemblies. They may provide the services directly or indirectly through private contractors or franchisees. The Assemblies shall in all cases maintain an in-house capacity to provide at least twenty (20) per cent of the services directly.

Even though waste management Unit within the Environmental Health and Management Departments of District Assembly is mandated to manage waste, it seems this department is faced with a lot of challenges. These challenges include lack of funds, transport, equipment, logistics and poor community attitude, among others. It is, therefore, not enough to give local bodies certain decentralized roles to perform but also the necessary logistics and other compliments should be in place to cushion them to perform effectively. In an interview with the District Waste Management Officer, a number of the above mentioned challenges were enumerated. Besides, community attitude was mentioned as one of the critical factors militating against their effectiveness.

Within the Environmental Health and Management Department, the Environmental Monitoring Section of the Environmental Protection and Standards Enforcement Unit in collaboration with the Environmental Protection Agency (EPA), are responsible for monitoring and enforcing environmental standards and regulations set by the EPA and other national regulatory agencies. These bodies are supposed to organize continuous

public education in order to safeguard the environment. This includes the responsibility for monitoring the environmental impact of assemblies' own waste management activities. The Environmental Management Department which has been mandated to ensure environmental standards is saddled with a number of challenges both national and local.

It seems that the government has given the EPA all the powers (in the EPA Act 490) to carry out its statutory responsibility. However, it is handicapped by financial constraints. The EPA has inadequate number of legal officers to carry out prosecution cases and frequent adjournment of court cases waste time and also demoralize personal effort to enforce good environmental practices.

Although the sanitation policy aims at developing and maintaining clean, safe and pleasant physical environment in all human settlement, it seems this dream has not been realized due to a number of constraints militating against it. Collection and sanitary disposal of wastes, including solid wastes, liquid wastes, excreta, industrial wastes and other sanitary services are not reliably and continuously done. It appears the policy is not being effective in this regard.

With regard to the promotion of environmental and hygiene education at all levels of the society, the policy seems not to be doing well. Probably, the policy needs to be revised to meet the social changing pattern of society. While it takes cognizance of the need to

ensure a clean environment, the policy has neglected certain important measures. For instance, in the area of public education the policy appears not to be effective.

As a solution to ameliorate sanitation problems, bye-laws have been passed by the district assembly. Despite these, waste management continues to present a challenge in Madina. This is evident in Madina where wastes are dumped indiscriminately and the laws seem not to be doing well in this regard. According to the district's bye-laws, the following acts are prohibited, namely, dumping of refuse at unauthorized areas, defecating in or at the banks of water, washing and bathing in public places among others. These acts according to the bye-laws attract 3 months imprisonment or a fine. However, it appears the district bye-laws lack proper enforcement.

In conclusion, environmental sanitation in general and solid waste management in particular, is critical as far as the health of the citizenry is concerned. The Millennium Development Goals (MDGs) Goal 7 is to 'ensure environmental sustainability'. Target 9 requires that member countries integrate the principles of sustainable development into their policies and programmes.

In order to achieve a holistic environmental sustainability, the environmental sanitation policy was formulated. Even though, this policy has laudable objectives, its implementation appears to present a challenge. The policy fails to take cognizance of

dealing with people's attitude towards the environment in general and waste management in particular.

CHAPTER THREE

3.0 LITERATURE REVIEW

3.1 Introduction

As discussed in chapter one, waste management is one of the critical subjects in every society. Improper management of waste poses health and environmental hazards to humanity. This has attracted the attention of both and developed and developing world. As a result, scholars have written so much about it. In the following therefore, my task will be to discuss relevant literature on solid waste from the global and Ghanaian perspective

3.2 Literature on solid waste- A global perspective.

Gourley (1992) found that all societies create waste, and the more industrially developed a country is, the greater the volume of waste it produces. Ehrlich and Ehrlich (1970) have also observed an extremely serious problem facing the United States and other affluent countries. They note that accumulation of solid waste in open dumps or inadequate fills is a problem in US and other affluent countries. To them 94% of the 12000 deposit sites in the US do not meet required standard, a situation they describe as unacceptable. To help solve the problem they described as unacceptable, they recommend the need to minimize the wasteful gathering of nonrenewable resources, the design of all devices, from home appliances to computers, should take account the possibility of recycling their components. This, therefore, suggests the need for source reduction and it beholds communities to change their attitude of excessive consumerism.

Holdgate et al. (1972) note that the disposal of garbage solid waste and liquid effluents emerged as a major aspect of urban impact in the 1970 and 1980s. As one of the solutions to solid waste management problems, Mckinney et al. (1998) note that most immediate and ultimately most beneficial solution to the solid waste problem is source reduction (utilizing less raw material in the first place). In their view, many waste management problems can be solved when people do not purchase or use unnecessary goods. However, they maintained that source reduction alone can never solve the entire waste problem.

Purdon and Anderson (1980) note that waste disposal can be reduced or eliminated by reusing and recycling solid wastes. They found out that industrial production is increasing at three percent (3%) per year, and this may lead to air and water pollution if the necessary precaution is not taken.

Purdon and Anderson further identify rats and flies as the major disease vectors. In their view these vectors transmit disease organisms from a source to a victim. Thus, rats are involved in the spread of bubonic plague and murine typhus. They, therefore, note that there were at least ten cases of plague in the United States in 1979, mostly from isolated contact with wild rodents.

In his study on geohazards, Coch (1995) found out that the growth of human population has been accompanied by a dramatic increase in resource use. He added that processing

resource to produce consumer items and packaging has generated a great volume of solid and liquid waste. Solid waste management is in crisis in many of the world's largest areas. Coch further identified the problem of solid waste in lakes and oceans. In his view, debris washed into the ocean from land and dumped into the ocean from vessels creates aesthetic problems and hazards to marine life. He observed that remote beaches are now littered with floatable debris, such as bottles, foam cups and plastic grocery bags. According to him the problems of solid wastes in lakes and oceans has attracted attention only recently.

Mckinney and Schoch (1998) state that in the preindustrial and early industrial age, settlement communities and factories were often located near waterways, where waste materials were dumped into the river and washed away. They note that at the beginning of the industrial age two hundred years ago, many philosophers and social thinkers could not conceive of a time when, on a global scale, humankind would begin to run out of clean air and fresh water.

Furthermore, they argue that today industrial pollution is found throughout the globe, even in the most remote and isolated areas. It has become clear that the dilute and disperse approach to waste management is no longer valid as a general paradigm. In many cases the national system have been so overloaded that not only are they incapable of dealing with all the human-produced waste hurled into them, but they are actually damaged by the excess waste with the result that they can no longer function effectively and efficiently. Humans have produced innumerable new types of wastes that nature was never equipped to deal with such new element". McKinney and Schoch further argue that

societies should change their basic consumption habits, use and reuse whilst consuming at a lower rate. Thus, massive reuse will save energy and resources. They note that man is at the centre of waste production. Therefore, change in basic consumption and production habits could help enhance effective waste management in all societies.

The above view of McKinney and Schoch (1998) suggests that during the pre-industrial era and early industrial age, the ecosystem was not much disturbed, waste management was not problematic, pollution was under control and the earth was capable of containing all kinds of waste. However, with the age of industrialization where more goods are produced and volumes of waste are being generated, waste management has become problematic. Implicit in this assumption is that if societies do not consider both the cost and benefits of industrialization, the ecosystem will be disturbed and societies will lose environmental quality in its totality.

According to Gourley (1992), waste is more easily recognized than defined. To individuals in Western society, the left over blob of mustard on a dinner plate, like chicken bones or unchewable bits of gristle, is regarded as “waste” and disposed of in the waste bin, while on completing digestive process; our bodies emit waste matter that is flashed into the local sanitary system. He further noted that the more one considers the industrialized world of today, and the third world of tomorrow, the more one realizes that we live in a world dominated by waste, a world of waste, most of it undesirable and that unless something is done about it, humanity may disappear.

Raven et al. (1993) also establish that 23% of the world's population that live in industrialized countries are consuming about 80-90% of what the world is capable of producing, while the 77% of people who live in developing countries have to make do with the rest of the products. Poor people constitute more than one fifth of the world's population, with over a billion living on less than $1 a day and half of them malnourished. This implies that industrialized countries (with low population) produce or generate more waste than developing countries despite the size of their population. Some scholars have shown that the variation is positively related to their income (Beede and Bloom 1995).

Raven et al. (ibid) further maintained that there is no single solution to solid waste management. Source reduction is the most underutilized aspect of waste management. Thus, industrial process can be designed to reduce not only the volume of solid waste but the amount of hazardous materials in solid waste. The writers point out that waste is an unavoidable consequence of prosperous, high-technology, disposable economies. It is a problem not only in the United States but in other industrialized nations. Many products that have the potential to be repaired, reused, or recycled are simply thrown away. Nobody likes to think about garbage, but the fact is that solid waste is a pressing concern of modern society, we keep creating it and places to dispose of it safely are dwindling in numbers.

Beede and Bloom (1995) examined the generation and management of solid waste through the lenses of economics. They estimated that the global burden of municipal solid waste amounted to 1.3 billion metric tons in 1990. Additionally, they found that across countries and over time the generation of municipal solid wastes are positively related to variation in per capita income and that the generation of municipal solid waste per capita does not vary with population size among countries with comparable per capita income. This, therefore, suggests that the generation of solid waste with regard to industrialized countries is determined by their share of population while developing countries account for a disproportionately high share of the world waste relative to their share of income.

To buttress this view, Rand et al. (2000) note that industrial growth and per capita income generate more waste which if not properly controlled causes environmental degradation. In addition, they observed that high income areas generate more waste than low or middle income areas. This, therefore, suggests that waste generation and composition may differ greatly even within the same metropolis.

McGranahan et al. (2001) on the other hand, note that health threat of household solid waste is less acute than feacal waste, but it is often mixed with feacal material where sanitary facilities are lacking and can also provide a breeding ground for vectors of diseases, such as flies and rodents. McGrahana et al. (ibid) further observed that large quantities of urban waste represent a disposal problem for the city. However, they noted that affluent urban centers can solve their immediate waste disposal problems.

In a study on disposal practices at Barisal in Bangladesh, Hoque (1998) found that there was no drainage and disposal system for waste generated. In rural areas, hungry goats and cows help with the disposal of waste. Dogs and birds also help in this effort. It was observed that there was no local authority to collect the garbage and households did not keep a healthy environment. In addition, people usually dump their garbage and waste next to their homestead.

Gottinger (1991) notes that waste problems are serious in big cities of developing countries, and is intricately interwoven with the problem of hygiene and public health. Zurbrugg and Ahmed (1996) found that self-help and use of community participation in many cases are the only solution for solving the waste collection problem in low-income areas. For instance, with reference to a study made in Shal Rasool Colony in India, the writers established that as far as waste management is concerned women are the key community members responsible for maintaining a healthy and clean household and they are directly affected by inadequate solid waste management at the household and community level. However, they observed that community-based collection schemes often collapse when a motivated member of the management or a few individuals working on a voluntary basis withdraw from the scheme. This, therefore, suggests that the inclusion of women in waste management plans could help solve some of the many problems militating against waste management in developing countries.

In the view of Pfammatter and Schertenleib (1996) solid waste management has become an important issue with urban governments of low and middle income countries. They note that even though considerable financial resources have been allocated, most administrations still fail to provide the basic public service to a large section of the population.

In Africa, scholars have noted how solid waste is posing a serious problem to the public health system. Zerbock (2003) notes that the management of solid waste is one of the challenges facing any urban area in the world. The problem of municipal solid waste management is compounded as many nations continue to urbanize rapidly. It is estimated that between 30-50% of populations of many developing countries is urban. Tracing the outcome of a study by WHO in Africa, Zerbock notes that when the governments of Africa were asked to prioritize their environmental health concerns, the result revealed that solid waste was identified as the second most important problem (after water quality). Less than 30% of urban population in Africa have access to "proper and regular garbage removal" (Senkoro 2003 cited in Zerbock 2003:2). The above analysis, therefore, suggests that solid waste management in Africa presents a challenge and this call for serious attention by governments of Africa and all other stakeholders.

Cointreau (1982) identifies priorities for managing solid waste. The first priority of managing solid waste is getting the refuse out from underfoot. The second priority is to provide affordable services, through the use of least cost viable techniques.

In a study made by Thomas et al. (1999) in Port Elizabeth in South Africa, the writers identified the disparities in solid waste removal between low income areas and high income areas. While affluent neighbourhood enjoyed a-once-a-week-collection, townships were served sometimes once a week every month while squatter settlements have no service at all. However, according to the writers, the situation has changed. In their view, this change came about as a result of the new waste management policy in Port Elizabeth which led to once a week collection services for all households. Despite this improvement the writers observed that squatter settlements are generally not provided with refuse removal services. Waste collection is done only on instruction and authority from the council. Apparently, this was done to discourage the emergence of slums in the development of the city.

In a study on municipal solid waste management in Kenya, Henry et al. (2005) established that the growth in municipal solid waste (MSW) generation has been rapid, while the capacity to collect and safely dispose of the material has been on a general decline. Besides, the capacity to provide disposal services by the Nairobi city authorities declined due to their inability to keep all MSW collection trucks at full operational capacity. Additionally, the study revealed that uncollected MSW in the upper and middle income zones tends to increase in the rainy season when road conditions are worsen by rains.

3.3 Literature on solid waste in Ghana.

According to Benneh et al. (1993) solid waste problems are not priority health concern for authorities and the capacity for collection and disposal remains weak. In addition, residential domestic waste forms the bulk of all sources of solid waste produced in urban areas in Ghana. The writers observed that the collection and disposal of solid waste and night soil deteriorated progressively from 1979, reaching a crisis in 1985. They attributed these problems to economic crisis in the mid 1970s and early 1980s as the public collection services declined due to lack of funds for the acquisition of capital equipment and the operation of the services among others. Benneh and others also opined that, the establishment of the Waste Management Department in 1985 (equipped and funded with German assistance), marked a notable effort to address the problem of waste management. However, as they observed the Department is capable of collecting only 60% of the 900 tons.

