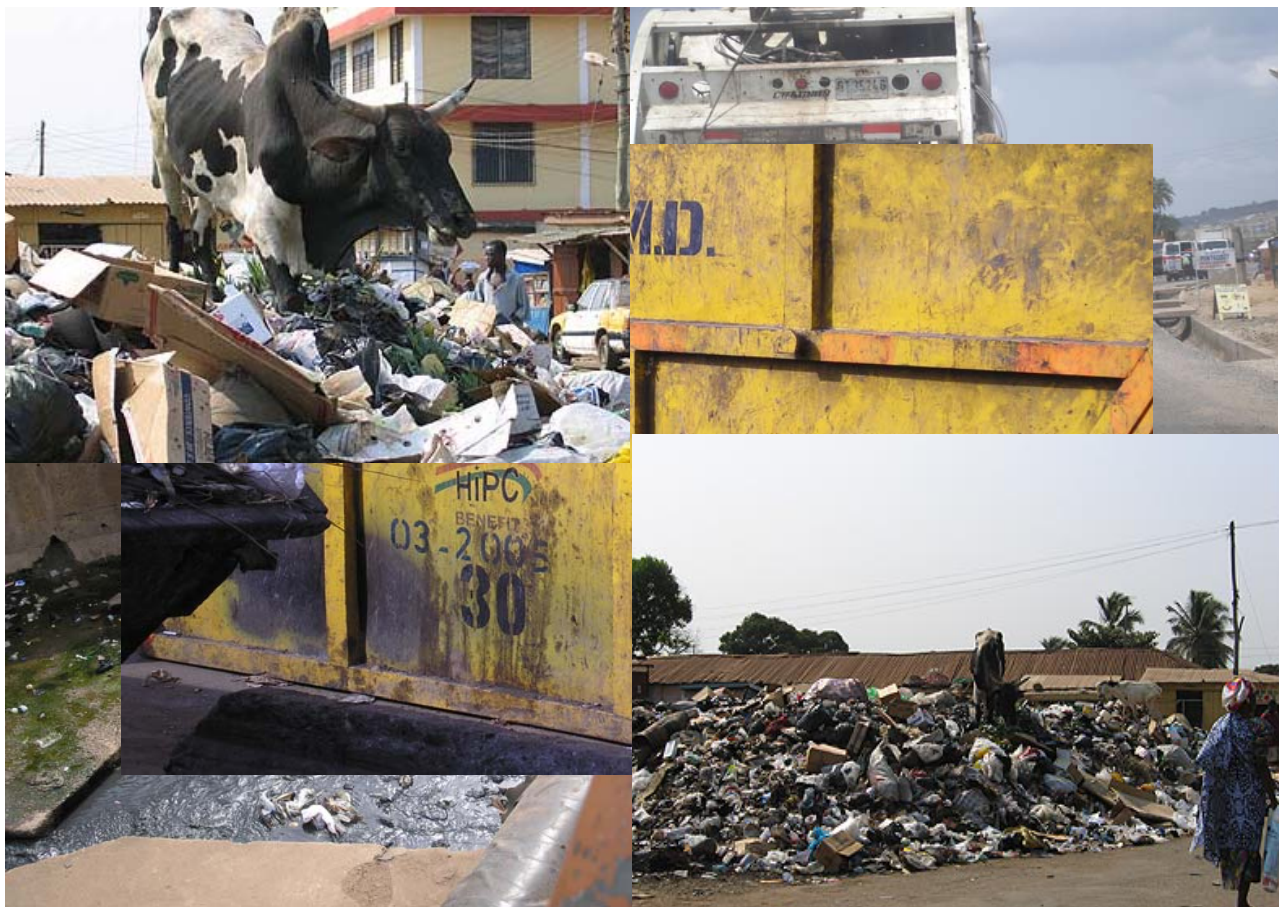




**MASTERS THESIS:  
DEPARTMENT OF DEVELOPMENT AND PLANNING  
MSC PROGRAMME IN ENVIRONMENTAL  
MANAGEMENT**

**THE MAIN HINDRANCES TO THE IMPLEMENTATION OF AN  
EFFECTIVE SOLID WASTE MANAGEMENT SYSTEM IN ACCRA  
AND HOW THESE CAN BE ADDRESSED**



**BY:  
STANLEY KWAKYE ANTWI  
AUGUST 2006**

**SUPERVISORS:  
HENRIK RIISGAARD  
OLE BUSCK**

## Abstract

The increasing solid waste generated in the Accra metropolis that has not received proper management; collection, transportation and disposal has been identified as a major factor contributing to the declining health situation in the area. It has also resulted in other numerous adverse environmental effects. Many policies have been put in place, some of which work directly to affect the situation like the National Sanitation Policy which was agreed upon by parliament in 1999. The aspect of the Policy on SW is supposed to help clear Accra of its waste by the year 2020. Even though the policy was implemented in 1999, only 1200 tons out of the 1800 tons of SW is collected. Identifying the contribution that makes up the 1800 tons, it was realised that households contributed 1170 tons of the total waste. Noting that the remaining 630 tons even though might not receive the best disposal practice is almost always collected from generators premises. This implies that almost all the waste from other sources is collected. Realising that the policies implemented have not solved the waste problem wholly, it was important to find out the main hindrances to the implementation of a system that would help solve the problem and benefits that ensue.

The report concludes that the major problems that have hindered an effective SWM system are poor enforcement and awareness creation, low technological know-how and legislation inadequacies. In trying to affect the problems identified the investigations made reveal that there is need for training of SW managers and street level bureaucrats to discharge their duties with expertise. Creation of awareness through radio, TV and other means creates better understanding amongst public about the proper ways of dealing with solid waste. The unemployed youth if paid would help access the unreached communities and collect waste like they do to bottles and metals and take to a point where trucks can pick up. The report identifies as necessary, the contributions of households' in the formulation and implementation of policies helping them take ownership of the policy and thus contribute to its effectiveness.

### **Dedication**

This piece of work is dedicated to my parents, EVANGELIST SAMUEL YAW ANTWI  
AND GRACE AMOAH

I love you in a very special way that I have written about in these pages.

The whole theory of the universe is directed unerringly to you

Walt Whitman

## Acknowledgements

I wish to acknowledge with thanks the help I received from many people who in diverse ways made it possible for me to write to this paper.

First and foremost, I would like to thank HENRIK RIISGAARD and OLE BUSCK, my supervisors, whose advice, comments, suggestions and encouragements made it possible for me to complete this work. Thank you so much HENRIK and OLE and may God richly bless you, your family and profession.

Also deserving my warmest gratitude are my parents and brothers. EVANGELIST SAMUEL YAW ANTWI (father), GRACE AMOAH (mother), PETERSON AMANFO ANTWI (brother), MATHIAS AMPOFO ANTWI (brother), who gave me the necessary advice, moral and financial support I needed for this work and helping me up to this level in my education. Finally, for your unfailing prayer.

Furthermore I thank all my interviewees, WILLIAM HAYFRON-ACQUAH (Ghana EPA), FRANK KPODO (WMD of AMA), SAMUEL CHINIBUAH (WMD of AMA), KWEKU QUANSAH (ENHSD OF MLGRD), COSMOS B. KAMBOZUL (ENHSD OF MLGRD), LEWIS AGBESIENYALE (MLGRD), REXFORD QUAYE (DFID), EBENEZER QUAYE (GA District Assembly), OSWARLD LARVOE (NADMO), JOHN K.HAGAN (DCCS), DR. JOHN B. K. YABANI (GHS), who contributed immensely to getting information for enriching my work.

When it comes to friends, I am indebted to a lot of people which space will not allow me list all names. But I cannot bring my acknowledgment to an end without mentioning names like MR. and MRS. TAKYI, MR. and MRS. DIKAH, EKUA ABBEY, FARIDA NAKANWAGI, ANN PATRICIA ATIIDO, THERESA ADJAPONG, DANIEL, and all others who have assisted me in one way or the other in my difficult times.

Last but most importantly, I want to thank my Lord who planned it all to begin and end in this way.

Jeremiah 29: 11 says:

**“For I know the thoughts that I think toward you, saith the lord, thoughts of peace, and not of evil, to give you an expected end”.**

Aalborg University, Denmark, August, 2006

---

**Stanley Kwakye Antwi**

## Table of content

Abstract.....	i
Dedication.....	ii
Acknowledgements.....	iii
List of figures.....	vii
List of tables.....	vii
Abbreviations.....	viii
1. Introduction... ..	1
1.1 Introduction.....	1
1.2 Problem Formulation .....	4
1.3. Objective of study.....	7
2. Research methodology.....	8
2.1 Data collection .....	8
2.2 Research design and data Analysis.....	12
2.3 Structure of the report .....	13
3. Theoretical approach.....	16
3.1 Introduction.....	16
3.2 Implementation theory .....	18
3.3 Integrated Implementation Model .....	19
3.4 Logical framework analysis.....	22
3.5 Theoretical approach closure .....	24
4. Literature Review.....	25
4.1.1 Solid waste generation and composition .....	27
4.1.2 Waste collection and transportation.....	29
4.1.3 Solid waste treatment and disposal.....	30
4.1.3a Recycling and composting .....	31
4.2 What is the result of not managing solid waste effectively? .....	32
5. Field survey... ..	35
5.1 Introduction.....	35
5.2 The result of the survey .....	35
5.2.1 Respondents reason for choosing the type of disposal practice.....	36
5.3.2 Respondents inputs in the formulation and performance of sanitation policies .....	41
5.3.3 Respondents' awareness of SW bylaws and enforcers.....	42
5.3.4 The extent to which the waste situation affects respondents' daily lives .....	43
5.3.5 Respondents' inputs that will help affect the waste situation.....	43
6. Discussion.....	46
6.1 The SW regulation process .....	46
6.1.1 Formulation of policies.....	48
6.1.2 Implementation of Policy.....	49
6.1.3 Implementation results.....	53

6.2 Reflections on the model .....	56
6.3 Possible ways of realising an effective SWM system .....	57
6.3.1 Formulation of the policy .....	57
6.3.2 Implementation of the policy .....	58
6.3.3 Implementation results.....	59
7. Overview, conclusions and perspective.....	61
7.1 Overview of the report.....	61
7.2 Conclusions.....	62
7.3 Perspective .....	66
References.....	67
Appendices.....	71
Appendix A: Interviews.....	71
Interview with Kwaku Quansah and Cosmos B. Kambozul .....	71
Interview with Lewis Agbesienyale .....	75
Interview with Samuel Kpodo and Frank Chinbuah .....	77
Interview with William Hayfron-Acquah.....	81
Interview with Boss Akolobilla, Bawa Micheal and Nashiru Azumah.....	83
Interview with Rexford Quaye.....	84
Interview with Ebenezer Quaye.....	84
Interview with Oswarld Larvoe.....	86
Interview with John K. Hagan. ....	87
Interview with Dr. John B. K. Yabani .....	89
Appendix B: Questionnaire for households.....	91

### List of figures

Fig. 1.1: Overflowing central waste container.....	4
Fig. 1.2: Unchanged waste containers resulting in waste being dumped.....	4
Fig. 1.3: Waste blocking drain.....	4
Fig. 1.4: Waste springing out a week after cleanup exercise.....	4
Fig.3.1: The integrated implementation model (Winter, 2003).....	20
Fig. 4.1: Solid waste management system in Accra.....	26
Fig. 5.1: A map showing the 7 communities (black spots) that were selected from the Accra metropolitan area.....	36
Fig 5.2: Disposal practices exhibited by the 20 households of the planned settlements.....	37
Fig 5.3: Disposal practices exhibited by the 50 households of the unplanned settlements.....	38
Fig 5.4: Disposal practices exhibited by the 625,746 residents of Accra, GSS (2002).....	38
Fig. 5.5: Comparison of disposal practices from survey and GSS.....	39
Fig. 5.6: Distribution of households' (planned and unplanned) reason for adopting a particular practice.....	41
Fig. 5.7: Distribution of households' (planned and unplanned) awareness of SW bylaws and enforcers.....	42
Fig. 5.8: Distributions of respondents' inputs that will help affect the waste situation.....	44
Fig. 6.1: Ghanaian waste regulatory system.....	47
Fig. 6.2: The links and feedback mechanism (adapted from integrated implementation model).....	55
Fig. 7.1: Some of the hindrances to the effectiveness of SW policy.....	63