In a study on management of solid waste in Accra, Domfeh (1996) sought to appraise the economic and social dimensions of solid waste management. He observed that the collection and disposal of solid waste is a persistent problem for the city authorities. Only about thirty percent (30%) of residents benefit from house- to- house collection services and substantial quantity of solid waste end up in open drainage systems. In another study undertaken in (2001) privatization was seen as a viable solution to governments' inefficiency and ineffectiveness in managing waste.

In a study on solid waste management in Accra, Obirih-Opareh (2002) notes that solid waste management practices entail a coherent system for generation, gathering, storage, collection, transportation, recycling, energy recovery, treatment and disposal. Dealing with dimensions of solid waste collection problems in Accra, he noted that there is a clear relation between the waste management practices and cleanliness in various residential areas of Accra. Additionally, he notes that greater part of the city is fairly clean, particularly the rich and some middle-income areas. However, he observed that some parts of the poor-income areas and market places are filthy, littered with plastic bags and gutters often blocked by all manner of waste due to poor waste practices. These problems identified in Accra stems from negative attitude of residents, a view Domfeh (2001) supports. In the words of Obirih-Opareh, "solid waste collection in Accra has bedeviled not only the city authorities, but also service consumers and providers alike". The reasons that have reinforced the problems include: (a) the volume of waste generation is huge compared to the available capacity for its collection. (b) the attitude of residents towards waste in general. (c) inaccessible road, making it difficult to remove garbage from deprived areas. (d) enforcement procedure for offenders of bye-laws for waste and sanitation are weak among others.

Songsore (2003) observed that the capacity to handle household and municipal waste is unsatisfactory in urban areas in Ghana. Additionally, he notes that dumping either at official collection point or unofficial sites, is the predominant mode of garbage disposal in the country as a whole. Furthermore, he identified poor performance of the waste disposal sector to poor infrastructure and funding. For instance, he notes that it required

mass action by Nima residents to have piles of refuse abandoned for two months in their community evacuated. Again the writer maintained that problems associated with inadequate solid waste disposal include unsightly conditions of neighbourhood environments, odour nuisance and prevalence of diseases such as cholera, diarrheoa, dysentery worm diseases and others. A health- promoting home and urban environment embody the fundamental aspirations of the majority of the people, where the quality of their lives depends on a clean and decent home in which to live and raise a family. (Novick, 1990: 15 cited in Songsore 2004 P.8). This, however, remains an unmet need for most poor residents in African's cities.

In their study on municipal solid waste in Accra, Boadi and Kuitunen (2003) observed that municipal solid waste management in Accra is at present delivered in an unsustainable manner. Thus, the writers attributed the generation of large quantities of waste to urbanization. Apart from Accra, it appears other urban areas in Ghana also experience solid waste management problem but it seems the problem is so enormous in Accra than in other urban areas in the country such as Kumasi, Obuasi, Takoradi, Cape Coast, Koforidua, Nsawam and Tamale, among others. Currently, waste management is the responsibility of the district assemblies in Ghana. This responsibility has put a lot of burden on them in terms of provision of efficient trucks and other logistics, among others to manage waste at the various local levels. This has become serious as a result of low revenue generation. Thus, District Assemblies have become overwhelmed with collection, transportation, treatment and disposal of waste (Bandie 2002).

As required by the Local Government Act 462 Section 10(3), the district assemblies are responsible for development, improvement and management of human settlement and the environment in the district. In assessing the performance of public-private collaboration in solid waste management in Accra, Post and Obirih-Opareh (2002) have noted that through trial and error, the Ministry of Local government, Rural Development and Environment has gradually transferred this service to the private sector. It appears that privatization has benefited consumers in terms of wider coverage, high reliable services, but there are a number of drawbacks notably, worsened labour conditions, negative environmental impacts and lack of financial sustainability.

Having reviewed the above literature, it is obvious that the articles and studies conducted did not focus on community attitude towards solid management. Some of the writers identified problems contributing to solid waste management as, lack of funds, technology, urbanization, industrialization, migration, lack of transport and equipment among others. The review suggests a gap in the current literature in relation to community attitude towards solid waste management in Ghana. This is the mission of this study. Specifically, therefore the study focuses on community attitude towards solid waste management in Madina.

3.4 Theoretical framework

The issue of dirt or waste generated by humankind appears problematic culturally and seems to have been relegated to the background. The anxiety and discomfort felt about excrement, combined with their attraction and fascination, represent a crucial anthropological paradox: the curious cultural taming of what appears to us as wild and

uncontrolled (Van der Geest, 2007). In Van der Geest's view, faeces are indeed an intriguing *matière á penser*, which, however, has been neglected by anthropologists. Home-based discomfort and rules of etiquette have been cited as reasons which have prevented anthropologists from entering the dark world of faeces and waste. Faeces and waste are as much a part of human society just as any aspect of human behaviour. The dark world of faeces and waste is thus a veritable anthropological laboratory. The question is what constitutes waste? According to Oxford Dictionary, waste is any material which is no longer needed and is thrown away. Curtis (1998:11) notes:

"Putting the same things together, separating like from unlike. It's what I've done all my life. People mix up everything. They throw everything away in the same place. That's how they make trash. There's no such thing as trash. Trash is the confusion we make throwing things out".

The concept of waste in Douglas's (1970) view is described as "matter out of place'. Van der Geest argued that excretions of the body comprise the most strongly felt 'matter out of place' and therefore the most informative pointers of cultural boundaries. With regard to community attitude towards waste management, Van der Geest's view is rightly represented. The negligence of waste or the mismanagement of waste fits into Douglas's concept of 'matter out of place'. In many urban communities, especially in the developing world, indiscriminate dumping, littering and open defecation is common as a manifestation of systemic failure and urban anomie. Durkheim's theory of anomie and Social Learning Theory of Bandura explain why people do what they do towards waste management.

Anomie literally means normlessness. It arises when social controls are weak, when moral and political constraints collapse and is particularly prevalent during periods of rapid social change, such as industrialization and urbanization, when traditional norms and values are disrupted and uprooted. People become restless and dissatisfied and a new moral consensus about what people can reasonably expect from life is needed. Industrialization and consumerism accentuate this process, encouraging specialization and self-interest (Slattery 2003). Anomie is thus a state of deregulation, a breakdown of social controls and social order unleashing individualism. This state of deregulation may no doubt influence people's attitude towards waste management. Social order and individual happiness depends on a high degree of social integration (Slattery 2003).

In Durkheim's view, there is an underlying conflict or tension between the individual's aspirations and society's needs for order and control (Slattery 2003). An absence of norms or fundamental conflict over society's basic values Durkheim called anomie. He opined that such a social 'sickness' would occur during periods of social upheaval or transition. Durkheim explains that in small-scale traditional societies there is mechanical solidarity. This is where relationships are personal and there is limited division of labour. Furthermore, it is fairly easy to have a general consensus as to the values and norms of society. Moreover, the rights and privileges of individual members of the traditional societies are established and upheld, especially if backed by the moral authority and sanctions of religion. In this regard, the management of waste in small-scale traditional societies appears better. This is due to strict adherence to values and norms of the society.

In contrast, Durkheim explains organic solidarity as where there is an extensive division of labour and where relationships are often impersonal. In the transition from the mechanical solidarity of such societies to organic solidarity of industrial ones, there is a breakdown in social consensus and social controls over the individual. Thus, the management of waste in societies where there is lack of social consensus and social controls, the management of waste seem problematic.

The theory of anomie by Durkheim which signifies normlessness or lawlessness is evident in most urban areas in Ghana, more especially with regard to solid waste management. As said earlier, in traditional societies, there is consensus as to the norms and values. Moral authority and sanctions of religion are respected and communities are owned by the people themselves. Hence, with regard to cleanliness, community members are committed to observe the norms and values. It is, therefore, not surprising that the villages or traditional societies look cleaner than the cities where social controls are weak. According to Durkhiem, (Slattery 2003), the transition from the mechanical solidarity to organic solidarity where relationship is often impersonal leads to the breakdown of social consensus and social control.

Thus, this lawlessness being experienced in the cities cause people to dump solid waste or litter indiscriminately on the environment. It appears most people in the city think the city is for the government including its waste materials. Thus, the unclean environment in most urban communities in Ghana may be connected to lack of strict enforcement of rules governing waste. The system put in place to ensure proper waste management

systems have failed. Hence most urban communities do not regard sanitation laws. The issue of lawlessness is not limited to only communities but also officials who are not committed to the regulations governing waste management in urban centres. Expressing concern about the lack of discipline, lawlessness and ignorance that appear to be creeping into the Ghanaian society, President Kuffour (2001) said these developments have made the society lose the capacity to do things that underpin social advancement and civilization (Obirih-Opareh 2002). To buttress this point, Ghana Environmental Protection Agency (2007) observed that the act of lawlessness has reached a level that makes people think that it is normal to dispose of waste anywhere not taking into consideration its eventual adverse consequence on the residents themselves. This tells much about the kind of attitude some people have towards solid waste management. This attitude should be corrected. In order to correct this attitude, Bandura's Social Learning theory is necessary in this regard.

Social Learning Theory emphasizes that we learn from the example of others as well as from direct experience with rewards and punishment. The power of models to modify behaviour is a crucial tenet of Bandura's social learning theory (Brehm and Kassin 1996: 295). In the view of Bandura, "Learning would exceedingly be laborious, not to mention hazardous, if people had to rely solely on the effect of their own action to inform them on what to do. Fortunately, most human behaviour is learned observationally through modeling. Social learning theory explains human behaviour in terms of continuous reciprocal interaction between cognitive behaviour, and environmental influence.

Bandura' theory improves upon the strictly behavioural interpretation of modeling provided by Miller and Dollard (1941).

Social learning theory has been applied extensively to the understanding of aggression (Bandura, 1973) and psychological disorders, particularly in the context of behavior modification (Bandura, 1969). It is also the theoretical foundation for the technique of behaviour modeling which is widely used in training programmes.

Applying this theoretical framework to Ghana and for that matter at the community level, it may be said that through social learning, people sometimes acquire certain attitudes which may be negative or positive. For instance, when it comes to the littering of the environment, some people throw waste around just because they have seen others doing so. This is however a negative attitude which should not be emulated. Through socialization children learn both good and bad attitudes at home and school. If community attitude is good it will tend to influence them. If community attitude towards solid waste management is negative it may go a long way to affect the new ones born into the family and the environment at large. This therefore suggests that people in a given environment can easily learn from each other experience as well as attitude. When it comes to solid waste management, people within a given community may learn from how others manage waste. For instance with regard to indiscriminate disposal of solid waste, this is normally seen in some urban communities. Therefore, this theory best fit this study in that others behaviour tends to influence others in a given environment when it comes to waste management.

CHAPTER FOUR

4.0 PROFILE OF MADINA

4.1.1 Introduction

This section discusses the profile of Madina, the study area. This discussion is necessary because it discusses the location or the physical environment, history, population, social and economic activities, among others. In any sociological study these elements are critical. In the view of Macgill (1986), man in society is to be viewed as forming part of a complex ecological system and there is intricate relationship between man and his environment. In this regard, the knowledge of the physical environment of Madina is essential for this study.

The Ga East District is one of the new districts in the Greater Accra Region, created in August 2004. It is located towards the north of Greater Accra Region. It is one of the six districts in the Greater Accra Region and covers a land area of 166sqm. It is boarded on the west by the Ga West District Assembly (GWDA), on the east by the Tema Municipal Assembly (TMA), on the south by Accra Metropolitan Assembly (AMA) and the north by the Akwapim South District Assembly. The 2000 National Population and Housing Census puts the District's population at 201,542 with an intercensal growth rate of about 2.3%. The growth of the population is largely due to migration inflows (District Medium Term Development Plan, 2006-2009).

Madina which has been chosen for the study lies on a gentle undulating land to the north of Accra. The settlement is located along the Accra-Dodowa road. The University of Ghana is further south of Madina on the Western side approximately two miles away. Madina is a heterogeneous community consisting of people of different ethnic, social and religious background (Quarcoo et al. 1967). Madina is a busy town often occupied with human and vehicular traffic. The main road leading to the town is beautifully designed with big and small bill boards, welcoming people entering the community. The main road leading to the central market is filled with traders of all kinds, selling alongside the road and generating waste on the environment. Besides, the gutters along the road are choked with all kinds of waste preventing the free flow of liquid waste, producing unpleasant smell. This 'ordered anarchy' in Madina today has come about as a result of migration, population growth and urbanization. Madina began as a small village but now it has become a suburb. The following historical account was told by some elders of the town.

Historically, the people of Madina were originally located at La near the present Trade Fair site. Later, they were resettled at Shiashie under the leadership of Seidu Kardo. Seidu Kardo customarily secured the right to the land, from Nii Odoi of Bawaleshi. However, Nii Odoi directed Seidu Kardo to approach the La Mantse, Nii Adjei Onano. On the 9th of February 1959, the then Commissioner of Lands became aware of the growth of the village at Shiashie. He therefore wrote a letter to Seidu ordering him to remove his unauthorized structures. This order was given in view of the proposed extension of the airport and the construction of Tema Motorway. Seidu Kardo failed to

comply with this eviction notice, and in March 1959, the buildings were demolished and Seidu was imprisoned.

After his release from prison, he appealed to the Government to allocate a new area for him. Necessary negotiations were carried out with the La Mantse and the land at Mile 10 on the Accra-Aburi road, the present site of the Madina, was granted to him. The Minister of Housing, acting on behalf of the government requested that the village be properly planned. Seidu got a licensed surveyor to demarcate the land. After the completion of the lay-out, the La Mantse on behalf of the La Stool granted to Seidu the right of entry to the land on the 14th of June, 1959. Seidu Kardo subsequently began a little settlement in the centre of the present town (Quarcoo et al. 1967). However, by the 22nd of October 1959, about twenty five houses had been built.