### List of Tables

Table 2.1: List of the people interviewed .....	9
Table 4.1: Waste composition for Accra by percentage weight (Fobil et al, 2002) .....	28
Table 4.2: Volume and tonnage of waste collected in Accra, (WMD, 2006) .....	30
Table 4.3: Waste recycling in Accra (Fobil, 2001 in EPA et al, 2002) .....	31



### Abbreviations

AMA	Accra Metropolitan Assembly
APA	American Psychological Association
CBO's	Community Based Organisations
DFID	Department for International Development
DKK	Danish Kronner
EHSD	Environmental Health and Sanitation Division
EPA	Environmental Protection Agency
GHIS	Ghana Health Insurance Scheme
GSS	Ghana Statistical Services
HIPC	Highly Indebted Poor Country
ibid	Ibidem (in the same place in the same book)
IETC	International Environment Technology Centre
LFA	Logical Framework Analysis
LFA	Logical Framework Analysis
MES	Ministry of Environment & Science
MLGRD	Ministry of Local Government and Rural Development
MoH	Ministry of Health
NADMO	National Disaster Management Organisation
NESPCC	National Environmental Sanitation Coordinating Council
NGO's	Non Governmental Organisations
PPP	Polluters Pays Principle
SW	Solid Waste
SWM	Solid Waste Management
TV	Television

UNEP

United nations Environment Programme

WCs

Waste Contractors

WMD

Waste Management Department

# 1. Introduction

## 1.1 Introduction

Municipal solid waste management (SWM)<sup>1</sup> adds up to the numerous problems of many cities in the developing world. Economic development, urbanisation and improving living standards in cities, have led to the increase in waste generated. Most cities in developing countries do not collect the totality of solid waste (SW) generated; typically one to two thirds of the SW generated is not collected at all (World Resources Institute, et al., 1996), and out of the percentage that is collected, only a fraction receives proper disposal. The uncollected SW which is often dumped chaotically in the streets and drains welcomes the early visitors of the day. As a result, improper SWM represents a source of water, land, and air pollution, poses risks to the health of humans and animals, cause serious economic and welfare losses, and causes obnoxious conditions that degrades the biosphere as a whole (UNEP-IETC, 1996 in Zurbrugg, 2002).

These issues of concern which are a result of improper management of SW in most cities of developing countries are not far from the situation in Accra, Ghana. Uncollected SW coupled with the different awful disposal practices is an urgent health concern for the residents of the Greater Accra Region. SW swallows up Accra's disposal systems and consequently has negative impacts on the populace.

Throughout the city, numerous central waste containers can be seen brimming over with trash from several days of no collection (fig.1.1 and fig. 1.2). The situation is worsened by the fact that, out of the 1800 tons of waste generated daily by a population of about 3 million (Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006), no more than 66% of this is collected and disposed off at the Oblogo dumpsite and the Nungua composting plant (ibid). However many, including the Ghana Environmental Protection Agency (Ghana EPA) and Ministry of Local Government and Rural Development (MLGRD) (2002), points out that with the percentage of the population that have not been reached by waste services, waste collection rate is around 55%.

---

<sup>1</sup> Solid waste management encompasses the collection, transportation and disposal of household refuse, institutional waste, street sweepings, commercial wastes as well as construction and demolition debris to reduce their effect on human health, environment and local amenity (Ministry of Local Government and Rural Development, 1999). The study will not concentrate on imported waste from electronic, electric equipment.

As a result, residents dispose off the remaining volume directly into water sources or drain structures (fig. 1.3) with the expectation that rains will eventually carry them away (Quansah, K. and Kambozul, B.C., personal communication, 28<sup>th</sup> February 2006; Hayfron-Acquah, W., personal communication, 28<sup>th</sup> February 2006).

The repercussions of these dumping practices are perilous to human health as water sources and drains are contaminated and blocked by waste materials (fig1.3). Since waste doesn't only contribute to the spread of diseases but exacerbates flooding by clogging drains and canals, Accra's undulating topography combined with the amount of SW disposed into drains and canals results in one of the major perennial problems in the Accra region, flooding. Annual flooding compounds the health problems partly by the limitations of infrastructure in Accra (Larvae, O., personal communication, 13<sup>th</sup> February 2006). Again, refuse accumulation draws vermin and allows pools of water to stagnate. This becomes a favorable environment for breeding disease carrying organisms that spread disease such as malaria, diarrhea, intestinal worms and upper respiratory tract infections which are among the frequent health problems reported in the region (Yabani, J. K., personal communication, 15<sup>th</sup> March 2006; Quansah, K. and Kambozul, B.C., personal communication, 28<sup>th</sup> February 2006). Malaria which is transmitted by mosquitoes is the leading cause of death in Ghana. In Accra, it has accounted for an average of 42% of outpatient visits over the years (Yabani, J. K., personal communication, 15<sup>th</sup> March 2006). According to Dr. Yabani, the Metropolitan Health Director of the Ghana Health Service, the top 10 diseases taking the lives of most of the populace are attributed to poor sanitation which is preventable. This means that if the issue of sanitation which relates more to SW is addressed, it will only be the 'rich mans' diseases like hypertension etc left (Quansah, K. and Kambozul, B.C., personal communication, 28<sup>th</sup> February 2006; Yabani, J. K., personal communication, 15<sup>th</sup> March 2006; Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006).

The effects of flooding and diseases caused by poor sanitation including SW results in a lot of resources being used by the National Disaster Management Authority (NADMO), the Ministry of Health (MoH) and other Non Governmental Organisations (NGO's) to deal with the situation. For example, after a flood an amount of about 4.6 million cedis (about 3600 DKK) is spent on items given to heavily affected households in the Accra area by NADMO (Larvae, O., personal communication, 13<sup>th</sup> February 2006). Again about 6 billion cedis (about 4.7 million DKK) is spent yearly within the Accra Metropolis

on health of the populace not taking into account personal emolument of health staff (Yabani, J. K., personal communication, 15<sup>th</sup> March 2006).

All these concerns have been as a result of the ever increasing population of Accra which is at a rate of about 4.4% annually, and is expected to double in the next 20 years (Ghana Statistical Services, 2002). Since a growth in population implies an automatic/proportional increase in solid waste, the Waste Management Department (WMD) of the Accra Metropolitan Assembly has not been able to cope with the ever increasing solid waste being generated across the region (Hayfron-Acquah, W., personal communication, 28<sup>th</sup> February 2006). As a result of this, in 1999 the collection and transportation of solid waste was privatised and contracted out to a number of waste contractors (WCs) in the Accra metropolis (Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006). The collection rate has improved in the well-planned higher income areas of the city which makes up 20% of the population (Agbesienyale, L., personal communication, 23<sup>rd</sup> February 2006; Hayfron-Acquah, W., personal communication, 28<sup>th</sup> February 2006). But since the remaining 80% of the population lives in the squatter settlement (ibid), where SW is increasingly uncollected given rise to bad disposal practices, there has not been a great change in SWM in the entire city (ibid).

Mr. Stanley Nii Adjiri Blankson the New Mayor of Accra, since his appointment has expressed a lot of concern about the environmental state of the capital city of Ghana, Accra. Some of his efforts have been organising clean-up exercise in and around Accra which costs the Assembly approximately 1.8 billion cedis (About 1.4 million DKK) every month to clear SW (Quansah, K. and Kambozul, B.C., personal communication, 28<sup>th</sup> February 2006; Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006; Lamptey, 2006). The effort of the Mayor has not yielded positive results since the same problem of SW returns a week after the clean up (fig. 1.4) and conditions of SW related health issues in Accra is not getting any better (Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006; Yabani, J. K., personal communication, 15<sup>th</sup> March 2006; Lamptey, 2006).

In an interview, Dr. Yabani, the Director of the Metropolitan Health Directorate pointed out that the metropolis has just recorded a cholera epidemic which claimed 15 lives out of 1,529 people admitted for treatment and it is attributed to the improper SWM situation. Given these problems, proper SWM is a necessity and not an option for the government,

metropolitan Assembly and the populace as a whole. Figure 1.1 to 1.4 shows a part of the mass flow to the problem.



**Fig.1.1: Overflowing central waste container**



**Fig.1.2: Unchanged waste containers resulting in waste being dumped**



**Fig.1.3: Waste blocking drain**



**Fig.1.4: Waste springing out a week after cleanup exercise**

## 1.2 Problem formulation

SW forms a significant component contributing to the health situation of the people of Accra and the larger environment. Out of the 1800 tons of SW generated per day 1170 tons comes from households (Kpodo, S., and Chinbuah, F., personal communication, 1<sup>st</sup> March 2006). The remaining 630 tons comes from industries, hospitals, schools, construction sites and other sources (ibid). Almost all the waste apart from that of households is collected (ibid). This implies that taking the collection rate of 1200 tons

into consideration only 570 tons of household waste is collected. The uncollected household SW which is about 51% has had an adverse health effect on the populace of Accra and its environmental quality. Figure 1.1 to 1.4 supports the preceding point that household waste is a major contribution to the health concerns.

Identifying how improper management especially of household SW has affected mainly the health of the populace and the environment, an effective SWM system is essential to rescue the situation.

Effective/Effectiveness according to Gasper (2004) is *“the degree of or success in achievement of a higher level of objective: output, purpose or goal, not considering the cost of inputs used”*. Relating this definition to the study, an effective SWM system will be a system that will address the remaining 51% of household SW through better collection, transportation and disposal means. An effective SWM system will thus lead to some positive attributes to human health, environment and the economy. The system will result in an improved health of citizens (Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006; Yabani, K., B., J, personal communication, 10<sup>th</sup> of March 2006), increase in individual utility level (Laxminarayan, 2004) and a change in environmental quality (Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006). The direct payback to health includes the direct health impacts due to reduced contact of vulnerable populations with SW in streets and reckless dumping. In addition, reduced treatment for illness such as malaria, diarrhea, and cholera avert health costs and enhance productivity of the population (Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006; Yabani, K., B., J, personal communication, 10<sup>th</sup> of March 2006). Sanitation including SW contributes to about 65% of the health reported cases in Ghana (Agbesienyale, L., personal communication 23<sup>rd</sup> February 2006; Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006). This makes it important to put an effective SWM system in place to help the present situation. If an effective SWM system is not put in place, many argue that even the Ghana Health Insurance Scheme (GHIS) will suffer since more and more people are getting sick everyday as a result of SW issues and general sanitation (Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006; Kpodo, S., and Chinibuah, F., personal communication 1<sup>st</sup> of March 2006). Improved sanitation including SWM is important to the health of many. For example, reductions in malaria incidence in Vietnam as a result of improved sanitation have contributed to higher household income (Laxminarayan, 2004). Approximately 60% decrease in malaria cases

and about \$180 million annual economic benefit in the form of improved living standards have been realised (ibid).