According to Baba Seidu (son of the late Seidu Kardo), after Seidu was granted the right to the land, he went on pilgrimage to Mecca and on his return, named the place "Madina". **Medina** (In Arabic: المدينة المنورة); also translated into **English** as **Madinah**; officially **al-Madīnah al-Munawwarah**) is a city in the Hejaz region of western Saudi Arabia, and serves as the capital of the Al Madinah Province. It is the second holiest city in Islam, and the burial place of Muhammad. It is historically significant for being Muhammad's home after the Hijrah. Madina means "City of the Prophet" (http://en.wikipedia.org/wiki). After the death of Kardo, his son, Baba Seidu succeeded him. However, he is not considered as the overall chief of Madina. Currently,

the people of Madina do not have a common chief. The various ethnic groups in Madina have their heads and sub-chiefs.

Now, the settlement is fast taking on new social and economic roles by virtue of the increasing opportunity it offers for trading and marketing of goods to the resident population. This has perhaps led to the migration of people into the area. The majority of these migrants is in their youth and has no employable skills (District Medium Term Development Plan, 2006-2009). As a result they are compelled to engage in jobs like head portage (kaya yoo), truck pushing, and street hawking. A survey conducted by the District Planning Coordinating Unit (DPCU) indicated that these migrants are mostly from the northern sector of the country.

The population of Madina is estimated at 76,697 with an annual growth rate of 1.8% (Ghana Statistical Service, 2000). Estimated number of houses is four thousand, eight hundred and sixteen (4,816). The projected population for this year (2008) is 91,999 (District Medium Term Development Plan 2006-2009). The above projection coupled with the annual growth rate of 1.8%, shows that the population of Madina is increasing at an alarming rate. This, therefore, has put severe pressure on the environment causing housing deficit. Consequently, some people sleep in kiosks, stores and in other places. According to the District Planning Unit, toilet facilities in Madina are being turned into stores and housing units by some landlords. Uncompleted buildings and schools have then been turned into waste disposal sites, making the management of waste more especially solid waste, unbearable in the area.

As a result of its commercial status, most of the youth from Accra and Madina sell along the road and other places generating a lot of solid waste. Besides vehicular traffic, noise is the order of the day especially during market days. According to the District Waste Management Officer (Abokobi), sanitation is a problem in Madina and huge amounts of human and industrial waste is generated.

Madina can boast of a number of public and private schools at all levels. In the public domain, there are 31 primary schools, 26 junior high schools. The private sector has 55 primary schools and 29 junior high schools (District Education Service, 2007). It has a tertiary institution, Institute of Professional Studies (IPS). The private schools are more than public schools.

The National Health policy (2007) provides broad guidelines for the development of health programmes by key stakeholders such as the district assembly. In this regard, the District Health Management Team is responsible for health service delivery in the District. Madina being one of the largest settlements in the district also benefits from health delivery services. Curative and preventive health services are provided at health centres in Madina. Besides, traditional medicine providers also provide health services to their clients. Maternity homes are provided by some private clinics in Madina.

There are however a number of private clinics which include Swan Clinic and Alpha Medical Centre (run by the Church of Pentecost). According to the District Medium

Term Development Plan (2006-2009) public health facilities do not provide inpatient services. Furthermore, information on HIV/AIDS in the district is incomplete because of the absence of laboratories at the public health facilities. All suspected cases are referred to laboratories outside the district most of whom do not come back with the report for follow-up.

Malaria continues to be the major cause of out patient department (OPD) attendance. The OPD records in Madina Health Centre indicate that among the ten top common diseases recorded in 2007, malaria tops all the diseases reported. Between January and August 2008, 4,299 cases of malaria were recorded. Table 1 on the next page shows some of the diseases recorded in 2007.

Table 1: Top Ten Diseases

	Diseases	Number of cases	Percentage
1	Malaria	6194	78.9
2	Diarrhoea	396	5.0
3	Skin Diseases	387	4.9
4	Hypertension	247	3.1
5	Anemia	150	1.9
6	Other Acute Respiratory Tract Infection	149	1.9
7	Chicken pox	121	1.5
8	Intestinal worms	111	1.4
9	Pneumonia	53	0.7
10	Ear Infection	45	0.6
	Total cases	**7,853**	**100.0**

Source: Madina Health Centre, (2008).

The above records show that malaria is the number one disease reported at Madina Health Centre. Other problems identified in the area of health include inadequate health personnel, inadequate space in the facilities, lack of laboratory facilities, lack of sanitation facilities, absence of maternity block at Madina Clinic, inadequate logistics and poor lighting system. Currently, the Health Centre has about forty-eight health personnel including two doctors. The employment of more health personnel may improve health delivery services in Madina.

The above listed challenges result in infant as well as maternal mortality and other health related problems. For instance, the District Planning Unit (2007) noted that delivery services are lacking in public facilities in Madina. Women, therefore, receive antenatal care at these facilities but are referred elsewhere for delivery. The District planning unit also acknowledges the implementation of the National Health Insurance Scheme (NHIS) in the district including Madina with citizens registering to benefit from the scheme. However, most of the health facilities are not prepared to provide services to clients under the NHIS with the exception of Alpha Medical Centre in Madina.

Sanitation in Madina presents a challenge and the number of toilet facilities is inadequate. The types of facilities in use include water closet (WC) toilets and Kumasi Ventilated Improved Pit Latrines (KVIPs). Currently, there are about 16 toilets in Madina. Some of these toilets are not properly managed. Problems identified include, inadequate ventilation leading to heat and flies, environmental pollution, among others (Madina Urban Council 2008). Besides, water supply in Madina has been a major challenge to the Assembly. The area has limited or no access to pipe-borne water. Others depend on services provided by private water operators and a few hand dug wells. Picture 3 below shows water stored in poly tanks which are used to flush the public toilets since the pipe borne water does not flow.

Picture 3 (Public Toilet inside Madina Market)

Picture 3 above shows market women selling vegetables close to a toilet. This shows how people relate to filth in Madina Township. It also shows the lack of space for trading activities. During data collection, some respondents lamented that they were unable to use flush toilets due to lack of water. Hence KVIP has been built for them. However, the capacity of the toilet is not enough for the community. Hence people usually queue early in the morning as seen in Picture 4 below.

Picture 4 (Private Toilet)

Madina is an interesting place as far as toilet is concerned. The picture above shows how some residents queue in the early morning in order to ease themselves. A young boy in the yellow and blue shorts appears to be uncomfortable with the queue and wished it gets to his turn early to avoid disgrace. Under the tree is an attendant who collects monies and distributes toilet papers to clients. The amount charged for each visit is about GHC 10 pesewas (US$ 0.10). Residents sharing boarders with the toilet facility may experience air pollution which poses health problems.

Waste generation and management in the district is a matter of concern and in Madina which has remained a dormitory town for both skilled and unskilled labourers. The situation is compounded with the increasing influx of people and rapid urbanization; huge amounts of domestic and industrial waste are generated. In Madina, it is estimated that about 750 tonnes of solid waste is generated monthly out of which 490 tonnes (65%) are collected. The uncollected wastes are indiscriminately dumped in drains and bushes, among others. Out of the 490 tons collected, the private sector collect about 82% through door-to-door collection.

The absence of properly engineered final disposal site is a major constraint. There are three approved and over fifty unapproved dumpsites in Madina. The approved sites are provided with communal containers by the district assembly and waste is dumped free of charge. However, some individuals who claim that they have been managing the illegal dump sites find their own means of collecting monies from those who patronize the facility. In an interview, a respondent said that the dumpsite attendant collects between 20 and 50 Ghana pesewas for every disposal. The amount charged depends on the size of the garbage. The activities of the 'self-elected' dump site attendant show that the local authorities appear to be ineffective in dealing with waste management problems in the communities. It seems the law does not deal with individuals who collect illegal monies at the dumpsite. The constant dumping of waste at these dumping sites is creating serious pollution and threatening the life of people in the vicinity. Waste management problems identified in the District include, inadequate number of refuse containers; irregular and

untimely refuse collection; lack of engineered final disposal site and inadequate machinery and equipment.

Lack of sufficient housing units in urban areas especially, Madina has contributed to overcrowding, development of illegal structures and conversion of Commercial facilities into residential use. This has resulted in the development of slums in Madina. Settlers at these slum areas create a lot of waste problems in the community because of the lack of dump sites and public toilet in their vicinity. Hence, settlers resort to indiscriminate dumping and open defecation.

Madina is described as the hub of commercial centre in the district. Its industrial sector can boost of a number of industrial establishments. The most notable one is Nkulenu Industries Limited. This industry produces palm nut soup base, orange squash, pineapple jam, oil and other products. Currently, the company has fifty workers. The service sector appears to be one of the fast developing sectors of the local economy. Banking services are provided by the Ghana Commercial Bank, The Prudential Bank, The Trust Bank Ltd, Agricultural Development Bank, Women's World Bank and the Abokobi Rural Bank, among others.

The major market centre in the district is located in Madina. It has a market complex which provides services to traders in and around Madina. The market functions daily; Wednesdays and Saturdays are major market days. Items traded in the market include perishable and non-perishables like manufactured commodities, imported goods like

cloth, utensils, and a variety of spare parts. Other goods are cereals, livestock and second hand clothing (District Planning Unit 2006-9). Picture 5 below illustrates human and vehicular traffic in the area of Madina market.

Madina Market Scene (Picture 5)

The strategic location of this market coupled with good accessibility has facilitated its growth leading to congestion and spill-off onto the nearby roads. Waste is generated at an alarming rate with the constant influx of people to this urban centre. About 750 tonnes of waste is generated monthly. This has become a matter of concern to the district.

Besides, drains are choked with filth and the roads are littered with refuse through the activities of petty traders including iced water sellers who transact their businesses along

these roads. Thus, the influx of all kinds of people including traders from Accra and other part of Ghana generate a lot of waste.

In general the road network in the district is fairly good. The construction of the Madina-Ayimensah portion of the Accra-Aburi trunk road is a major intervention that facilitates economic activities in the district. Roads are being constructed linking communities and the market as well. This has made most roads in the neighbourhood accessible for road users facilitating brisk commercial and domestic activities. However, there are no modern lorry parks in Madina. Therefore, drivers and various transport association have taken advantage of the situation and established stations at unauthorized places compounding the already chaotic traffic situation. During market days the main road leading to the central market becomes very congested.

The Ga-East District is made up of different ethnic groups. Almost all the ethnic groups in Ghana can be found in the district although the Akan seem to have a slight majority over the Ga and Ewe. Others are Dangme and the Gurs. This situation is especially true for Madina (District Medium Development 2007). Each ethnic group has its own chief. At the community level, authority is vested in traditional rulers and their elders or sub-chiefs. The chiefs continue to wield some amount of power hence their contribution to, and influence in the decision- making process cannot be under estimated. However, their ability to organize and rally their people to support development programmes is not encouraging as a result of their involvement in chieftaincy disputes and land litigation (District Planning Unit 2006-9). On the other hand, in the modern sector, authority is

vested in the central government who through her decentralization policy has vested her authority in the District Assembly. At the district level, the District Chief Executive has authority over the people in the district including the people in Madina. However, there is collaboration between the traditional authority and the state. In Madina, the Urban Council collaborates with the district assembly in the discharge of local duties.

Madina is a religious community. Human activities in Madina begin at 5 am with the Muazzin's call to prayer and the ringing of church bells by the Christians. Besides, religious inscriptions on vehicles, trucks, stores and kiosk show that the whole atmosphere is charged with religion. Apart from the five times daily prayer of the Moslems, communal or congregational prayers are held on Fridays in the various mosques in the community. Christians also have their mid-week services in the evening and communal services on Sundays. Both Christian and Islamic religions predominate in Madina even though there is a strong Islamic presence especially in the Zongo stroke and few other parts of Madina.

In conclusion, Madina is one of the commercial centers in the district. As a result of migration, urbanization and population increase, Madina has become a commercial centre offering economic opportunities to migrants and indigenes. It is a dormitory town for many workers and traders. With the increasing influx of people and rapid urbanization, huge amounts of domestic and industrial waste are generated. As a result of this situation, waste management presents a challenge and the authorities find it difficult to manage it. In this regard people dump waste indiscriminately in the area.

CHAPTER FIVE

5.1 DATA PRESENTATION AND ANALYSIS

5.1.1 Introduction

The main objective of this study is to examine community attitude towards solid waste management. In this connection, the study explored the following specific issues: (a) the perceptions of Madina residents on solid waste management; (b) modes of domestic management of solid waste; (c) the relationship between local authorities and the community in the management of solid waste; (d) the challenges faced by the Madina Urban Council and private operators in the management of solid waste; (e) community awareness of waste hazards and (f) level of community awareness of waste management policies. In order to address these issues meaningfully, the data are presented under the following categories. (a) social demographic characteristics of the respondents; (b) community perception of solid waste management; (c) domestic management of solid waste; (d) solid waste problems in the communities; (e) the state-community relationship in the management of solid waste; (f) local knowledge of the effect of improper management of waste on health and on the environment; (g) local knowledge of bye-laws on solid waste management.

5.1.2 Socio-Demographic Background of the Respondents

The essence of socio-demographic features of a given sample to the understanding and analysis of data collected is very critical in any sociological study. In the first place, they present a picture of the character of respondents under study. This is in harmony with the Marxian aphorism that a person's social position determines his or her level of consciousness. In analyzing the data on the socio-demographic characteristics of

respondents, the focus is on the sex and age distribution of respondents, their level of education, marital status, occupation and religious affiliation. The belief is that these variables may influence peoples' attitudes towards waste generation and management.

5.1.3 Sex of respondents.

Sex as critical demographic characteristic was taken into consideration because it is an important variable in most social survey (Kumekpor 1999). Generally, the respondents of this study were residents of Madina and officials. Both male and females were interviewed because both relate to waste. However, more females were interviewed than males because of the fact that in traditional societies, women are assumed to be homemakers who manage most of the waste generated at home. This traditional role of women stems from the process of socialization where young females are made to sweep daily, especially early in the morning and then manage the waste generated. To support this view, Obirih-Opareh (2002) notes that in most traditional Ghanaian households, and particularly in poor and middle-income households, women's daily chores include sweeping of the house and its immediate surroundings.

At the household level, 300 respondents were interviewed. Out of this number, 200 were women and 100 were men. Zurbrugg and Ahmed (1996) note that as far as waste management is concerned, women are the key community members, responsible for maintaining a healthy and clean household. In addition, they are directly affected by inadequate solid waste management at the household level. This explains the overrepresentation of women in the sampled population.

5.1.4 Age Distribution of Respondents

Age is one of the most important variables on which information is collected in all censuses and surveys. It is a basic demographic characteristics of individuals which are highly correlated with most population phenomena such as fertility, mortality, migration and socio-economic characteristics of the population (Ghana Statistical Service 2005). According to Ghana Statistical Service (2000), the national population in general is quite young. About 5 out of every 10 persons are less than 20 years of age while about (69%) of the population is under 30 years. Children (under 15 years) account for 44% of the total population whereas older persons (65+) account for only 5%. This age structure implies a dependency ratio of 96, which means that on average, each person of working age (15-64) has one additional person to support.

Table: 2 Age Distribution of Respondents

Age in Completed Years	Frequency	Percent
18-22	20	6.7
23-27	30	10.0
28-32	40	13.3
33-37	60	20.0
38-42	20	6.7
43-47	40	13.3
48-52	20	6.7
53-57	20	6.7
58-62	30	10.0
63+	20	6.67
Total	300	100.0

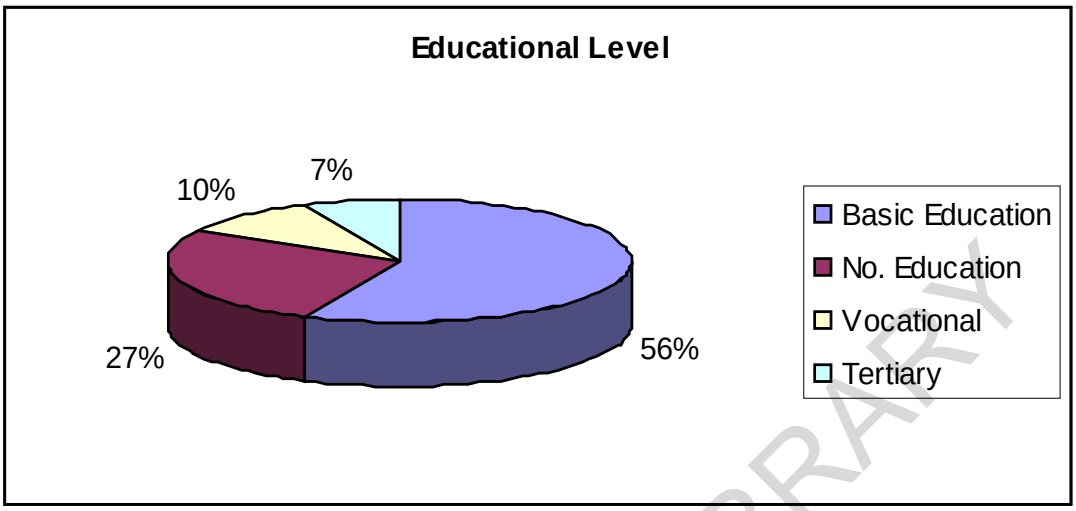
As Table 2 shows, Madina similarly, has a young population. This is to be expected of a migrant settlement. The study revealed that a greater number of respondents (20%) were between the ages of 33-37. Only 6.7 percent were 60+. This suggests that most of the

people in Madina are young and strong enough to engage in economic and other activities. It is, therefore, not surprising to observe a lot of young traders selling in the market and on the street. Besides, during data collection, it was observed that most of the squatters are in their youthful age.

5.1.5 The Level of Education of Respondents

The educational background of respondents was investigated because it is a general belief that one's educational background influences one's perception and attitude towards a phenomenon. As far as solid waste management is concerned, education may go a long way to influence one's attitude. According to UN report (1999) "education and information about environmental problems are fundamental precondition for successful environmental policy". Education, therefore, constitutes a fundamental cornerstone for societal development. However, available evidence suggests that in Ghana, education is not accessible to all. (Ghana Statistics Service 2005). The pie chart below illustrates the educational level of respondents.

Fig. 1: Educational Level of Respondents

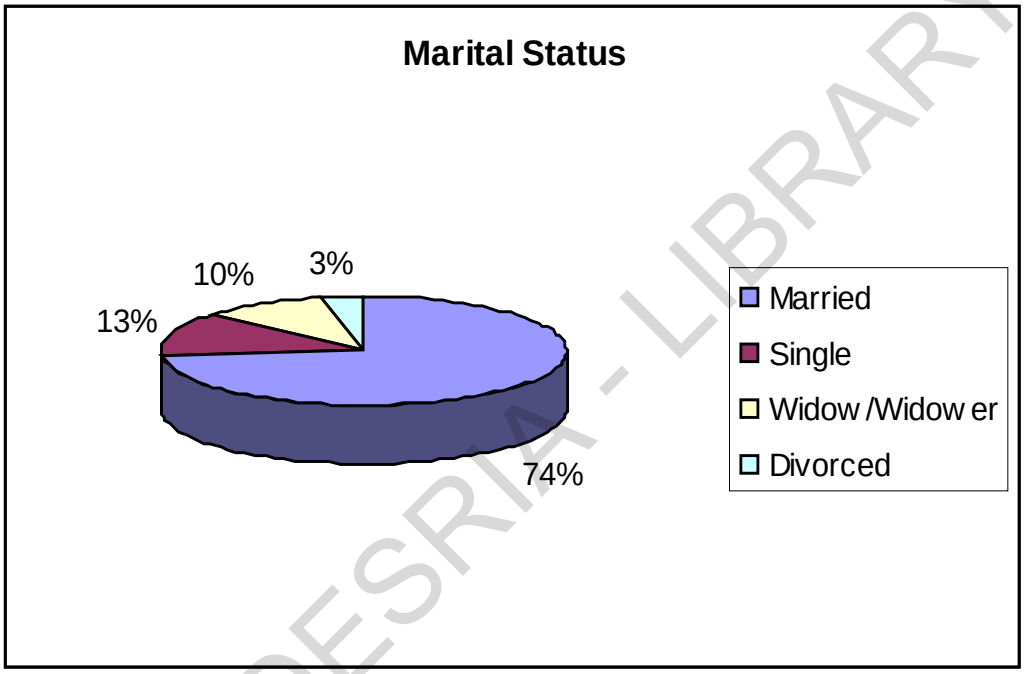


The data presented that a higher proportion of the respondents (56%) have attained basic education. Only 7% have attained tertiary education while 27% had no education. Interestingly, those who have basic or no education were mostly women who constitute the majority. According to Ghana Statistical Service (2000), there is a marked contrast between females and males in levels of educational attainment. For instance, more than twice as many females as males (2.4 million as against 1.1 million) have never been to school. In contrast, only half as many females as males have secondary or higher qualification. Dolphyne (1991) notes that women's education has always lagged behind that of men in all African societies. Early marriage and teenage pregnancy have been cited as some of the causes of this disparity. This low level of educational background would no doubt have effect on the peoples' understanding and attitude towards solid waste management.

5.1.6 Marital status of respondents

Marriage is an important institution in Ghanaian traditional society (Nukunya 1992). In Ghana, about half of the population (50.8%) is in such unions (Ghana Statistical Service, 2002). Generally, people who are married with children generate more waste than the unmarried. Figure 2 below illustrates marital status of respondents.

Fig. 2: Marital status of respondents

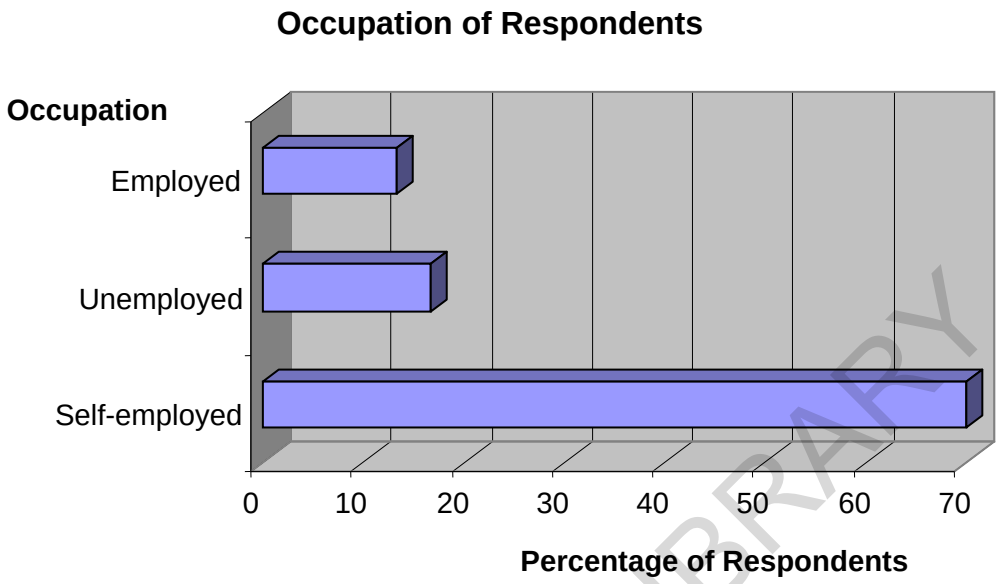


The data above indicate that the majority of the respondents (74%) were in marital relationship. The unmarried constitute (13%). Marriage often goes with responsibilities such as caring for the family that may come out of it. In an attempt to feed the family or clean the environment, a lot of wastes are generated and managed mostly by women. Improper management of waste may pose serious threat to public health and the environment at large.

5.1.7 Occupation of respondents

Occupation deals with the work performed by an individual. According to the 2000 Population and Housing Census Report, the four major occupations in Ghana include agriculture and related work, production and transport equipment work, sales work and professional and technical work. In Greater Accra, trading is the first among other works. This trend is true for the majority of the respondents in Madina, especially women who constitute the majority. The graph below shows occupation of respondents.

Fig. 3: Occupation of Respondents



From the graph above, 16.7% of the respondents are unemployed. The majority of the respondents (70%) are self-employed. These data show that the majority of the people interviewed were self-employed. Women who constitute the majority of the sample size fall in this category. Also, the majority of the respondents who claimed to be unemployed were women. This situation may be connected to the level of their education influencing occupation and income levels. Dolphyne (1991) has established that women the world over suffer injustice and discrimination within the family structure, in employment, in education and access to professional training, among others. In Madina it is common to

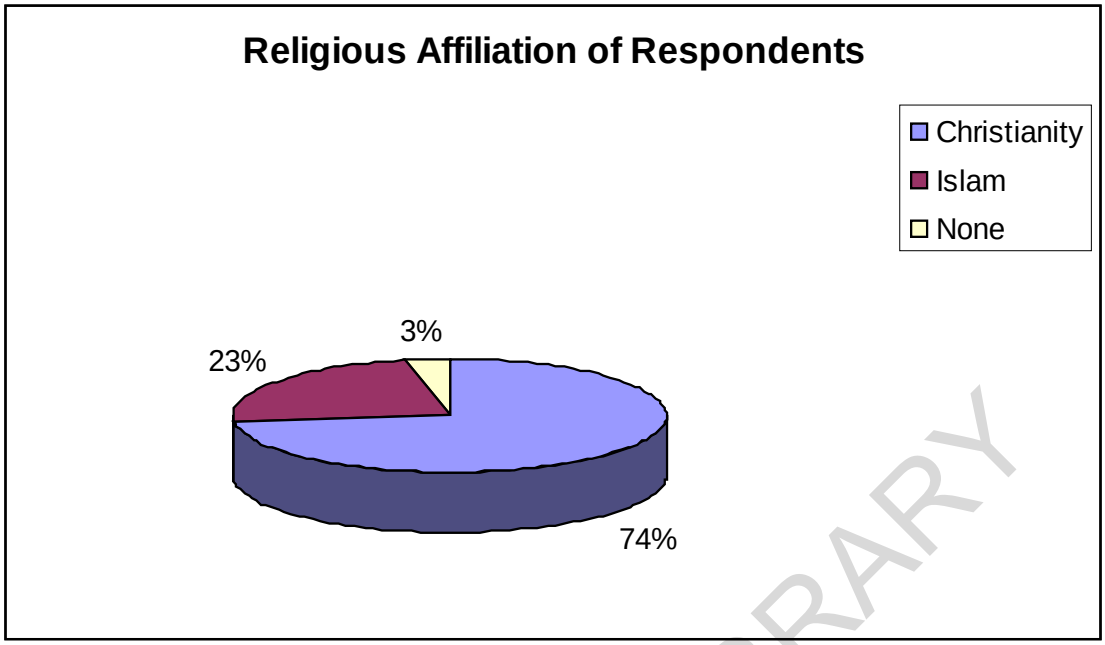
see most women selling in the market, in stores and small kiosk, on the street, among others. The picture 6 below indicates the activities of some self-employed women.

Women Selling in the Madina Market (Picture 6)

5.1.8 Religious Affiliation of respondents

Religion wise, more than two-thirds (72%) of residents in Ghana are Christians. About 12% are Muslims while 15% are traditionalists (Ghana Statistical Service, 2000). The data below indicate that a higher proportion of the respondents (73.3%) are Christians while 23.3% are Moslems. The data indicate that the majority of the respondents were Christians. Figure 4 below shows religious affiliation of respondents.