Macroeconomists have estimated that countries that have succeeded in preventing malaria have an increase of 1.3 % in annual economic growth (Gallup and Sachs, 2001). This implies that if an effective SWM system which will reduce the spread of malaria, other diseases and flooding is reached, the health situation of the populace in Accra will be improved substantially in addition to other economic growth increases (Agbesienyale, L., personal communication, 23<sup>rd</sup> February 2006; Quansah, K., and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006; Hayfron-Acquah, personal communication, 28<sup>th</sup> of February 2006; Yabani, K., B., J, personal communication, 10<sup>th</sup> of March 2006). Therefore effective SWM systems remains an appropriate tool for achieving a sound health in Accra, improve environmental quality and also boosts economic development in Accra and the region at large.

In an effort to address some of these problems, the Government has over the years put in place a number of national policies and regulatory frameworks which in one way or the other have aspects relating to sanitation including SWM. But with all the policies and plans that have been put in place, Accra is still not harvesting the good rewards of an effective SWM system. For example the National Environmental Sanitation Policy which was published in 1999 stand out for its supposed impact on sanitation (solid and liquid waste) when implemented. Many call the policy the 'bible' of sanitation since it is a guiding tool and also because of the bodies that coordinates the policy. But if the bible which is a guiding tool doesn't really set out targets and means of achieving them, then there is a problem. This is evident in how the main concern of the policy is to clear Accra of all its waste by the year 2020. In order to practically see the performance of the policy it has been implemented. Even though the policy was implemented in 1999, Accra is still growing with waste adorning every part of the city. The problem with the waste is better pointed out in the Sanitation Country Profile report of Ghana published in 2004, which makes clear that implementation problems have affected the sanitation sector. Implementation as used in the English dictionary is carrying out or putting something into practice. With this view, implementation of a policy is practicalising the policy, and so if practice is a problem then obviously there are implementation problems. Having made clear that there are formulated policies, but achieving little means that practice (implementation) really lags formulated policies.



The discussion in the preceding paragraphs points out that implementation has been and is a major contributing factor to the success of existing environmental policies and might be so for an effective SWM system. So taking cognisance of the problems identified with existing policies will help identify likely problems to dealing with the 51% of household SW. Taking this position as a point of departure, a number of actors namely, policy formulators, enforcement authorities, waste contractors and citizens, can in one way or the other be seen to influence the implementation process. In identifying the hindrances to an effective SWM system in Accra-Ghana which aggravates many health issues at a higher level, flooding, contamination of surface and groundwaters... the research question is: **“what are the main hindrances to the implementation of an effective solid waste management system in Accra-Ghana and how can these be addressed?”**

### **1.3. Objective of study**

The study is aimed at identifying the main hindrances to the implementation of an effective SWM system in the Accra Metropolis and to provide the basis for addressing the problem to affect the deteriorating health situation.

The specific objectives are:

- To identify the adverse effects of SWM in the greater Accra region.
- To identify the hindrances in the policy implementation process.
- To identify some of the activities involved in reaching an effective SWM system.
- Give some insights that will contribute to dealing with the household waste problem thereby affecting the health situation.

## 2. Research methodology

The purpose of the section is to give an understanding into the methodological considerations that were used to be able to deal with the research question. The chapter presents the data collection techniques used; interviews, survey and participant observation. It continues with the research design and how the analysis of the study is done and ends with the structure of the report.

### 2.1 Data collection

Primary and secondary sources of data collection were utilised. The study used three sources of information for the primary data collection. This includes interviews, survey; collection of information from a group through interviews or application of questionnaire and observation. The primary data collection through the interviews and the survey was important since issues about implementation in the Ghanaian system receive little authentic data. The methodological technique was selected based on the fact that Yin (1994) suggests “*multiple sources of evidence as the way to ensure construct validity*”. The presentation of the primary data is as follows, interviews, survey and participant observation. The reason for this sequence is explained in the respective sub headings

#### *Interviews*

The first part of the primary data was acquired through interviews since that was the possible way of getting information from people with knowledge about SW issues and is involved in implementation.

The interviews were conducted with relevant actors who in one way or the other affect the waste situation in Accra. In trying to find the right people to interview, many phone calls were made to interrogate people thereby finding interviewees. Upon doing that, the interviewees were chosen based on their knowledge and understanding of the problem identified. The criteria for the selection was also based on their ability to provide information on solid waste issues relating to the study and their involvement in the process of implementation of environmental policies. The information to this respect was collected from government bodies, council officials, health officers, NGO's and households. In all, 10 interviews with 14 interviewees were conducted which basically gives to a great extent a qualitative view. The interview among the interviewees lasted for 30 and 90 minutes depending on how they participated and the information in search for. Again, the duration of the interviews was sometimes controlled; depending on factors

like interviewees work schedule that particular day or the following day. The reason for this was so as not to subject the interviewees to long and cumbersome interviews when input was on the decline. The flexible approach is considered to be appropriate because one cannot control the data collection environment (Yin, 1989). A semi-structured interview was suitable for the research since it left room for discussion. An audio recorder was used in the interviews to facilitate data collection and increase accuracy which is also a way of ensuring validity. Some of the interviews were conducted on telephone when more information was needed upon return from the study area. Table 2.1 shows the list of the people interviewed. A transcript of the interviews can be found in **appendix A** at the end of the report.

Name	Position
Bawa Micheal	Labadi Wireless Transfer Point
Boss Akolobilla	Labadi Wireless Transfer Point
Dr. Hohn B. K. Yabani	Specialist in Public Health and Metropolitan Director of Health Services
Ebenezer Quaye	District Environmental Health Officer (Ga District Assembly)
Frank Chinibuah	Chief Environmental officer in charge of public relations and monitoring of sub metros (WMD)
John K. Hagan	Manager of Deben Cleaning Services Limited
Kambozul B. Cosmos	Environmental Health and Sanitation Officer of the Ministry of Local Government and Rural Development
Kweku Quansah	Environmental Health and Sanitation Officer of the Ministry of Local Government and Rural Development
Lewis Agbesienyale	Coordinator for HIV aids and rural development (used to be in charge of environmental health and sanitation)
Nashiru Azumah	Labadi Wireless Transfer Point
Oswarld Larvoe	Operations Manager of the National Disaster Management Organization
Rexford Quaye	Deputy Programme manager of Department for International Development Ghana
Samuel Kpodo	Senior Environmental Health technologist in charge of private sector monitoring (WMD)
William K. Hayfron-Acquah	Senior Programme Officer/ Environmental Inspector of Environmental Protection Agency

**Table 2.1: list of the people interviewed**

Some of the interviews conducted were not used in the report since it yielded little information that could not contribute to the validity of information. This is as a result of the fact that some of the interviewees had little interest in the issue even though they were recommended by others as ‘good’ to be interviewed. This is also an important point to note how difficult it is to get information in the Ghana context.

### ***Survey***

The second part of the primary data was sourced through a survey. Fowler (2001) points out that “*numerous facts about people’s behavior and situations can be obtained by asking a sample of them*”. For this reason the Survey was important in getting the views of the households who are affected by the actions of the people interviewed in the first part of the primary data collection. The survey involved administering questionnaires to 10 households each in 7 communities in the Accra metropolitan area. Linguistic, geographic and demographic factors were employed in the selection of the communities and the respondents. With the vastness of the communities that had to be dealt with and the limited time set for the study, some assistance were employed in administering the questionnaire. The factors that were considered in the selection of assistance were based on personal schedules of the prospective assistants, their knowledge of the research area and finally their interest in the issues involved. These factors combined, resulted in the selection of two assistants, Emmanuel Takyi and Faiza Takyi. A little training was organised to expose them to the nature and issues involved, which meant that there was the need for caution on the part of the assistants in eliminating patriarchal ethos from the administration of the questionnaires as much as possible since diverse ideas and opinions were sought. The training also facilitated agreement on the standard interpretation of questions in the local dialect and helped the assistants to understand or get acquainted with the act of conducting community level interviews for example taking cognisance of the choice of location, and adjusting to the local time culture of the respondents. The local time culture has to do with the accepted 1 hour lateness times. Getting information from the questionnaires lasted from several hours averaging between 2 and 5 hours. This was as a result of the fact that in most encounters, general discussions involving a whole ‘compound house’ on topics of mutual interests such as the high cost of education and falling standards preceded the execution of the questionnaires. The rationale behind the informal discussions was firstly; to create a good rapport between the researcher, the assistants and the respondents; to serve as a strategy to diffuse any existing tension. Once this was done the local respondents became motivated and spoke freely and frankly without fear. Sometimes some of the women asked to be excused to go and lay the dinner

table for the family or put their children to sleep and returned later. These of course were part of their normal domestic chores and therefore such requests were granted without hesitation. These interruptions did not affect the focus and direction of the work. On the contrary, it enhanced the co-operation of the respondents by demonstrating to them the researchers and assistants understanding of their situation. A reference to the questionnaire for the households' survey can be found in **appendix B** at the end of the report.

### ***Participant observation***

Participant observation was used as a means to examine the problem on the ground. The method of observation can be characterised by what Spradley terms moderate participation, which denotes someone who seeks to “...*maintain a balance between being an insider and outsider, between participation and observation*” (Spradley, 1980). Being a native of Ghana and knowing most places in Accra contributed to the observation.

Participant observation in the entire SWM system provided insights that were not revealed in the interviews and the survey and also added up to what was revealed. A lot of central waste containers, disposal sites (official and unofficial) were visited and photos taken. Visits were also made to places where the different kinds of waste trucks used could be seen and photos taken. This contributed immensely to visualising the state of solid waste disposal problem in the city. These observations also served importance in validating data from the interviews, survey and secondary sources. During such situations notes were taken in addition to the photographs.

The secondary data was sourced from relevant books, research reports and internet publications. Below is a list of important documents that were used most in the report.

### ***Important documents***

#### **Information about SWM in developing countries in 2002**

Urban Solid Waste Management in Low-Income Countries of Asia, How to Cope with the Garbage Crisis. Urban Solid Waste Management Review Session, Durban, South Africa. Prepared by Zurbrügg, C. For the Scientific Committee on Problems of the Environment (SCOPE).

#### **Data on solid waste practices and population in 2002**

2000 Population and Housing Census Report, Ghana Statistical Service

**Text on environmental compliance and enforcement, 2004**

Towards Effective Environmental Compliance and Enforcement in Latin America and the Caribbean with financial support from Foreign Affairs Canada by Marc Paquin and Carla Sbert, for UNISFERA, CENTRE INTERNATIONAL CENTRE

**Text on SWM options, 2002**

SOLID WASTE MANAGEMENT OPTIONS FOR AFRICA, The Final draft version on the study, By Richard J. Palczynski, for the AFRICAN DEVELOPMENT BANK, Sustainable Development & Poverty Reduction Unit.

**Text on sanitation policy, 1999**

The National Environmental Sanitation Policy, prepared by the Ministry of Local Government and Rural Development through the National Environmental Sanitation Coordinating Council.

**2.2 Research design and data Analysis**

The study is an attempt to find out the hindrances to the implementation of an effective SWM system thereby giving insights that will contribute to reaching an effective SWM system which will better the health of the populace and the environment in general.

A literature review of the SWM system in Accra and how important it is to have an effective SWM system was analysed. The review was essential to get an in depth knowledge about the entire system and a more detailed indirect discussion of the need for an effective SWM system. Even though the review was not the centre of the main discussion of the report, it gives an understanding and meaning to the quest for an effective SWM system.

Since the study set the stage by identifying implementation as an important component to an effective SWM in Accra, it uses an integrated implementation model for analysis. The model gives information as to how some of the actors who influence policy implementation can be studied. The actors identified by the help of the model were studied by the use of interviews and a survey. The interviews were used in studying single actors while the survey was used for the larger number of actors (households). After identifying the actors that can be studied, a part of a Logical framework analysis (LFA) approach was used to come up with possible hindrances to an effective SWM system and the result of managing and not managing SW effectively. The former helped

in identifying how far the actors in the models views could be discussed while the latter helped in recognising how important it is to have an effective SWM system.

Although the model has proven success in developed countries it might not be a success in Ghana. This makes it motivating to have a go on the model to see how far it can be successful.

How the interviews were conducted is important in assessing the validity of the information. In order to produce a document reflecting the words of interviewees, an audio recorder was used. Statements that were not clear during transcriptions were clarified by calling interviewees on telephone in Ghana and upon return from the study area. Those that were difficult to understand on phone were sent through email for clarifications. The only problem with this was that some of the interviewees never replied the emails. In this situation accuracy was sought through getting support for such statements from other interviewees who knew something on such issues.

The reliability of the findings is based on the method and the theoretical approach used. making the method and theoretical approach understandable as possible was the tactic to ensure reliable findings and to make it feasible for others to reproduce the same or similar results when the research is performed again.

The citation style used in the text and the bibliography was inspired by the American Psychological Association (APA, 2006). This means that all books, scientific articles, internet publications and others are cited in this format (**last name and date**). Interviews which form a very important part of the report are cited in this format (**last name with initials of first names, personal communication, and date**).

## 2.3 Structure of the report

The report is organised in seven chapters, followed by bibliography and two appendices. Appendix A is transcript of all the interviews conducted with a description of the interviewees, when the interviews were conducted and purpose of interviews. Appendix B is the questionnaire used for the household survey.

The first chapter gives a general overview of the report, providing background information about solid waste management in developing countries and narrowing it down to the Ghanaian context. It continues to describe how several attempts have been

made to deal with the problems surrounding solid waste management. The problem formulation points out implementation as a hindrance to SW policies and might be for an effective SWM system. With this background, the research question has been defined.

The second chapter gives an understanding into the methodological considerations used in the report. It further explains how the research was designed and the data analysed to reach the conclusion.

Chapter three outlines the theoretical context in which the research is placed. It contains a description on why the study focused on implementation and the integrated implementation model and how it helped in identifying actors in the implementation of the SW policy. Also included in this section is the Logical Framework Analysis that helped to come up with issues that could be discussed taking cognisance of the actors.

Chapter four presents a literature review on the SWM system in Accra and the adverse effects of not managing SW effectively. The former is important since it helps to familiarise partly with the context of the entire system and also give understanding to the system being dealt with while the latter points the adverse effects of addressing the improper disposal of household waste.

Chapter 5 analyses the field survey that was conducted at the household level. It was done in 2 planned settlements and 5 unplanned settlements in the Accra metropolis. The main aim of the section was to present the empirical information from the households' that were used for discussion. Other issues which were important in emphasising that there is the need for an effective SWM system were also discussed.

Taking cognisance of the theoretical approach (integrated implementation model and the LFA) in chapter 3, the 6<sup>th</sup> Chapter discusses how policy formulators, implementers, street-level bureaucrats and the target group under influence of public attitude, funds, technological know-how, poor enforcement/awareness creation, legislation inadequacies and political will affect the implementation of an effective SWM system based on what is happening with the SW policy in Accra. Also included in the chapter is how the main problems identified with the SW policy could be tackled to affect the effective SWM system. This was made possible by responses from interviewees, the households and relevant literature.



The last chapter gives an overview of the entire report and discusses the findings which end the journey on the hindrances to the implementation of an effective SWM system in Accra which aims high to affect the deteriorating health situation.

### 3. Theoretical approach

The conceptual framework of the study is discussed in this section. The discussion centres on why the study focused on implementation and for that matter the implementation model. It further discusses an approach involving the use of a logical framework analysis which is used together with the model to discuss hindrances to an effective SWM system.

#### 3.1 Introduction

An effective SWM system in the Accra metropolis is important in diverse ways; improving the health of the populace, living standards, economic development and environmental quality. It has been pinpointed that implementation is an important component in the quest for effective SWM. Research on waste and its adverse effects is continually producing new findings that may contribute to problem solving. Based on some of these findings policies are made. However, after making the policy (formulated policy), the transfer of the policies into practice (implementation) can most often be unpredictable, even though this is an important part to assess the practicability of the policy. Many see the creation of public policy as synonymous with its implementation. However, while creating of policy is important, the success of the policy lies in how well it is implemented (Kelechi, 2004). Kelechi (2004) points out that the implementation stage is considered the most important for decision makers and for those who have been affected by the policy because it is the implementation of policies that determine how severe the impact of the policy will be on different groups in the society. Even though one may argue that there are other areas of importance to the performance of a policy the focus on implementation seems important if compared to other situations.

The main policy document on the HIPC initiative recognizes that “*ill health is both a consequence and cause of poverty through lack of funds and knowledge to prevent illness*” (Republic of Ghana, 2002). In this regard the provision of basic social services and basic education for the poor and more emphasis on preventive health care has been at the centre of socioeconomic policy. Many argue that the health policy is comprehensive on paper but according to Bandea (2004) implementation... has not been so.

Also a meeting on occupational health and safety was organized by the institute of public health in Ouidah, Benin. Participants from different countries made presentations on the status of occupational health and safety in their countries. Country highlights from

Uganda, Zimbabwe, Nigeria, and Burkina Faso showed a trend of formulating/ planning the area of occupational health and safety, but Ghana had already formulated the policy but with no implementation realised (World Health Organisation, 2005)

Further more Edoho and Dibie (2005) point out that environmental policies in Ghana have failed to achieve their apparent objectives. This is attributed to the bad management framework to implement environmental protection plans and programmes. Another reason for the failure has also been that the formulation of rigorous environmental policies however has overlooked the input of indigenous people in Ghana who were expected to implement the policy in their local places (ibid). Local participation in the development planning decision is considered by many as not only basic human right, but also the most effective way to ensure success of development efforts (Erocal, 1991; Appiah-Opoku, 1997). Since the importance of the locals has not reached the Ghanaian policy makers there are implementation problems (ibid). The other important issue is that external and internal stakeholders are not effectively gathered together to provide sustained support for realistic public policies aimed at protecting the environment (Edoho and Dibie, 2005).

Paul Applegarths remarks on aid, governance and development which had representatives from some African countries including Ghana stressed that

*“ it is one thing for us to discuss good policies, to talk about development strategies and to critique the various theories of development in Chicago, or Washington or in Geneva or even Johannesburg, it is something else entirely to implement these ideas on the ground, facing the constraints of time, a lack of resources and sometimes just overcoming inertia”.* (Applegarths, 2005).

The discussion in the preceding paragraphs as well as in chapter 1.2 is evidence showing that for a longtime formulating of policies in Ghana has not being a problem, but implementation has! It can be argued that while making an environmental policy may not be a problem, implementing the policy may be a major problem in terms of public attitude, lack of funds, low technological know-how, poor enforcement/awareness creation, legislation inadequacies, lack of political will and most of the issues raised in the LFA. As been acknowledged by (Agbesienyale, L, personal communication, 23<sup>rd</sup> of February, 2006; Quansah, K and, Kambozul, B. C personal communication, 28<sup>th</sup> of February 2006; Hayfron-Acquah, W, personal communication, 28<sup>th</sup> of February 2006), environmental sanitation has not been seen as a priority for the country's development,

therefore little has been done to implement policies that will change the situation. Focusing on a framework that will incorporate implementation by way of analysis, the study chooses a perspective on implementation theory for the quest for possibility.

### **3.2 Implementation theory**

The theory of implementation has been used for barely three decades in examining the implementation of public policy. The theory has been used to fulfill different objectives based on the research of the many scholars. It has also been studied from different viewpoints based on the particular research group. But in all, goal achievement has been the governing principle for implementation since the 1970's. With inspiration from most of the pioneers, the theory of implementation became one of the vogues of political science and policy analysis. Since then, the theory has grown to be a recognized element of public policy that focuses on different stages of policy process (Lipsky, 1980 in Winter, 2003).

Implementation theory analysts point out a debate as to whether implementation should be considered from a top down; as a control problem (Mazmanian and Sabastier, 1981 in Winter 2003) or from the bottom up dealing with actors most immediate to problems to be solved by policies (Hull and Hjern, 1987 in Winter 2003). Though there are other differences between the top down and bottom up approaches, goal achievement has been the dominating standard.

No general theory has materialised even after almost thirty years of exploring implementation. With different methodologies, disagreements about key concepts of the theory have accumulated as some researchers focus on implementation process as a dependent variable (Lester and Goggin, 1998 in Winter, 2003), others examine implementation based on performance/outcome as a dependant variable (Lipsky, 1980 in Winter 2003).

The mix-up that has held back the development of a unique theory is conceptual ambiguity (May, 1999 in Winter 2003). In this case, for one to study the process of implementation and all that goes into it there is the need to look at implementation theory from an approach that will lead to making a more concrete analysis. In trying to reach such an approach, Winter suggests a model (Integrated Implementation Model) that put together a number of the most important theoretical fundamentals from the study of implementation theory. The main factors used in Winters' model in explaining

implementation outputs and outcomes are policy formulation and policy design, interorganisationsal relations, street level bureaucratic behavior, target group behavior, socio economic conditions and the feed-back method.

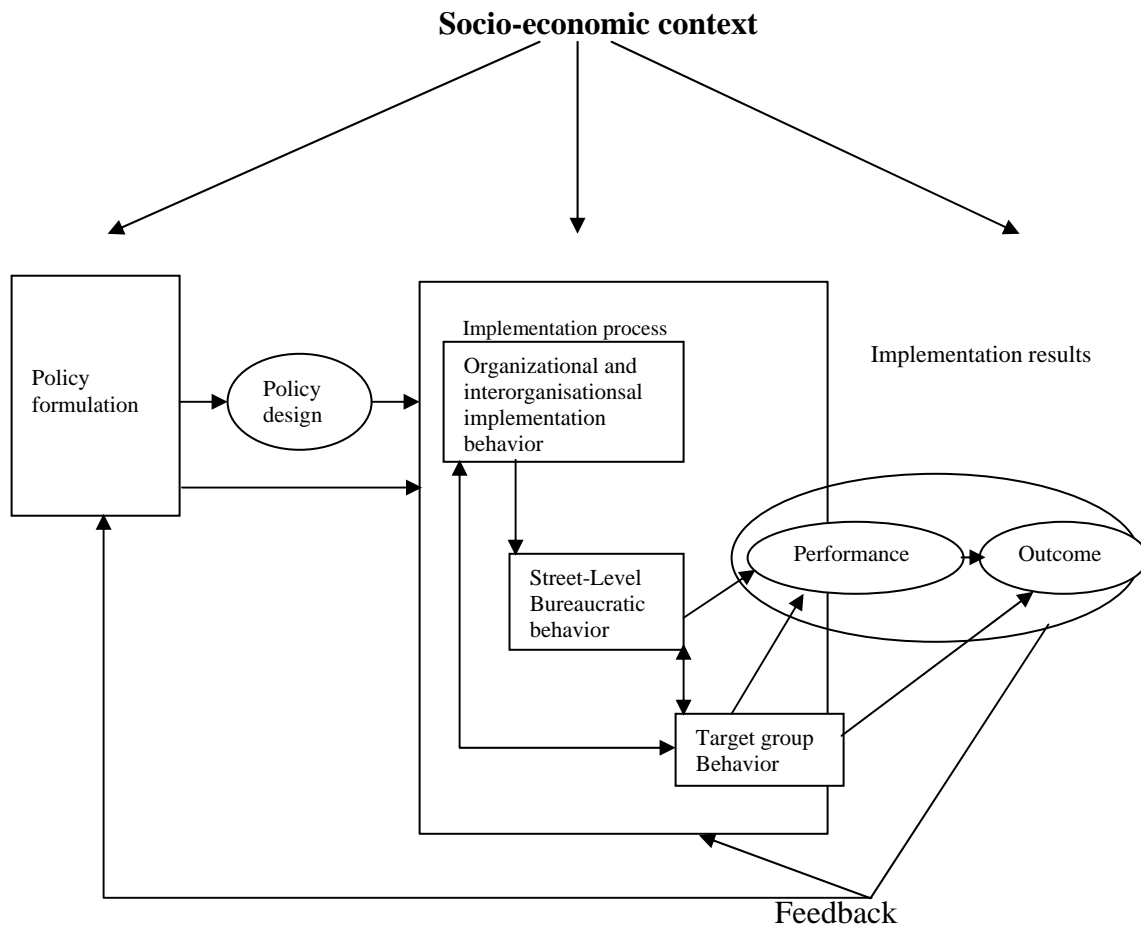
With the numerous numbers of actors involved in the issue of waste management in Accra which is seen to be complex can be to a very significant degree be studied with an Integrated Implementation Model. This is as result of the fact that the Model is explicit on who the actors in the implementation process are and can thus lessen the burden of their identification. The model will assist in the description of the respective role of the actors in the implementation process. The adoption of the approach implies that policy analysis is been considered from a broader perspective. This is helpful because instead of focusing only on an input and output, the whole system of input, processing, output, feedback is analysed. The use of the model will as well enhance the understanding of the interconnectedness of the components of the whole implementation process. The model as well incorporates time which will help comprehend implementation process as an unremitting process and not a detached phenomenon. It will also contribute to the body of knowledge in SWM by looking at the degree at which each of the elements contribute or hinder the implementation of an effective SWM system in Accra.