Fig. 4: Religious Affiliation



On the whole, the above discussions have shown that the majority of the respondents are poorly educated, self-employed, mostly low income earners, married and highly religious.

5.1.9 COMMUNITY ATTITUDES TOWARDS SOLID WASTE MANAGEMENT

In order to address the issue in question, it is important to find out what constitute waste. According to oxford dictionary, waste is defined as any material that is no longer needed. As earlier stated, in the previous chapter, Douglas (1970) describes waste as matter out of place. Although waste is described as something which is out of place or no longer needed, it is beneficial. For instance, in Ghana, some people collect some wastes materials from dumpsites and homes and sell for money. Discarded metal, plastic materials, among others are collected and sold for money.

Madina is an interesting place as far as waste management is concerned. Daily activities begin with early morning sweeping in various residents. This is followed by garbage

disposal. Those who have not contracted out their waste disposal carry the garbage themselves or send their children to disposal sites. At the dumpsite, it is common to see children trailing on heaps of waste in order to dump their waste. After dumping, some put their containers besides them and defecate at the site because of lack of toilet facilities. As they defecate, others also pass by to dump their waste. This practice poses health hazards to the children and the environs. During data collection, it was observed that some parents do send their children to dumpsites. In an interview, a female respondent said, “Mi lɛ, mibɛɛɔ mishia kɛ miyalɛ le mli. Kɛ migbena dɛ, mitsuɔ mibi lɛ tumo lɛ nɔ ni eyatsi jwɛi lɛ eshwiɛ.” (meaning, “As for me, I sweep my house and surroundings every morning. When I finish, I send my child to the dumpsite to dispose of the waste)

In Ghanaian societies, children have certain roles to play. As part of their domestic duties, they are made to dispose of garbage. Assimeng (1999) notes that in the socialization of the young, there are often threats of punishment, if they fail to fulfill their domestic duties. The study revealed that 33.3% of the respondents send their children to dump sites. In his book, ‘Violence against Women and Children’, Cusack (1999) has established that traditionally children are considered the property of the parents and are maintained as liked by the parents. Hence, failure of a child to fulfill socially defined roles or expectations were usually used to describe disobedience. In this regard, children who fail to dispose of waste are considered as such. This, in Cusack’s view, may be described as a form of violence against children. However, in Ghanaian traditional society, domestic role of children is culturally accepted as part of the socialization process. On the other hand, those who have contracted out their waste disposal, keep the

waste in sacks to be disposed of by private operators. About 60 percent of the respondents have contracted out their waste to waste contractors. Picture 7 below shows children dumping garbage at an unapproved site.

Picture 7. Children dumping refuse at an unapproved dump site.

The picture above shows children at an illegal dumpsite disposing of waste. Interestingly, they are made to walk on garbage to the extreme before disposing of the waste. The stench emanating from the site and the filth may lead to diseases. This practice appears to be predominant in low income areas.

5.1.10 Solid Waste Management in Madina

In describing solid waste management situation in Madina, 40 percent of the respondents

were of the view that there is indiscriminate dumping and littering. This, according to them facilitates the activities of houseflies. To support this view, the District Waste Management Officer intimated thus: “Solid waste management situation in Madina is not too good; the door-to-door waste services covers a little above 60 percent and the rest are left to build up and find their way into drains”. The implementation of sanitation bye-laws, effective monitoring exercises and effective education may be necessary in this regard.

According to some of the respondents the problem of waste management situation in Madina is attitudinal; some have good attitude and some do not. Besides, interview conducted at local level identified attitude as one of the critical factors militating against proper waste management in Madina. According to the Environmental Protection Agency (2000), the management of solid waste in urban areas of Ghana is becoming uncontrollable as volumes and heaps of solid wastes are found at public places and at home. During data collection, indiscriminate dumping and littering of waste was observed in most of the communities, especially in drains and on the street. However, most parts of the Residential Stroke and some parts of Zongo Stroke were quite neat.

5.1.11 Reasons for Indiscriminate Dumping of Waste

The study revealed that the majority of the respondents (51%) attributed indiscriminate dumping behaviour to ‘negative attitude’ of people. This, therefore, suggests that the necessary logistics must be provided to sensitize communities to acquire the right attitude towards waste management. For instance, the provision of waste containers at vantage

points, intensive education and the implementation of sanitation laws may go a long way to change people's attitude towards waste management. Obirih-Opareh (2002) observed that the problem of solid waste collection in Accra is not only due to escalating volumes of daily waste generation as a result of rapid population growth with its corresponding pressures on existing logistics, but also to the attitude of residents and officials. This, therefore, suggests that policy makers and other stakeholders of solid waste management should identify attitude as one of the critical factors for ensuring effective waste management. Table 3 below summaries the reasons why people dump waste indiscriminately.

Table: 3 Reasons for indiscriminate dumping of waste.

Reasons why people dump indiscriminately.	Frequency	Percent
Negative attitude	254	51.0
Inability to afford refuse fee	138	27.8
Inadequate dump sites	32	6.4
Lack of education	22	4.4

	Irregular collection of solid waste by contractors.	20	4.0
	Not willing to carry solid waste to dump site	20	4.0
	Failure to register with contractors.	12	2.4
	Total	498	100.0

From table 3 above, the study revealed that the majority of the responses 51% identified negative attitude as one of the major reasons for indiscriminate dumping while 27.8% associated the problem to high refuse fee. Sociologically, people behave according to the dictates of the environment. For instance, if the environment is often clean, drains are cleared and waste containers are placed at vantage points and laws are strictly enforced, peoples' attitude towards waste management may change. Thus, it appears the regulatory agencies have failed to put proper sanitation systems in place to ensure proper waste management. Hence, the negative attitude of the residents may be attributed to systemic failure.

5.1.12 Effects of peoples' Attitude on solid waste management

Improper management of waste may have a telling effect on public health and the environment at large. For instance, the dumping of waste in drains and the irregular collection of solid waste may lead to the breeding of mosquitoes, air pollution and other related health problems. Gottinger (1991) established that waste problems are just as serious in big cities of developing countries and are intricately interwoven with the problem of hygiene and public health. Picture 8 below shows computer and other waste piled in Agbobloshie Market in Accra.

(Computer and other) Waste in Agbobloshie Market (Picture 8).

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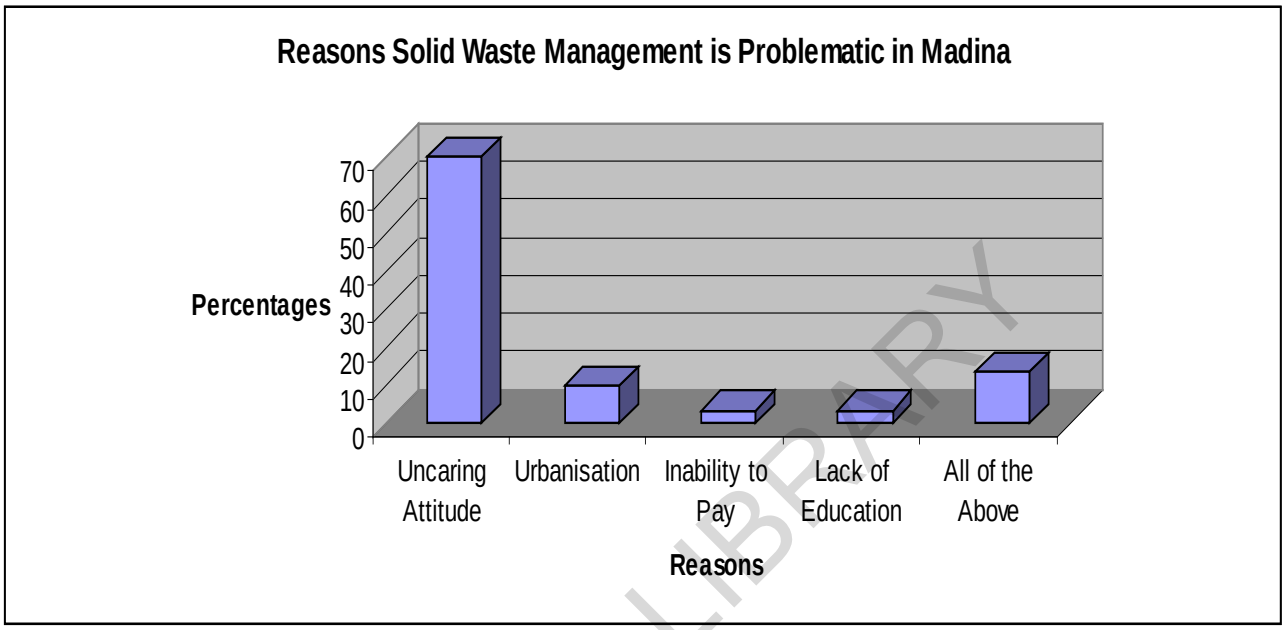
Data was collected on respondents' views of the effects of indiscriminate dumping of waste. Interestingly, 66.7 percent of the respondents were of the view that indiscriminate dumping of waste leads to the spread of diseases while 16.7 percent of the respondents were of the view that it leads to the breeding of mosquitoes. Clearly then, most of the respondents identified diseases as important consequence of indiscriminate dumping of waste. This, therefore, suggests that most of the respondents are aware of the health problems posed by indiscriminate dumping of waste. The above knowledge should encourage communities to manage waste properly. During field work, the researcher observed some of the effects of indiscriminate dumping of waste. For instance, in areas

where wastes have been dumped in drains, waterways were blocked preventing the free flow of liquid waste. This situation produces unpleasant miasma in the environment.

The study also revealed that about 70 percent of the respondents attributed waste management problems in the community to uncaring attitude of people. In an interview, one of the respondents said," Sɛ nnipa angyae me mfa ho, suban a bɔɔla haw bɛdɔɔso wɔman yi mu efirisɛ aban nko ara ntumi nhwɛ bɔɔla asɛm". (meaning, if people fail to put a stop to their uncaring attitude, waste management will continue to pose problems because government alone cannot manage the waste). This 'I- don't- care' attitude is not seen in rural communities where communities are owned by the inhabitants. However, in many urban areas in Ghana, it appears most people think that the city and its environs including wastes are owned by the government and should therefore be managed by her alone. It is, therefore, not surprising that Accra metropolis is saddled with enormous waste management problems coupled with indiscriminate dumping of household waste into open spaces, drains and water bodies (Obirih-Opareh 2002). In an interview with an official of the District Waste Management Department, he remarked that all manner of people including households, private operators, illegal truck pushers, sellers at the road side, among others appear to have negative attitude towards solid waste management. This view was also supported by an official of the District Environmental Health and Sanitation Department. Domfeh (1996) observed that uncooperative attitude of people is one of the problems of inadequate refuse disposal mechanism in the Accra Metropolis.

The graph below summarizes the reasons why solid waste has become problematic in Madina.

Fig. 5: Reasons why Solid Waste Management is problematic in Madina



The graph above indicates that the majority of the respondents have identified uncaring attitude as the major cause of waste problems in Madina. This attitude may be attributed to urbanization. For instance, it appears most people in the urban environment do not own the community because it is assumed that it belongs to the government and do not care much about it. Durkheim identifies anomie (lawlessness) as a characteristic of urban environment. (Slattery 2003). However, in rural environment, there is order and members tend to keep the environment clean. During data collection, negative attitude of some individuals and communities were observed. It was common to see food vendor selling food to customers just close to choked drains. During an informal interview with some iced water sellers, they explained why they put waste on the street. In the words of one vendor ***"We pay money to the assembly. So they should use it to clean the street and***

lorry parks as well as the communities". This is a negative attitude because the fact that one pays tax to government does not permit one to throw waste indiscriminately. However, failure of state agencies to perform may lead to negative attitude. Hence proper structures put in place to deal with waste problems are necessary in this regard. This negative attitude of some people in Madina is evident on the street, road sides, bushes, lorry stations and in some communities.

5.1.13 Domestic Management of Waste

With regard to solid waste management at home, the study revealed that the majority of the respondents (83.3%) keep solid waste in sacks while only 16.7 percent keep the waste in plastic containers. Interestingly, the use of sacks was common to both the Zongo Stroke and the Residential Stroke. However, 16.7 percent of the respondents who claimed to use closed plastic containers were from the Residential Stroke. This, therefore, suggests that most of the respondents cannot afford proper plastic containers. The price of plastic container ranges between GHC 10 and GHC 15 (US$ 10.3 and US$15.45).

The use of sack for the storage of waste may increase the activities of flies, causing an outbreak of certain diseases. Besides, the stench and leachet (liquid from waste) emanating from the waste as a result of the use of sacks is nuisance to public life. Ideally the appropriate container which should be used to keep garbage should either be closed plastic container or galvanized container. Earlier studies conducted by Benneh et al. (1993) and Obirih-Opareh (2002) revealed that in high income areas, people tend to use appropriate containers. For instance, Obirih-Opareh observed that in the high-income areas, households use plastic containers with lids to keep waste properly stored away

from flies. However, in some poor-income areas, all manner of containers such as old buckets, broken baskets, and wooden and metal boxes are used. This, in his view, may cause animals to scatter the waste on the ground as they search for food. This may complicate the waste problem. During data collection, especially in the Zongo Stroke some of the wastes were exposed to livestock. This, therefore, suggests that most of the respondents do not have enough education on proper waste management systems at home.

Concerning the final disposal of waste, 60 percent of the respondents indicated that their wastes are collected by private operators. About 36 percent said they deposit the waste at refuse dump themselves. However, significant numbers of people in Madina have recognized the need to contract out their waste disposal to private operators. However, a private operator intimated that even though many people have contracted out their waste disposal, some customers have become debtors to the contractor. Sometimes, when the debtors move to another community the contractor finds it difficult to locate them. This means that some customers are not able to pay for the service and this may be due to their low level of income. In an interview, a respondent lamented: “Sika a bɔɔla contractor fo gyegye no so dodo, nti yɛntumi ntua. Ewɔ sɛ aban hwɛ ma wɔte so ma yɛn. (meaning, the amount charged for refuse disposal is high and so the government should see to it that this is reduced for us). The study revealed that the amount charged per house ranges between GHC 6 and GHC 7 (US$ 6.18 and US$ 7.21) per month.