Reports show that the model has been helpful and effective in yielding results when applied in studying Australian domestic politics (Ryan, 1996) and in the Danish employment policy (Bonfils, 1998; Jensen et al., 1991 in Winter, 2003). Alesch and Petak (2002) studied the barriers to successful implementation of earthquake hazard mitigation policies with the model.

Although the model has proven success in developed countries it might not be a success in Ghana. This makes it motivating to have a go on the model to see how far it can be successful.

### **3.3 Integrated Implementation Model**

Winter (2003) presents a model which synthesizes and integrates some of the important variables in policy implementation in a common framework, the Integrated Implementation Model (fig.3.1).



**Fig.3.1: The integrated implementation model (Winter, 2003)**

\* The model should be studied from left to right

The model focuses on both performance and outcome in relation to policy objectives. Policy formulation and design are the first set of variables that affect policy implementation results (Winter, 2003), but a well designed policy is not sufficient for improving implementation scenarios (May, 1999 in Winter, 2003). As pointed out by Winter (2003), the basis of problems in implementation can often be found during policy formulation. A problem at this stage leads to a policy with no clearly defined goals (ibid). A policy with these problems consequently turn out to be a document which seems to address the problem but does not really offer means by which the stated goals could be achieved. A well defined policy is capable of avoiding conflicts and will not render a policy as an emblematic item, but will lead to clearly set out goals and avoid problems during implementation (ibid). The policy design phase is also important since distortions in policy formulation can be addressed as part of the design of a given policy (May, 1999 in Winter, 2003). The policy design can be used to foster commitment through publicity

about policy goals, getting approval of citizens, cost-sharing requirements, appropriate policy instruments, incentives to carry out programs and delegation of responsibilities (ibid).

The model moves on to focus on how implementation process affects the outcome of a policy. Implementation processes are characterised by organisational and inter-organisational behaviors. Implementation can be done by an organisation. But if implementation is done by different organisations, then its success depends on the coordination among the different organisations and departments at the local level (Pressman and Wildavsky 1973 in Winter 2003). It is again argued that if action depends on a number of links in an implementation chain, then the degree of collaboration that is required to bring this to pass should be close to 100%.

Another crucial factor that is important in affecting the implementation process is the behavior of the street-level bureaucrats or frontline implementers. The behavior of street level bureaucrats has a reasonable influence on policy implementation since they are into close contact with the target group. They make vital discretionary choices in their direct contact with citizens due to the usual situation of limited resources and several demands in which they find themselves. In addition to the situation they find themselves in, they make partial priorities among cases, and modify policy goals. According to Lipsky (1980 in Winter 2003), *“the coping behaviors of street-level bureaucrats’ thoroughly bias the delivery behavior in relation to the policy directive”*. Whatever direction is taken, change in policy is likely and in this way, their behavior can have a dramatic influence on the implementation process.

The target group of public policies that is a part of the model can be citizens, communities and firms. Their behavior has a substantial effect on implementation, either through a direct effect on the policy or through the performance of street-level bureaucrats through their optimistic or pessimistic actions.

One of the highlights the model makes in addition to the actors is the socio-economic context in which the process goes on. Schübeler (1996) points out, *“the effectiveness of Municipal solid waste management depends upon their adaptation to the prevailing context of the city in which they operate”*. Understanding aspects like urbanisation (Ghana Statistical Services, 2002), the political environment (Quansah, K., and Cosmos, B. K., personal communication, 28<sup>th</sup> February 2006; Chinibuah, F., and Kpodo, S.,

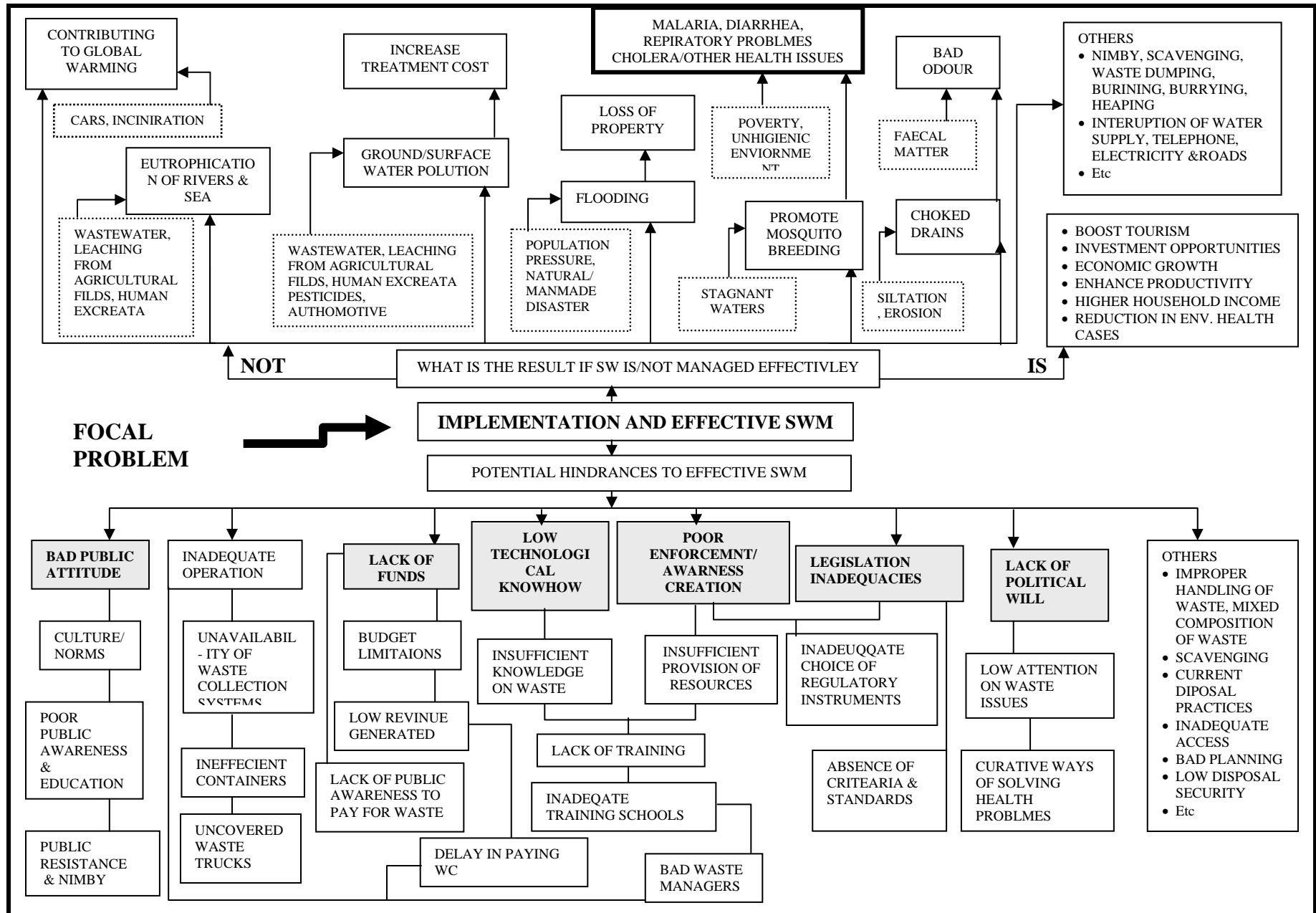
personal communication, 1<sup>st</sup> March 2006; Hagan, J. K., personal communication, 15<sup>th</sup> March 2006), institutional dimensions (Quansah, K., and Cosmos, B. K., personal communication, 28<sup>th</sup> February 2006; Chinibuah, F., and Kpodo, S., personal communication, 1<sup>st</sup> March 2006; Akolobilla et al, personal communication 3<sup>rd</sup> March 2006; Hagan, J. K., personal communication, 15<sup>th</sup> March 2006;), the active informal network might be important as influential factors to successful implementation.

Finally, from the model implementation results can be measured from the outcome and performance of a policy. These two measurements of a policy seems to be the end product of the other, in that, outcome can be achieved as a result of efforts made which can be referred to as performance. As Winter (2003) comments, *“measuring implementation results in terms of performance as an alternative to outcome is a severe dilemma, he therefore recommends attention to be focused on the bottom up approach which center on the backward mapping or feedback”*. This feedback concept deals with the backward flow of information to decision makers, various actors and organisations who act in one way or the other in the implementation process. This way of affecting the implementation process is to make certain that policies and other behavioral characters are endlessly checked and assessed, and where necessary modified to make the process more effectual.

### 3.4 Logical framework analysis

The study uses a part of a logical framework analysis (LFA) approach in addition to the model. The approach which consists of a logical brainstorming of the main research focus is used to come up with the potential hindrances to effective SWM and the resultant effect if SW is/not managed effectively. The brainstorm was made possible by establishing knowledge and developing it based on reports and inputs from other actors in the field of SW in Ghana. The LFA presents a number of factors that could be allied to the problem. It is important to note that some of the issues raised are interdependent on other factors and conditions. That is why the LFA shows other factors that contribute to the resultant negative effect of SW. Figure 3.2 illustrate the problem using an LFA.





\* Highlighted causes would be the focus of the study

□ Main concern of study

\* Dotted boxes shows contributions from other sources

**Fig.3.2: Problem in a Logical Framework Analysis**

Since it is important to do an analysis which could contribute to problem solving thereby affecting the waste situation positively, the study focuses on analysing six potential hindrances (highlighted causes in fig. 3.2) to an effective SWM system, namely attitude of the public, lack of funds, low technological know-how, poor enforcement/awareness creation, legislation inadequacies and lack of political Will. The selection of these themes was made based on fact that many research findings in Ghana on environmental issues point to at least one of these. Then again most of the interviewees attached a lot of importance to one of these headlines.

### **3.5 Theoretical approach closure**

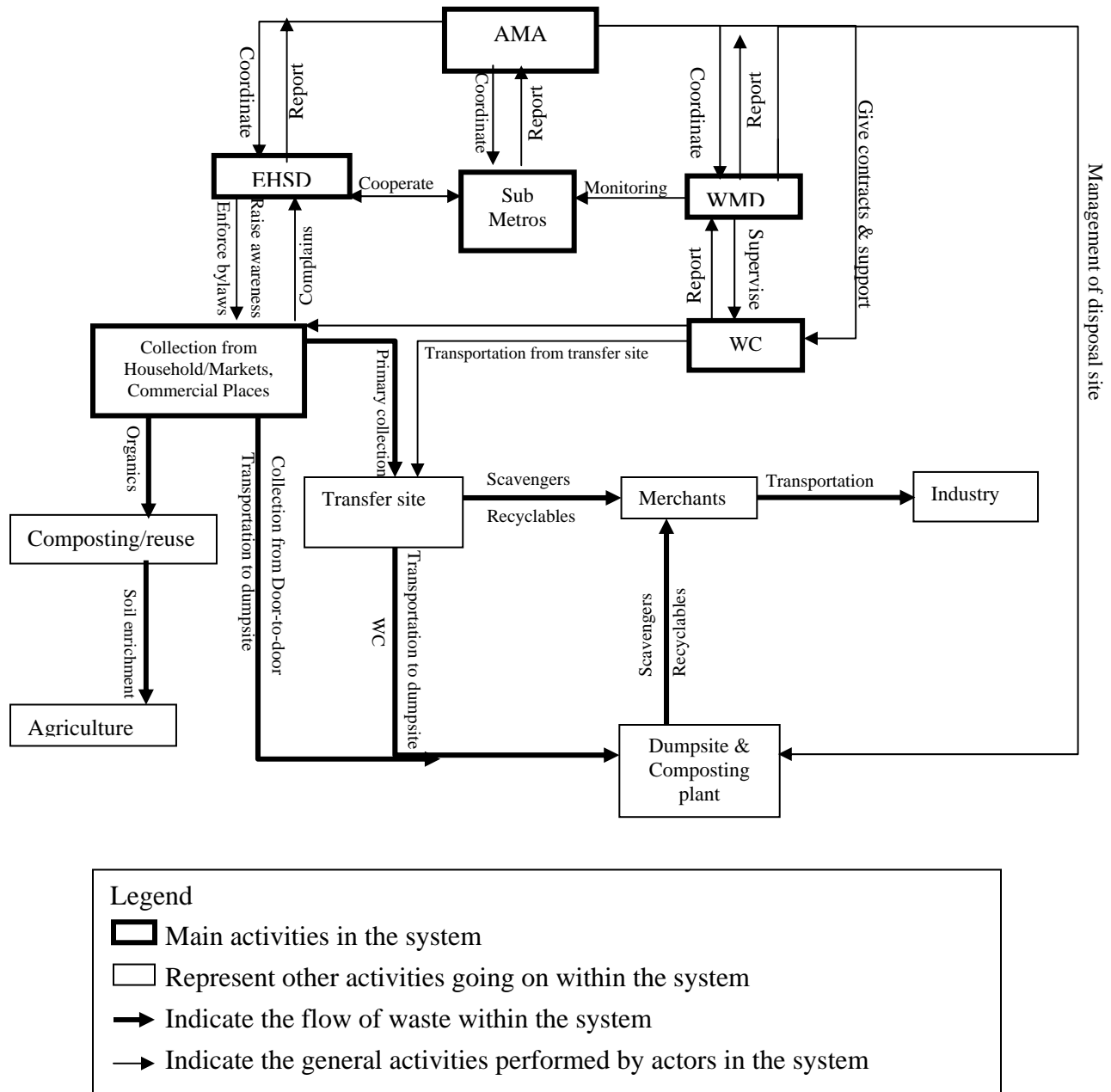
The model used helps in identifying the actors to be focused on in the discussion. The LFA on the other hand serves two purposes. First, the part of the LFA on the hindrances to an effective SWM system helps in identifying the main issues that could be discussed taking cognisance of the actors. The second part on the results of managing and not managing SW effectively also helps in narrowing down the scope in chapter 4.2 which is an indirect discussion on the need for an effective SWM system. So the model and the LFA give focus in all the discussions.

## 4. Literature Review

The chapter presents a review of the SWM system in Accra and the results of not managing SW effectively. The aspect on the SWM system is important since it helps to familiarise partly with the context of the entire system and also give understanding to the system being dealt with. The portion on the result of not managing SW effectively is essential since it discusses why the improperly disposed 51% of household SW should be addressed.

The arrangement of the section is as follows; SWM system in Accra, SW generation and composition, SW collection and transportation, SW treatment and disposal, Recycling and composting and what is the result of not managing SW effectively.

#### 4.1 Solid waste Management system in Accra



**Fig. 4.1: Solid waste management system in Accra**

The entire system of SWM is headed by the Accra Metropolitan Assembly (AMA) Major. With its vast area of operation, some of its task is designated to the Sub-Metros where almost the same activities take place. The AMA is responsible for the software aspect of SWM; signing contracts with WCs and designating their areas of operation. The hardware aspect of SWM is a collective duty of WMD and the Environmental Health and

Sanitation Division (EHSD). The WMD is in charge of the overall SWM; from collection to final disposal. The WMD is thus responsible for the management of transfer sites (community container sites), the Oblogo waste dump and the composting site at Teshie. They supervise all the activities of WCs and monitor their effectiveness, take action to resolve known problems, makes short term plans to respond to community needs and wider environmental considerations and ensure good public relations. They coordinate and report to AMA about the performance of WCs. EHSD is responsible for enforcing environmental standards and regulations including bylaws of the Assembly and create awareness. They also provide organised and unremitting public education on protecting the environment. WCs are in charge of transporting SW from community container transfer sites to the landfill. Where door-to-door collection takes place WCs collect and transport SW to disposal sites. With the community container system, households are responsible for making SW available at the sites.

An active informal network in the SWM system is made up of itinerant waste buyers, scavengers and merchants. A considerable number of urban poor who act as itinerant waste buyers and scavengers depends on recycling of waste for their livelihood. Whereas focus of Western waste policies over the past decade has been to build new recycling systems, in place of the informal sector, Accra continues to receive a great contribution from this sector. For example, about 90% of metals are recovered from waste through the itinerant waste buyers and scavenging activities. But scavenging activities is seen to be reducing efficiency of waste management. Those who work at the collection points often spread refuse around thereby increasing time for collection and hindering the work of collection vehicles and tractors/or compaction equipment. On the other hand, it provides a livelihood, often for many thousands of urban poor. Some few households also undertake some composting which is used in fertilising farmlands and backyard gardening while direct reuse of kitchen waste/organics is used in feeding livestock.

#### **4.1.1 Solid waste generation and composition**

Waste generation and composition are very important machinery of waste statistics. Having reliable data on waste stream characteristics such as the nature, characteristics, types and quantities of waste components in the waste streams of a specific locality is essential in planning, development and monitoring of waste management systems (Vidanaarachchi et al, 2005). The average per capita per day of SW generated is estimated at about 0.45 kilograms (Ghana EPA, 2002). Holding change in production and consumption patterns constant, future projections of SW generation is subject to

population growth. The rapid urbanisation has increased the number of urban dwellers in the Accra metropolis. The population of about 3 million is expected to double by 2025 (Ghana Statistical Services, 2002). The growth rate of Accra which is about 4.4% is said to be extremely high by national and world standards (ibid). Accra attracts people from all over Ghana as well as from surrounding countries of Cote' D'Ivoire, Burkina Faso, Togo and Benin.

The composition of waste depends on a wide range of factors such as food habits, cultural traditions, lifestyles, climate and income (Vidanaarachchi et al, 2005). This will offer useful information on the potentially available management options. In Accra, the domestic SW can be routed via three distinctly different stream types; namely the High-Income Low-Density Population Waste Zone, Middle-Income Medium-Density Waste Zone, and Low-Income High-Density Population Waste Zone (Fobil, et al, 2002). The waste streams in these zones consist of completely different proportions of the waste components. The waste from domestic sources includes food waste, garden waste, sweepings, ash, packaging materials, textiles and electric and electronic waste (Ghana EPA et al, 2002). That of industrial sources includes metals, wood, textiles, plastic, and food waste from some of the main line factories. The business quarter generate waste with high food and plastic contents while waste from schools and offices have high paper and plastic contents. These wastes are classified with their composition in the table 4.1

<b>Fractions</b>	<b>Organic material</b>	<b>Inert materials or residue</b>	<b>Plastics</b>	<b>Glass</b>	<b>Paper</b>	<b>Metals</b>	<b>other waste</b>
Composition (%)	60	11	8	2	8	3	2

**Table 4.1: Waste composition for Accra by percentage weight (Fobil et al, 2002)**

From table 4.1 it is clear that the composition of organic waste makes up the highest proportion at 60%. The high fraction of this waste is due to the fact that Ghana's economy to a very large extent depends mostly on agricultural products for export and household consumption. This is followed by inert materials, plastics and paper, metals, glass and miscellaneous or other waste. Inert waste including debris from demolition and construction works are not often disposed of as waste since they are used in paving the access to many housing and road construction projects. Plastics, paper, metals and glass are recycled into various forms. Miscellaneous waste which is made up of hazardous solid wastes generally occurs in small quantities. But when these types of waste are not

managed effectively, it results in problems as identified in the LFA. For example, plastic waste contributes to the blocking of drains, which increases the risk of flooding and also add to the incidence of malaria and other health issues (Amankwah, 2005). When the general composition of the waste fractions (table 3.1), do not receive better disposal practices, it results in burning, burying, dumping which increases in diverse ways, global warming, eutrophication, pollution of ground and surface waters and others (see LFA). Identifying the composition of waste is a way to finding technical options for a specific locality (Vidanaarachchi et al, 2005). The waste generated per day in the metropolis is however, not totally collected from their sites of generation.

#### **4.1.2 Waste collection and transportation**

Prior to 1999, the WMD of AMA was responsible for the entire system of solid waste collection, transportation and disposal. But since 1999 the services of collection and transportation has being outsourced to 17 WCs; 15 in active work while 2 serve as backup. Some of the WCs include Deben Cleansing and Construction Services Limited, Ayeetey Brothers Company Limited, Liberty Waste Service Company...etc. For the purpose of collection the city has been divided into areas based on the level of income and quality of housing. Franchising and contracting are the two SW collection schemes adopted. The franchising aspect deals with door-to-door collection in high income areas where households pay for these services directly. These areas are classified as well-planned residential areas with easy access roads. Examples of these areas include cantonments and the airport residential area. The WCs in charge of these services pay a tipping fee of 10,000 cedis (about 7.8 DKK) for a ton of waste to AMA for the use of the dumpsite. On contract bases, WCs are paid by AMA to carry out block and communal container collection. Block collection occurs in middle-income residential areas such as Adabraka and Dansoman. The last which is the communal container collection system takes place in low-income-high- population-density areas such as Alajo and Nima and other places with uneven or no access roads. Market places are also covered under the contract agreement. Despite all the schemes put in place, all is not well for utmost collection. Table 3.2 shows average waste collection over the years.

Year	Average tonnage generated per/day	Average tonnage collected/per day
2000	1650	1200
2001	1700	1200
2002	1720	1200
2003	1800	1200
2005	1800	1200

**Table 4.2: Volume and tonnage of waste collected in Accra, (WMD, 2006)**

From table 4.2, it can be seen that while the waste generated keeps increasing, the amount been collected remained unaffected for some time now (2000, 2001, 2002, 2003, 2004 & 2005). This results in increases in waste that accumulates in places in the city which compounds the various health problems and other adverse environmental impacts.

#### **4.1.3 Solid waste treatment and disposal**

Presently Accra has no sanitary landfill. The disposal system in Accra can be described by improper location joined with uncontrolled and non hygienic dumping. The Mallam dumpsite received most of Accra's waste between the periods 1991 and 2001. The Mallam dump however was stopped from operation as the dump capacity was exceeded and many objections came in from nearby residents. Djanman dump was the next in line to help the situation but unfortunately was filled to capacity in less than three months. The abandoned Mallam and Djanman sites are mountains of waste and since these are not landfills with any controlled management, the result is a threat to human health, leachate and landfill gas formation. The current SW dumping site for the Accra metropolis is an old quarry at Oblogo. Dumping at the Oblogo begun in 2002 and was expected to reach its full capacity in 2004 but it is still in use because there is no other place to dump waste.