Individuals who have not contracted out their waste resort to the use of communal storage containers and unapproved dumpsites in their neighbourhood. Problems associated with

the use of communal storage containers and dumpsites include, sending children to dumpsite, thereby exposing them to filth. For instance, in the Zongo Strokes some residents complained of inadequate number of central waste containers causing children to cross the busy road to where waste containers are available. These children are thereby exposed to filth which may endanger their health. Besides, children who cross the road to access waste containers are exposed to vehicular accidents. The constant dumping of waste at dump sites without proper management poses serious problems to the environs. According to the Environmental Health Officer of Madina Urban Council, most of the dumpsites in Madina are unapproved and therefore are not managed. Picture 9 on the next page shows uncollected waste in Madina Market.

Overflowing Solid Waste Container, Madina Market (Picture 9).

The study also show that the majority of the respondents (83.3%) have toilet facility at home while (16.5%) do not have the facility but use public toilet or neighbour's toilet. According to laws relating to tenancy, landlords must provide toilet facilities at home. However, according to the District Planning Department, some landlords in Madina have converted toilet facilities in their homes and rented them out for use as stores. However, some respondents in the Residential Stroke who claimed to have toilet facility (water closet) complained that they are unable to use the facility because of lack of water. A

respondent of the Residential Stroke, lamented, thus: “We normally see faeces wrapped in black polythene bags in drains and this suggests that some of the people within the area have negative attitude towards waste” This indiscriminate dumping of toilet identified in some communities poses serious threat to public health. According to Ghana Statistical Service, (2000) lack of modern toilet facilities seems to be a major problem in Ghana. Information collected on types of toilet used by households show that a fifth of households in Ghana do not have toilet facilities. Only 6% households have access to flush toilet and 28% use Kumasi Ventilated Improved Pit latrines (KVIPs). Therefore, the study indicated that toilet facilities in Madina are inadequate. This has perhaps led to open defecation at unapproved dumpsites. Picture 10 below relates to this situation.

Open Defecation and Indiscriminate Dumping of Refuse (Picture 10).

Solid waste problems identified in the communities were enormous. These includes, the breeding of mosquitoes; irregular collection of waste; irregular visit of sanitary inspectors; irregular disposal of toilet tanks; indiscriminate dumping of waste and choked drains, among others.

Table: 4 Problems in the community towards Solid Waste Management

Waste Problems in Madina community		Frequency	Percent
	Town council inspectors and private contractors are irregular.	139	29.6
	Choked gutters due to improper management of solid waste.	123	26.2
	Indiscriminate dumping of rubbish and toilet wrapped in polythene bags.	44	9.4
	Inadequate central containers leading to indiscriminate dumping.	40	8.5
	Undisposed toilet tanks causing air pollution in the community	33	7.0
	High refuse fee charged by contractors.	30	6.4
	Inability to use toilet facilities due to lack of water.	20	4.3
	Breeding of mosquitoes causing malaria	20	4.3
	Collection of unauthorized monies by dumpsite attendants.	10	2.1
	Leaders in the community are not responsible as far as solid waste management is concerned	10	2.1
	Total	469	100.0

Table 4 summarizes some of the waste problems in Madina. From the table, 29.6% of the responses, constituting the majority identified problems such as irregular collection of waste, irregular visit of sanitary inspectors and inadequate central containers. Thus, the call for more central containers by some of the respondents suggests that they prefer communal dumping using communal containers provided by the district assembly free of charge. The use of communal storage containers is widespread and seems likely to remain a common option for low-income communities (Obirih-Opareh 2002).

Some respondents complained of indiscriminate disposal of toilet in polythene bags. During data collection, indiscriminate disposal of toilet was observed in some communities. In addition, open defecation was observed in an early morning visits to an unapproved dumpsites. Surprisingly, both adults and children living around this site resort to this practice while others pass by them to dump their waste. The incidence of

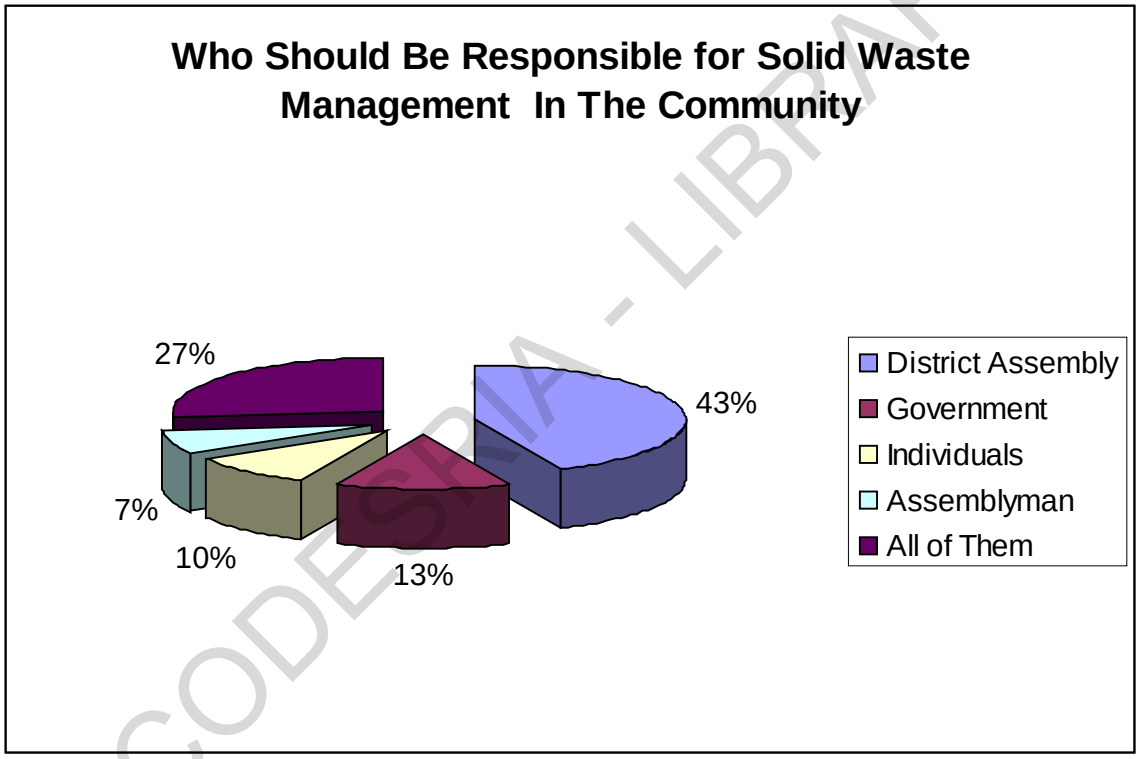
open defecation is common in Madina. The picture below shows open defecation in Madina.

Picture 11: Open defecation at dump site.

5.1.14 Responsibility for the Management of Solid Waste in the Community.

Various views presented by respondents indicate that they expect certain groups of people to be responsible for waste management. While the majority thinks that waste should be managed by the district assembly, others also think otherwise. The chart below emphasizes this point.

Fig. 6: Who should be responsible for the management of Solid Waste in the Community?



The chart above indicates responses regarding the category of people responsible for waste management. From the data, 43% percent of the responses identified the District Assembly. This indicates that the majority of the people were of the view that waste should be managed by the Assembly. In an interview with some respondents, they remarked that the district assembly officials are paid to be responsible for the management of the waste. Some of the respondents also claimed that the district

assembly collect tax from the people hence they must be responsible for waste management. Although according to the Environmental and Sanitation policy, the district assembly is mandated to be responsible for waste management in the district, communities have a crucial role to play to ensure effective management. Similarly, individuals and institutions also have to play their part. For instance, individuals in various communities have to ensure clean environment at home and in the communities. To facilitate this, there is the need to sensitize communities to recognize their roles as far as solid waste management is concerned. The right attitude towards waste management may go a long way to facilitate effective management. In this regard, communities should be encouraged to engage in periodic cleaning through communal labour.

Some respondents argued that government should be responsible for the provision of dump sites and waste containers. These responses bring to the fore the kind of attitude the community has towards solid waste management. It is, therefore, not surprising to observe indiscriminate littering and dumping of waste in most parts of Madina community.

5.1.15 Response of authorities to the calls of communities

The study also indicated that local authorities do not respond quickly to the calls from the communities with regard to waste problems. For instance, 66.7% were of the view that authorities do not respond quickly to their calls. In an interview, one of the respondents said, “Wɔ tumo sane lɛ kɔɔ wɔ kuu gbɛnaa hiɛnyiɛlɔi lɛ ahe.Kɛ wɔtsɛ amɛ tete po le, amɛ foo mli. Shiai ni kuntsei (tiafii) eyimo yɛ mli po lɛ, atsɛɛɛ amɛ yɛ saneyeliwe. Enɛ hewɔ

lɛ, mɔfɛɛmo feɔ nɔ ni esumɔɔ ejaakɛ, akwɛɛ ni aye mla lɛ nɔ." (meaning, 'The authorities do not care about waste problems. Even if we call them they do not come. Households whose septic tanks are full are not summoned to court. As a result, people do what they like because the bye-laws are not enforced). On the other hand, in an interview with some officials at the Madina Urban Council, they lamented that they are not given the necessary logistics and incentives to work effectively. One official said, "Etɔ bere bi a me yi me bɔtɔ mu sika, ansa na matumi akɔ efie mu akɔ hwɛ nkrɔfo haw."(meaning, I sometimes use my own money for transport when embarking on monitoring activities in the communities).

Assessing the performance of workers and authorities with regard to duties performed is recommendable in every social institution. In this regard, respondents were asked to rate authorities in relation to waste management. In rating the effectiveness of authorities towards waste management, the study revealed that the majority of the respondents (46.7%) were of the view that the local authorities are ineffective when it comes to waste management. One of the reasons given to justify this view was irregular inspection. In addition, 10 percent indicated that the authorities have uncaring attitude. Some also said that the involvement of private operators in waste management has made the authorities to delegate their responsibilities to contractors. In an interview, a respondent said, ***"The local authorities demand money from us before they discharge their duties. I once reported a problem to them and they demanded money, but I could not provide it so they refused to attend to the problem".*** In addition, one of the respondents said, "The fact that we see filth on our street tells that authorities are not effective". The above

responses indicate that communities perceive authorities as ineffective in the discharge of their duties.

In an interview, some of the respondents said that sanitary inspectors should go round the communities to encourage people to keep their surroundings clean. However, an Environmental Health and Sanitation Officer at the urban council enumerated a lot of challenges militating against their effectiveness as far as waste management is concerned. He blamed the attitude and behaviour of the people in Madina for making it difficult for the council to manage waste effectively. In addition, logistics such as wheel barrow, shovel and refuse trucks, among others are not available. Other problems include inadequate labourers and lack of incentives. In an interview, one of the sanitary workers of the Urban Council complained that no transport or money is provided for inspection or monitoring exercises. This, according to a sanitary worker, makes it difficult to respond quickly to waste problems in the communities. In addition an officer of the Urban Council complained that lack of transport and funds makes the management of waste difficult apart from peoples' attitude. Hence most central containers become full and the Council finds it difficult to manage them. As noted by Contreau (1982) lack of funds, transport technology and other infrastructure poses a major challenge to waste management in developing countries including Ghana.

5.1.16 Bye-laws and Sanctions

Some of the interim measures taken by the assembly to improve the poor waste management situation in the district include the enforcement of sanitation bye-laws. By this, the assembly hopes that communities may change their attitude toward waste management. However, effective implementation of the bye-laws presents a challenge in Madina. People continue to dump waste indiscriminately in Madina and the law seems to be ineffective in this regard.

In order to handle solid waste management problems, bye-laws have been passed by the district assembly. Section 79 of the Local Government Act, 1993 (Act 462) confers power on district assemblies to apply sanitation bye-laws in their respective districts. In this regard, the Ga East District Assembly has passed sanitary laws in the district. For instance, a person found dumping garbage or defecating at unauthorized areas shall be liable to a fine or three months imprisonment. Despite the existence of these laws, waste management presents a challenge in Madina. It appears the laws lack strict enforcement. Weak institutional structures, poor planning and non-enforcement of physical planning regulation perpetuate waste problems (Obirih-Opareh 2002).

The study revealed that the majority of the respondents (76.7%) are aware of the existence of such bye-laws and sanctions. Notwithstanding this knowledge, indiscriminate dumping and littering are seen in most communities in Madina and it appears the laws and sanctions are not rigorously enforced. Having knowledge about the laws alone is not enough but its applicability is very crucial. Enforcement procedures for offenders of byelaws for waste and sanitation are weak (Obirih-Opereh 2002). It is therefore, necessary for policy makers to ensure effective implementation of policies.

Besides, there is the need for citizens to be conscious of and abide by the laws of the land. The respondents identified the District Assembly and the Urban Council as institution put in place for waste management. Therefore, any intervention in solving waste management problems may be better if it is pursued in collaboration with the District Assembly and the Urban Council.

Data obtained on the effects of improper solid waste management on the environment revealed that all the responses (100%) are aware of the effect of improper solid waste management on the environment. Hence (49.5%) of the responses identified diseases, houseflies and the breeding of mosquitoes as some of the effect of improper waste management. Table 5 below summarizes some of the effects.

Table: 5 Effects of improper solid waste management on the environment

Effects of improper waste management	Frequency	Percent
Yes, diseases, houseflies and mosquitoes	276	49.5
Yes, it brings air pollution.	80	14.3
Yes, the environment becomes untidy and unattractive	60	10.8
Yes, flood as a result of choked gutters	44	7.9
Yes, gutters get choked when there is erosion	40	7.2
Yes, it is an eyesore to tourist	20	3.7
Yes, breeding of dangerous animals leading to the spread of certain diseases	18	3.2
Yes, it causes environmental degradation	10	1.7
Improper management of waste destroys farmlands	10	1.7
TOTAL	558	100.0

Health is very critical as far as the development of a nation is concerned. It is not only

human right issue but also driver of development, and ultimately of wealth creation. (Ministry of Health, 2007). Therefore, there is the need to ensure a clean environment and a proper waste management system to sustain the human resource for national development.

Table: 6 Effects of improper solid waste management on Health

Effects of improper waste management on health	Frequency	Percent
Diseases such as cholera	215	55.8
Breeding of mosquitoes causing malaria	140	36.4
Improper management of solid waste encourages the activities of houseflies transmitting diseases	30	7.8
Total	385	100.0

Table 6 presents respondents' knowledge on the effects of improper waste management on health. From the table, it can be deduced that all the respondents are aware of the effects of improper solid waste management on the heath. Therefore, 55.8% of the responses identified cholera as one of the effects of improper management of waste while 36.4% identified mosquitoes as vectors causing malaria. This knowledge implies that respondents have identified mosquitoes as causal agents of malaria. Ironically, this knowledge should have encouraged communities to change their attitude towards solid waste management for the better. For instance, indiscriminate dumping of solid waste in drains and other places may lead to the breeding of mosquitoes. During data collection, choked drains were observed in most part of the community and this may cause the breeding of mosquitoes in the community. Health problems posed due to filth should

have been adequate enough to cause communities to acquire a very good attitude towards waste management. However, the opposite is the case in Madina.

5.1.17 Suggestions of respondents

The following recommendations were provided by respondents.

- Sanitary workers should educate communities to change their attitude towards solid waste management more especially women who manage the greater part of the waste at home;
- Drivers and labourers of private operators should be educated to prevent the waste or debris from falling off their moving vehicles;
- All should be encouraged to register with private operators;
- Laws should be put in place and enforced to deal with recalcitrant individuals who refuse to manage waste properly;
- Government should employ modern technology to deal with solid waste problems;
- Government should subsidize solid waste management through the provision of waste bins for households;
- Amount charged for waste collection should be moderate and contractors should be advised to be regular;
- Community members should engage in periodic communal labour and
- Central containers should be placed at vantage points to discourage people from littering around.

From the above suggestions, the majority of the respondents suggested that sanitary workers should educate communities especially women to change their attitude towards solid waste management. These suggestions call for the need to sensitize communities to change their attitude. Various interviews conducted by the researcher at the national and local levels suggest that without a change of attitude, policies and programmes designed for the management of waste cannot be effectively implemented.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

This study sets out to examine the attitude of communities towards waste management in Madina, a suburb of Accra. In terms of specifics, the study examined perceptions, level of awareness and challenges faced by residents in solid waste management. It also looked at the mode of domestic management of solid waste and community awareness of hazards. It tried to identify the level of awareness of the residents of Madina to the existence of waste management policies. Finally, it explored the relationship between local people and authorities with regard to the implementation of waste management policies.

As discussed in the earlier chapters and in line with the stated objectives, it is universally recognized that, waste management is very crucial for national development. A clean environment goes a long way to reduce the spread of preventable diseases such as malaria and typhoid, among others. The cost of treating malaria may be reduced if preventive measures are taken. These preventive measures include proper waste management systems and the right attitude towards waste management. Thus, improper management of waste poses threat to health and the environment at large. In advanced countries, as a result of high technology and other economic advantages, the management of waste seems to be effective. In addition, citizens of these countries appear to be conscious and abide by the laws of the land and indiscriminate dumping and littering is prohibited.

In most developing countries including Ghana, the management of waste seems to present several challenges. Studies undertaken and recent media reports indicate that

waste management is problematic in Ghana especially in urban communities. Some of the causes attributed to this menace include lack of funds, transport, technology, infrastructure and above all community attitude. For instance, in Accra, it is common to see filth at public places such as lorry parks, on the street, markets and in drains blocking waterways. This situation is not different from what pertains in Madina, the study area. Solid waste management in Madina presents a challenge and local authorities find it difficult to cope with escalating volumes of waste generated daily and open defecation at unapproved dumpsites is the norm. This situation has serious health implication on the community. For instance, wastes that are dumped in drains may lead to the breeding of mosquitoes and air pollution. It is therefore not surprising that records at Madina Health Centre show that malaria tops all diseases reported at the centre.

Currently, waste management problems in most urban areas in Ghana including Madina, have attracted the attention of all including the government. In order to arrest the situation, the government, through her decentralization policies has mandated the district assemblies to be responsible for waste management. This responsibility has increasingly put financial pressure on the local authorities and coupled with low revenue generation, the district assemblies have become overwhelmed with collection, transportation, treatment and disposal of waste. The Waste Management Department of the district provides services directly or indirectly through private contractors. It appears these services are not reliably provided.

However, of late the activities of a notable private organization, ‘Zoomlion’ appears to be

effective in managing waste in Ghana. Some of their activities include education of the masses through the mass media, the employment of more sanitary workers to clear the city of filth and the distribution of free dustbins to institutions and households for waste management. However, much needs to be done by policy makers to ensure effective management of waste. Ghana's Environmental and sanitation policy which seeks to deal with waste management appears ineffective. The enforcement of sanitation laws is suspect. In this regard, indiscriminate dumping and littering is the order of the day in most urban areas in Ghana and the attitude of people towards waste management compound the problem.

It is against this backdrop that this study examined the attitude of communities towards waste management in Madina, a suburb of Accra. Employing the qualitative method of inquiry, semi-structured open-ended questionnaire was used to elicit responses from respondents. Though the main method for data collection for this study was interviewing, others, such as observation and textual analysis, were also employed to some degree. The case study approach was employed. That is, an in-depth study of some demographic factors within Madina that influence waste management was done.

6.1.1 Findings

The study found out that:

- The general attitude of the Madina community towards solid waste management is negative. This findings relate to the central objective of examining the attitude of communities towards solid waste management
- Most respondents are of the view that waste should be managed by the

government and the district assembly. This second finding shows the perception of madina residents towards waste management as outlined in the second objective.

- Most residents are aware of the effect of improper management of solid waste on health and the environment. Thus, as stated in one of my specific objectives, this finding reveal that residents are aware of hazards caused by improper waste management.
- Most households keep their solid waste in sacks. Thus the mode of domestic management of waste was found out to be keeping waste in a sack.
- Local authorities are not effective in the discharge of their duties as regard waste management. This finding was suggested as a major challenge faced by private operators and hampering the relationship between local authorities and the community in the management of solid waste.
- Communities are aware of the existence of sanitation bye-laws and the institutions responsible for waste management in Madina. This finding was the outcome of the objective set by this researcher to find the level of community awareness of waste management policies.
- Finally this study find out that a sizeable number of households within the area of study do not have toilet facilities. It was found out that 16.5% of respondents do not have toilet facilities in their homes. Though this finding does not fulfill the requirement of any objective, it is highly relevant because it demonstrates the extent to which solid waste management has become a serious environmental issue in the madina area.

Based on the findings above the next task for this researcher is to suggest the necessary recommendations to remedy the present situation. In the following therefore, various recommendations are made to address community attitude towards solid waste management in Madina

6.2 RECOMMENDATIONS

- In order to change community attitude towards solid waste management in Madina, there is the need to reinforce the culture of cleanliness in the various communities. This can be achieved if environmental education in general and solid waste management in particular is made as a core subject in the school curriculum. Hence, formation of environmental clubs may be necessary in this regard. Women (homemakers) who generate and manage most of the waste at home need to be educated especially on safe waste storage practices. Besides, health workers at Madina health centre should also educate patience about the effects of improper waste management on the health and the environment.
- Again it is recommended that officers and sanitary workers at the Madina Urban Council who carry out public education be provided with logistics such as vehicles and incentive to enhance their work.
- Efforts of increasing the enrolment of girls in schools in Madina must be given serious attention. This is crucial because these girls may in the near future become homemakers generating and managing most of the waste produced at home. This has become necessary because the data obtained from the field indicate low level

educational background for the majority of women interviewed in the study area.

- Government should devise a technology which can help manage escalating volumes of waste generated daily in Madina. For instance, recycling and converting waste to energy and composting projects are highly recommended.
- The Environmental and sanitation policy needs to be revised to meet the present sanitation situation. Local authorities and Political leaders should have political will to implement environmental policies especially policies which deal with solid waste management in Madina.
- Additionally, sanitation bye-laws should be enforced in Madina. This calls for more personnel for the department that is responsible for the enforcement of the Assembly bye-laws.
- The department responsible for waste management at the Madina Urban Council must be well resourced and given adequate incentives to motivate its officials to take pragmatic initiatives to deal with waste management.
- The District Assembly may adopt as part of its measures to sensitize communities to organize communal labour periodically. This can be done on pilot basis with award system to motivate communities that adhere to environmental cleanliness in general and solid waste management in particular. The award system may be an annual affair at the community, town, and district, regional and National levels. This may go a long way to change people's attitude towards waste management. On the other hand communities which appear to have negative attitude towards waste should be punished according to the law.
- There is the need to strengthen collaboration among existing institutions which

deal with waste management in Madina. Effective collaboration among these institutions may go a long way to ensure proper waste management systems.

- Since most of the respondents bemoaned the negative attitude of officials in responding to waste management problems, it is also recommended that local authorities need to be sensitized to acquire positive attitude towards waste management. In this regard, individuals who exhibit total commitment towards duties need to be rewarded.
- District Assemblies need to ensure proper supervision of private contractors of waste disposal. Thus, the assembly should ensure that reliable services are provided in the communities. In this regard, ineffective operators should not be entertained.

In conclusion it is also recommended that the purchase of unnecessary second hand items including used computers and other electronic devices that might not last long should be considered. This may help reduce escalating volumes of waste generated daily. It is therefore submitted here that the above recommendations, can be replicated in solving solid waste management problems in urban areas of Ghana.

For future research, it is suggested that scholars can conduct research on the effects of unsafe waste storage practices on health and the environment in suburbs like Accra.

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APPENDIX I

COMMUNITY ATTITUDE TOWARDS SOLID WASTE MANAGEMENT IN MADINA.

Questionnaire

(Households only)

I am an MPHIL student at the Sociology Department, University of Ghana conducting a study on the topic: "Community attitude towards Solid Waste Management".

The findings of this research will be presented to the Department of sociology in a form of Thesis. The data will be confidential and used for statistical purposes only.

You are accordingly not required to give your name. I would be grateful if you would spare me some time to interview you briefly on the topic above:

Thanks a lot.

A. SOCIO- DEMOGRAPHIC CHARACTERISTICS

1. Sex of Respondent I. Male ( ) II. Female ( )

2. Age in completed years:……

3. What is your educational level?

I. Basic ( ) II. Secondary ( ) III. Commercial/ Secretarial ( ) IV Vocational ( ) V. Tertiary ( ) VI. Other specify……

4. What is your occupation? I. Unemployed ( ) II. Self- employed ( ) III. Other specify……..

5. Marital status

I. Single ( ) II. Married ( ) III. Divorced ( ) IV. Widow/ Widower ( ) V. Any other (specify)……..

6. Religion

I. Islam ( ) II. Christianity ( ) III. African Traditional ( ) IV. None ( )

7. How long have you lived in this community…….?

B. COMMUNITY PERCEPTION ON SOLID WASTE MANAGEMENT.

8. How many disposal sites do you have in your community?

I. One-two. II. Three-four. III.Four-five. IV. Other specify…….

9. How often do you use them or how often do generators come for the waste?

I. Daily. II. Four times in a week. III. Twice a week. IV. Other specify……..

10. Who does the disposal of solid waste at home?

I. Child. II. Adult. III..Collected by truck pushers. IV. Private operators.

V. Other specify…….

11. From your view how will you describe solid waste management situation in Madina?

12. How will you rate solid waste collection in your community?

I. Effective. II. Ineffective III. Very effective. IV. Other specify……..

13. Why do you think people dump solid waste indiscriminately in some parts of Madina?

14. Are there any effects from this attitude? What are they?

15. Give some of the reasons why solid waste management has become problematic in Madina.

I. Migration. II. Urbanization. III. Uncaring attitude. IV All of the above. V. Other specify……..

16. How will you describe peoples' attitude towards solid waste management in your community?

I. Positive. II. Negative. III. In between negative and positive. IV Other specify……

17. Please explain your position……

……..

SOLID WASTE MANAGEMENT IN MADINA.

18. Where do you keep the solid waste you generate at home?

I. Sacks. II. Plastic container. III. Polythene bag. IV. Others specify…….

19. How are these waste disposed of finally?

I Sent to refuse dump. II. Collected by private operators. III. Dumped at backyard. IV. Others specify……..

20. Do you pay for the disposal of waste?

I Yes. II. No. III If No why?

21. If Yes how many Ghana Cedis do you pay for this service?

I. GHC 0.50---GHC 1. (US$0.52—US$1.03)

II. GHC 1----GHC 2. (US$1.03---US$2.06)

III. GHC 2----GHC 4. (US$2.06---US$4.12)

IV. Others specify.

22. Do you have difficulties in paying this fee?

I. Yes. II. No.

TOILET DISPOSAL

23. Do you have toilet facility at home?

1. Yes. 2. No.

24. If Yes how do you dispose it when it is full?

I. Collected by private operators. II. Treated with medicine. III. Other specify……

25. If No where do you visit?

I. Public toilet in the community. II. Public toilet outside the community. III. Friend's house. IV. Other specify……..

26. What type of toilet facility do you use?

I. Water closet. II. KVIP. III. Other specify…….

27. What are some of the problems faced in the community towards solid waste management?

28. In your view, what effect does improper solid waste management has on public health in Madina?

29. Whom do you think should be responsible for the management of solid waste in the community?

I. Individuals.

II. District Assembly.

III. Government.

IV. All of them.

V. Other specify……

30. Explain your position. .

31. How do you contribute to the management of solid waste in your community?

I. Individual/Public Education.

II.Calls Urban Councils

III. Radio/Media Attention

IV. Individual participation in cleaning up campaigns.

V. Other Specify……..

32. What contribution does your community make towards the management of solid waste?

I. Public Education.

II.Calls Urban Councils

III. Radio/Media Attention

IV. Communal Labour.

V. Other Specify……..

AUTHORITIES RELATIONSHIP WITH COMMUNITIES TOWARDS SOLID WASTE MANAGEMENT.