Since the systems put in place cannot handle the ever increasing amount of SW being generated in Accra, the public takes up the challenge through various means to make disposal possible. Waste is thus disposed off indiscriminately in watercourses, drainage channels, burying, burning and dumped somewhere in the city. Much of the waste generated is disposed of with little or no treatment (Government of Ghana and Ministry of Local Government and Rural Development, 2003).

Apart from the main activities in solid waste management in Accra, there is some recycling and composting as shown in figure 4.1.



### 4.1.3a Recycling and composting

The system of SWM (see figure 4.1) also receives some recycling and composting activities. Table 4.3 shows the waste type and percentage recycling taking place.

Waste type	metal	Paper	organic	Glass	Plastic
Recycling (%)	90	40	15	5	2

**Table 4.3: Waste recycling in Accra (Fobil, 2001 in EPA et al, 2002)**

From the table about 90% of metals are recovered through scavenging activities from transfer sites and the main dumpsite and house-to-house itinerant waste buying. These metals are processed by the Tema Steel works and some small scale aluminum factories.

The 40% paper is usually processed by the tissue factories such as Super Paper Product Company.

The organic component is dealt with in different ways; a small scale at the household level and a larger scale at the Teshie composting plant managed by WMD. The composting plant produces compost fertiliser from the organic household waste. Even though the compost has not being petronised by most farmers because of its low quality, it has been used for grassing lawns, in parks and gardens and by estate developers. With its low compost quality to market for revenue generation, the composting site has therefore almost turned into a waste dumping site. A few other private companies engaged in composting have similar products as AMA.

The 5% glass is recycled into glass and terrazzo in factories. The sorting for recyclables and other valuables in Accra has depended on scavenging. There are many unofficial scavengers seen on other transfer sites and dumps.

The 2% plastics are recycled into plastic waste pellets by the two recycling companies in Accra, Creative Plastics and City Plastics at Aboso Okai and Pokuase respectively. These companies are relatively new and have low capacities which go to the extent that workers use knives to cut plastics for machine to process. These pellets are then sold to plastic manufacturing companies.

## 4.2 What is the result of not managing solid waste effectively?

The majority of residents who are not served with daily collection store their waste in open containers and plastic bags in the home. Households who often store waste in the home most often testify about flies in toilet. The existence of flies in the toilet is correlated with the presence of flies in the kitchen. Over 60% of household SW generated is organic matter (Laryea, 1997). Under prevailing high tropical temperatures, the organic matter decomposes speedily and attracts houseflies. Houseflies transmit diseases through food contamination either by direct contact with food or through their droppings. The frequency of cholera, diarrhea and malaria, in many parts of Accra has been as a result of unsanitary conditions with waste taken a greater percentage (Boadi, 2004). Common diseases like malaria, intestinal worms, and upper respiratory infections are among the most common health problems reported at the out-patient facilities in Accra (ibid), with majority of these cases recorded from inhabitants in and around the slum. (Songsore and McGranahan, 1993). According to Laxminarayan (2004), malaria endemic regions tend to benefit less from tourist activity and enjoy less business investment because of higher health care costs for workers.

The problem of SWM is compounded by the fact that the few waste containers that serve the collection points are less effective because of their small volume and numbers serving large communities, and infrequent removals of waste (Boadi and Kuitunen, 2005). In addition, many households are about 500 meters instead of 150 meter distance from central refuse containers (Stephens et al., 1994). This inadequate access to transfer facilities results in indiscriminate disposal in open spaces and surface drains. These practices have increased the Biological Oxygen Demand (BOD)<sup>2</sup> of most water bodies in the city (Ghana EPA, 2001). This is as a result of the mixed state of waste produced which contains chemicals and microorganisms. The Chemu lagoon (Abugri, 2006) and Korle lagoon (Ghana EPA, 2001) is virtually dead. The Chemu lagoon which was once habitat to a variety of aquatic life and source of bountiful harvests of many seafood is considered as the most polluted water body in Ghana (Abugri, 2006). Different types of heavy metals have also been identified in the Korle Lagoon with levels found to exceed the World Health Organizations standards (Ghana EPA, 2001). The result of some of these practices is flooding during raining seasons which result in loss of lives and property (Sam, 2002). The perennial flooding is attributed to, among other natural

---

<sup>2</sup> BOD is an indirect measurement of biodegradable organic matter content. It measures the amount of oxygen consumed by microorganism.

factors, accumulation of silt and waste blocking major drains and rivers, and lagoons (Lamprey, 2006). In the 1995 floods, seventeen lives were lost and there was interruption of services like water supply, telephone, electricity and road (Sam, 2002).

The SW that is collected is said to be bounded by inefficient techniques. Most of the waste trucks normally used to collect waste are uncovered. These trucks spill some of the waste load back onto the streets and roads thereby complicating waste collection. According to Ohnesorgen (1993), the cost per metric ton of cleaning waste on the street is estimated to be between two and three times the cost of collection.

The remaining solid wastes that do not find their way into waste containers and drains are disposed off by other means. Waste burying, burning and dumping seems to be the least costly option and most popular (Bartone and Bernstein, 1993). Many argue that although inexpensive in terms of out-of-pocket costs, these acts may impose large costs on society, environment and the economy.

Waste burning contributes to localised city wide air pollution problems (Kjellen, 2001). Smoke from burning waste may be detrimental to the health of urban residents through the inhalation of respirable suspended particulates, including carbon monoxide, nitrogen dioxide, and sulfur dioxide. Fires may also reduce visibility, causing explosion of cans and perhaps diffusing property. The burning of plastic waste including empty “pure water” sachets causes cancer and breathing problems (Tetteh, 2006). On the other hand, burying of some types of waste products in the back yard leads to contamination of soils (ibid).

The other disposal practice that causes severe havoc is dumping. With the amount of organic matter that goes into the landfill which has little or no leachate management has a high potential for the spread of infections through run offs during rains and contamination of surface and groundwaters (Boadi and Kuitunen, 2005). The leachate generations that occur at the Mallam dump flood residents’ compounds after rainfall (Government of Ghana, 2003). These leachates which evidently contain pathogens are a direct risk to human health and a source of contamination to ground and surface waters. Lands and houses around the dump sites have lost value as a result of the presence of the leachate from waste, odor, rodents and flies (ibid). The current dump site of Accra at McCarthy Hill is within an earthquake-prone zone and so leachate could easily contaminate groundwater as a result of earthquake activities. The Densu River which is a

source of drinking water for most of the populace is close to the Oblogo waste dump. This is a very important issue since it is just an ordinary dumpsite. With the high rate of decomposition associated with the organic matter at the dumpsite various landfill gases such as methane, carbon dioxide, carbon monoxide, nitrogen, hydrogen sulfide and ammonia are produced (Pokhrel and Viraraghavan, 2005). Some of these gases have a pungent odour (ammonia and hydrogen sulfide) and are poisonous to the health of the population near the site. With some of these problems that have arisen as a result of waste disposal in Accra, it is not surprising residents of Kwabenkya opposed to the execution of the sanitary landfill project.

## 5. Field survey

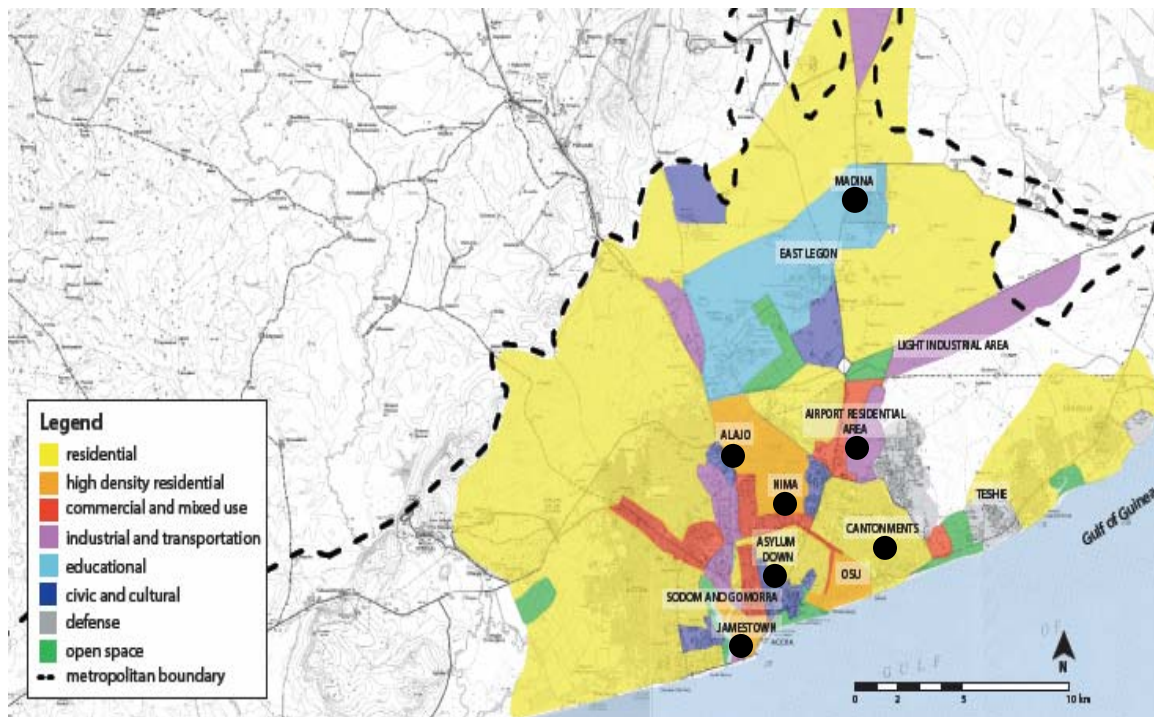
### 5.1 Introduction

The field survey was important in a number of ways. First, the model used makes clear how important the target group is to the implementation of policies. For that matter the target group was sampled based on various issues as it relates to the use of the model. Second, it was important to find out how they are affected by the waste problem, which was necessary in finding out whether there was the need for an effective SWM system. The target group in this case is the households since they are the major stakeholders of waste generation. They generate 1170 tons of SW from the total of 1800 tons (Kpodo, S., and Chinibuah, F., personal communication, 1<sup>st</sup> March 2006).