33. When it comes to waste collection, how will you rate the authorities?

I. Effective.

II. Very effective

III. Ineffective

IV. Other specify……..

34. Explain your position……

35. Do you report some difficulties faced in the management of solid waste to the authorities?

I. Yes. II. . No.

36. If yes how do the authorities respond to this call?

37. Do the authorities involve the community in decision making when it comes to solid waste management?

I. Yes. II. No.

38. If No why do you think they do so?

39. Are you aware of the bye-laws and sanctions put in place towards solid waste management in the community?

I. Yes. II. No.

40. If yes, mention some of the bye-laws and sanctions.

41. Do you know of some of the institutions put in place to ensure solid waste management in Madina?

I. Yes. II. No.

42. If yes mention some.

43. Are you aware of the effects of improper waste management on the environment?

I. Yes. II. No.

44. If Yes mention some of the effects.

45. Are you aware the effects of improper solid waste management on health?

I. Yes. II. No.

46. If Yes, mention some……...

47. What suggestion can you offer to ensure effective solid waste management in communities?

APPENDIX II

INTERVIEW GUIDE FOR PRIVATE SOLID WASTE MANAGEMENT OPERATORS.

1. How will you describe the sanitary situation in Madina?

2 Why do people throw solid waste indiscriminately in some parts of Madina?

3. How often do you collect waste from homes?

4. Is that enough to manage solid waste?

5. How much do you charge for the collection of solid waste per home in Madina?

6. Are there any conflict between you and your clients?

7. What is the cause of this conflict?

8. How do you resolve this conflict?

9. What are some of the challenges faced in the management of solid waste in Madina?

10. Generally, how will you rate community attitude towards solid waste management in Madina?

11. What suggestion can you give to improve upon solid waste management in Madina?

INTERVIEW GUIDE FOR AUTHORITIES (District Assembly, Urban Council and the Assemblyman/woman)

1. Which department is responsible for the management of solid waste in Madina?

2. How will you describe the sanitary situation in Madina?

3. Why do you think people dump solid waste indiscriminately in some parts of Madina?

4. Are there any effects from this attitude? What are they?

5. What has your outfit put in place to deal with culprits who throw rubbish or litter around?

6. How effective are these measures?

7. What are some of the challenges faced in managing solid waste in Madina?

8. Do your staff have technology and technical skill to deal with solid waste management problems in Madina?

9. Do you have enough persons and resources to manage solid waste in Madina?

10. Are the persons involved in solid management well motivated?

9. How do you consider peoples attitude towards solid waste management in Madina?

10. What are some of the efforts made to ensure effective solid waste management in Madina?

11. Generally how would you rate community attitude towards solid waste management in Madina?

12. What are some of the suggestion you can offer for proper solid waste management in Madina?

INTERVIEW GUIDE FOR AUTHORITIES (Ministry of local government, Rural Development Environment /Environmental Protection Agency.

1. In summary, what is the national policy for solid waste management in Ghana?

1. Which department is responsible for the management of solid waste in Madina?

2. How will you describe the sanitary situation in Madina?

3. Why do you think people dump solid waste indiscriminately in some parts of Madina?

4. Are there any effects from this attitude? What are they?

5. What has your outfit put in place to deal with culprits who throw rubbish or litter around?

6. How effective are these measures?

7. What are some of the challenges faced in managing solid waste in Madina?

8. Do your staff have technology and technical skill to deal with solid waste management problems in Madina?

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11. Generally how would you rate community attitude towards solid waste management in Madina?

12. What are some of the suggestion you can offer for proper solid waste management in Madina?

APPENDIX III

Table 7 Top 10 Causes of Outpatient National Morbidity.

		2007		2006		2005	
	Diseases	**Number of Cases**	**% of Total**	**Number of Cases**	**% of Total**	**Number of Cases**	**% of Total**
1	Malaria	5,270,108	59.2	3,861,348	61.4	3,799,158	61.3
2	Upper respiratory tract infection	920,806	10.3	632,755	10.1	581,323	9.4
3	Diarrhoeal Diseases	539,197	6.1	345,454	5.5	352,384	5.7
4	Skin Diseases	539,197	6.1	341,044	5.4	352,295	5.7
5	Hypertension	505,180	5.7	283,591	4.5	249,342	4.0
6	Home/Occupational injuries	194,695	2.2	167,029	2.7	192,033	3.1
7	Acute Eye infections	288,908	3.2	192,984	3.1	190,293	3.1
8	Pregnancy & Related Complications	188,731	2.1	136,958	2.2	172,253	2.8
9	Rheumatic and joint Diseases	270,296	3.0	183,144	2.9	162,162	2.6
10	Anaemia	185,293	2.1	143,171	2.3	144,606	2.3
	Total Cases	**8,902,411**	**100**	**6,287,478**	**100**	**6,195,849**	**100**

Source: Ghana Health Service, Facts and figures 2008.

The Accra Daily Mail

Published by Doodo Publishers Ltd. P.O. Box CT 4910, [illegible] Vol. 6 No.3 ISSN 0855-2912 Wednesday Jan. 29, 2003 ¢200

No toilet here, please

...Arrest persons who defecate indiscriminately, says Ministry as it prepares to flood Accra with refuse containers

Mr. Kwadwo Adjei-Darko, Minister of Local Government and Rural Development has asked the newly created Sub-Metropolitan Councils to set up sanitation task forces to conduct regular inspection of unsanitary sites.

He said they could engage the services of watchmen and guards in places where indiscriminate defecation and littering were most rampant.

Mr. Adjei-Darko was addressing the Association of Refuse Collecting Containers Manufacturers at a meeting to award contracts for the manufacturing of 150 containers for distribution to the Accra Metropolitan Area.

The contracts were being awarded to the association without going through the normal tender and bidding procedures in view of the urgent need for the supply of refuse containers within the Accra metropolis.

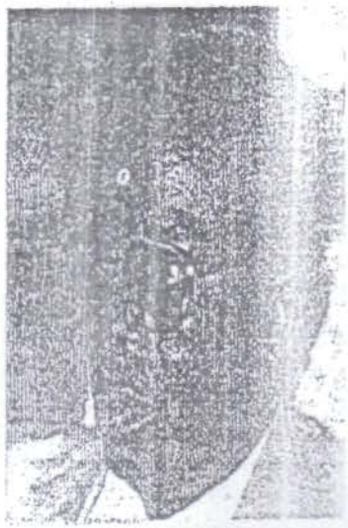
Mr. Adjei-Darko said it was time culprits of indiscriminate littering and defecation were arrested and punished to serve as a deterrent to others.

He said Accra being the nerve centre of Ghana's political, economic and commercial activities, was constantly under pressure from the increasing resident population of about 1.7 million and a daily visiting population of about 500,000.

"The activities of the daily visitors tend to worsen the already deplorable sanitary conditions of the city", he said.

The Minister said no meaningful clean-up

Contd. on page 3



Mr. Kwadwo Adjei-Darko
Minister of Local Government and Rural Development

No toilet here

Contd. from front page

exercise could be attained without adequate provision of large refuse containers at identified sites, hence the order by the Ministry for 1,000 refuse containers from overseas for distribution nation-wide.

Mr. Adjei-Darko said, whilst the ministry was waiting for the supply of the 1,000 refuse containers, it was prudent that the services of the association was sought for the use of about 100 containers immediately.

He said the ministry had put together a team of experts to identify all the unsanitary sites within Accra metropolis and its immediate environs to evolve strategies to address the alarming situation.

Mr. Kwaku Obeng-Mensah, spokesman for the association thanked the Ministry for the opportunity to contribute to the improvement of sanitation within the metropolis.

Food Canola will be

Daily Graphic, Thursday, July 17, 2008.

No pan latrine by 2010

Story: Stephen Sah

THE Supreme Court has ordered the Accra Metropolitan Assembly (AMA) to phase out the use of pan latrines by 2010 and prosecute those who fail to convert their pan latrines into water closets and Kumasi Ventilated Improved Pits (KVIP).

After 2010, the AMA should prosecute anybody who engages any other person to carry human waste in a pan.

The order was part of orders made by the court after Nana Adjei Ampofo, a legal practitioner, had sued the AMA, seeking an order to stop it from allowing the use of pit latrines in homes and the practice whereby human waste was carried by people.

According to the court, the AMA should not grant permits or development plans or structures which did not make adequate provision for water closet or KVIP.

It said the AMA should construct 1500 water closets and KVIP public places of convenience by the end of 2010 and also cause sufficient publicity to prepare all residents of the abolition of pan latrines.

The court commended Nana Ampofo for instituting the case because he would be remembered by history.

High Incidence of Open Defecation in Ghana

More than four million people in Ghana defecate in the bush, open drains, water bodies, or fields instead of using a latrine.

According to the Ghana Statistical Service Multiple Indicator Cluster Survey (MICS) Report for 2006, open defecation is prevalent in all the ten regions. While the national average, according to the report, is 24%, the practice is most widespread in the Upper East Region with about 82% of the people without any form of latrine, followed by the Upper West Region with about 79% and then the Northern Region with about 73%.

Contributing factors

A couple of factors contribute to this negative practice; these include absence of clean household or public latrines and ignorance of the harmful effects of open defecation. It is also a fact in Ghana, that some people simply prefer the bush, the beach, or any open field for the simple reason that those places are more airy and convenient. There are others who do not want to add their shit to those of others in one pit for several superstitious and cultural reasons. Non enforcement of environmental laws is also a major factor.

Harmful effects

Human faeces left in the open fields, bushes or drains generate millions of viruses, bacteria and parasites. Houseflies usually fly between these faeces and the food we eat including fruits. And when we eat these contaminated foods, we have inadvertently eaten our own or other people's faeces! We therefore open ourselves up for illnesses that can even lead to deaths.

Rains also wash away most human faeces left in the open into rivers, ponds, open wells, lagoons and beaches. According to the Ghana Statistical Service (MICS 2006 report), about 19% of the population (nearly 4.2m people) still rely on untreated water from streams, dams, ponds, rivers and open wells for drinking and cooking. They may therefore have been drinking their own or other people's faeces and injecting themselves with germs and diseases.

Can the practice be stopped?

The answer is yes given the fact that it has been possible in some countries where certain organisations and the government focused on ending the practice. Even in some communities in the Afram Plains of Ghana it has been possible for some communities to stop open defecation thanks to interventions by the Afram Plains Development Organisation. Below are excerpts from an article taken from the Global Education Website and we quote:

> "Traditionally, in Bangladeshi villages when people wanted to go to the toilet they went behind bushes, in fields, ponds or on riversides. It was considered acceptable for men to defecate in the open anytime, but women could only relieve themselves in the early morning or after dark without embarrassment. Children could go anywhere as their wastes were considered harmless! ...

Since 2000, Village Education Resource Centre and WaterAid Bangladesh have been helping to make big changes in toileting habits through a Community-Led Total Sanitation programme. In the programme, facilitators would walk around the village with community members, introducing them to the health and environmental dangers of fields being used as toilets. They visited regular toileting sites and broke down social taboos by talking openly about faeces, or 'poo'. There was usually plenty of laughter. Together, they drew diagrams showing that after rain faeces could flow from open sites into ponds, canals and wells and eventually onto cooking utensils after washing, as well as onto food itself through flies. With shame and disgust they realized that they had probably been regularly eating their own – and other people's – faeces.

After one such introduction the villagers of Mosmoil in northern Bangladesh quickly decided to adopt 100% sanitation. It was time, they said, to end the age-old practice of open defecation. They learnt how to make a latrine which confined excreta and prevented faeces contaminating surrounding areas. Within a short time every household in the village had such a sanitary latrine. Villagers pledged to always use their latrines instead of going to the toilet in open areas and to wash their hands straight afterwards...

At school, children learnt about washing hands and the need for all people to use the latrines. They took action with a public shaming campaign. They kept watch, and used flags naming the adults who were still going to the toilet in public areas to embarrass them and encourage them to change their toileting habits...

In 2004, the Government of Bangladesh earmarked 20 per cent of the annual development budget to promote sanitation awareness. In three years the sanitation coverage in Bangladesh surged from 33 per cent of households to over 70 per cent."

Conclusion

These are some of the efforts that have made Bangladesh a global showpiece for sanitation and the country is indeed cited at almost every sanitation conference and in almost every sanitation related article in recent years.

This is just an example of the fact that open defecation-free Ghana is possible. There are other ways through which the practice can be stopped; enforcement of building codes, which according to Local Government Authorities, include a household toilet, enforcement of environmental sanitation laws which prohibit open defecation, intensified public sensitisation and openness in communicating open defecation matters, and of course, increased central, local government and traditional authority interest in the issue.

Citizens should also understand that when we defecate in the open, we eat it back and create a health risk for ourselves. Visitors to the country also laugh at us when they see us dotted along the drains and in the parks defecating.

Source: Water and Sanitation Sector Monitoring Platform (WSMP) Ghana, August 2008

F MADINA SHOWING THE VARIOUS SUB DIVISIONS (STROKES)

T IS THE MAP OF GHANA SHOWING THE LOCATION OF MADINA
3)