The chapter is organised as follows: the result of the survey; respondents' reason for choosing the type of disposal practice; respondents' inputs in the formulation and performance of policies; respondents' awareness of sanitation bylaws and enforcers; the extent to which the waste situation affects respondents' daily lives; and respondents' inputs that will help affect the waste situation

### 5.2 The result of the survey

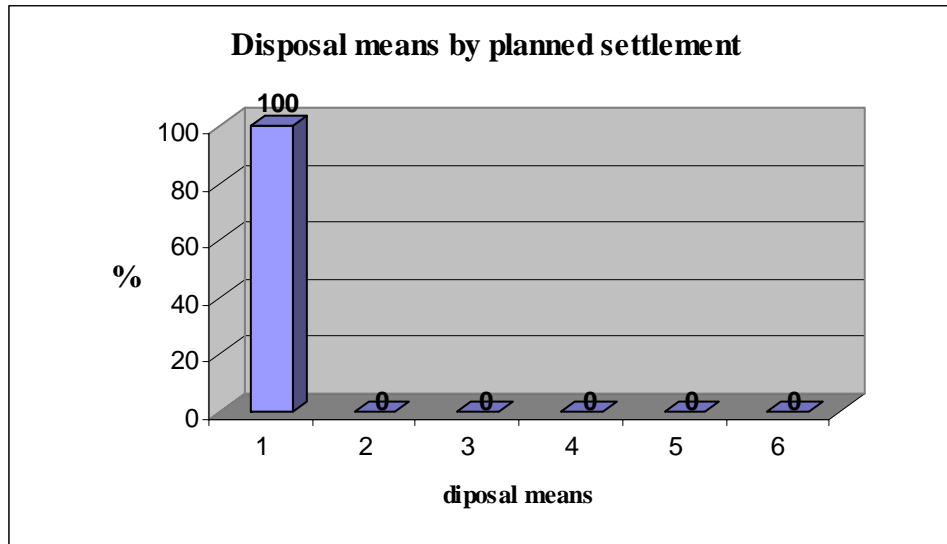
This segment concentrates on presenting the results of the field work at the study area while analysis of this is incorporated into *chapter 6* where discussion is made. The data was collected based on questionnaires that were administered in 7 communities of the Accra metropolitan area. 10 households were selected from each of the communities making up 70 households. 5 of the communities were unplanned settlements while the remaining 2 were planned settlements. The former include; Nima, James town, Madina, Alajo and Asylum down and the later include; airport residential area and Cantonments. The selection was made based on the fact that the unplanned settlements make up about 80% of the metropolitan area therefore receiving the greater number. The 7 communities that were sampled are represented by black spots among the 12 communities showed on the map in Figure 5.1. This segment concentrates on presenting the results of the field work at the study area



**Fig. 5.1:** A map showing the 7 communities (black spots) that were selected from the Accra metropolitan area.

### 5.2.1 Respondents reason for choosing the type of disposal practice

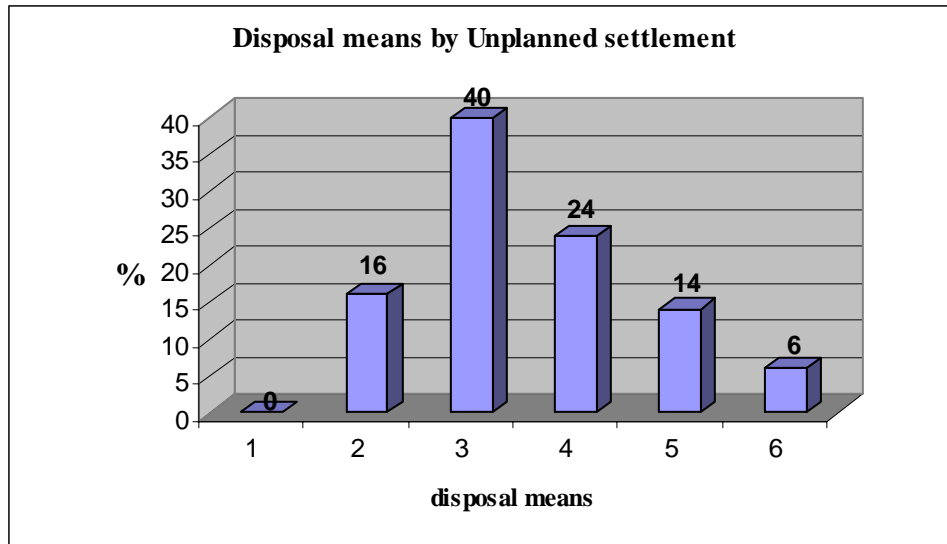
The results of the questionnaire from the two distinct communities (planned and unplanned) yielded these results. The Responses of the 20 households from the planned settlements indicated that out of the many different disposal practices including waste collected by agents, burned by households, public dump, dumped elsewhere, buried by household and others, the SW generated in this settlement was collected by WCs. According to them, that was the usual practice in the community. Figure 5.2 shows the distribution of the disposal practices in 2 the planned settlement.



**Fig 5.2: Disposal practices exhibited by the 20 households of the planned settlements.**

\* the numbers 1 – 6 of the disposal means shown on (X-axis) represents (1) waste collected by agents, (2) burned by households, (3) public dump, (4) dumped elsewhere, (5) buried by household and (6) others.

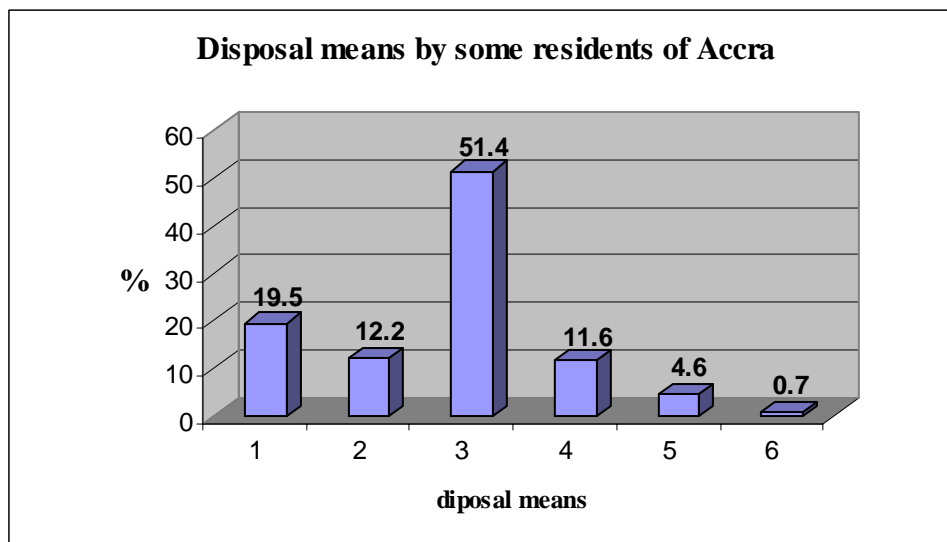
On the other hand, the responses from the 50 households of the unplanned settlements based on the same many disposal practices revealed that 20 send their waste to community collection points, 8 burns their waste, 7 took on burying their waste, 12 dumped their waste somewhere in the community, while 3 others had their own way of disposing their waste. Figure 5.3 shows the distribution of the disposal practices by the 50 households of the unplanned settlement.



**Fig 5.3: Disposal practices exhibited by the 50 households of the unplanned settlements.**

\* Interpretation to disposal means (x-axis) is same as figure 5.2.

In order to come up with data that can be relied upon and also give a better picture of the situation, figures from the Ghana Statistical Services (GSS) was used for a comparison to be made. In the 2000 Population and Housing Census, 625,746 residents of Accra were interviewed on their means of solid waste disposal. Figure 5.4 shows the distribution of the 625,746 residents of Accra.

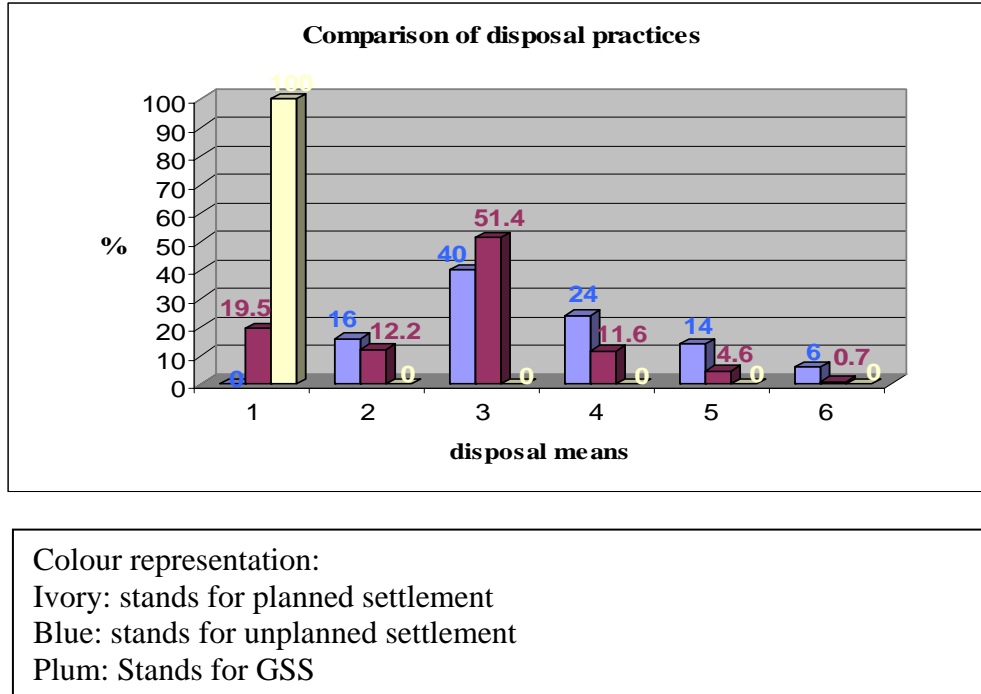


**Fig 5.4: Disposal practices exhibited by the 625,746 residents of Accra, GSS (2002)**

\* Interpretation to disposal means (x-axis) is same as figure 5.2.



Having had all the data from the 20 households of the unplanned settlement, 50 households from the planned settlement through the survey and 625,746 residents of Accra through interview made by GSS a comparison is made. Figure 5.5 shows a distribution of all three.



**Fig. 5.5: Comparison of disposal practices from survey and GSS.**

\* Interpretation to disposal means (x-axis) is same as figure 5.2.

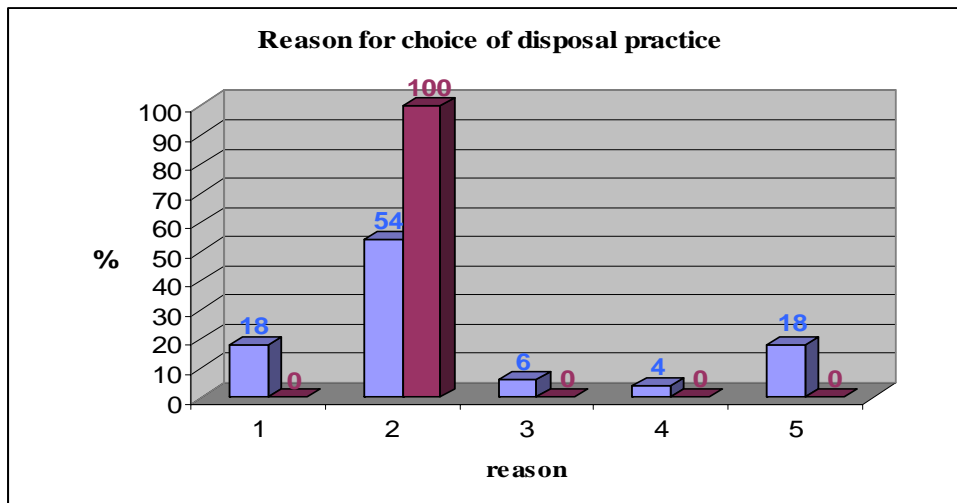
From figure 5.5 it is revealed that as far as the survey was concerned no waste collection (door-to-door) by WCs takes place in the unplanned settlements. This might not be the case for the whole of Accra since the interview performed by GSS on all kinds of settlements showed that 19.5% of waste is collected by WCs.

Apart from waste collection by WCs that is evident in the planned settlement of the communities in the survey, the remaining practices were not prevalent so the rest of the discussion will be centred on the unplanned settlement and GSS values. Since the study identified malaria, diarrhea cholera as the major causes of sickness in the metropolis that is the more reason why an effective SWM system is needed, concentration will again be on the disposal means 3 and 4 which is a major contributing factor. For (3) 40% and 51.4% of publicly dumped waste from unplanned settlements and GSS respectively goes into AMA's official dumpsite (community containers) and unofficial dumps. This implies that the percentage that doesn't go into the official dumps results in the heap of waste

found in most places in the city that contributes to adverse health concerns (see sub chapter 4.2). For (4) 24% and 11.6% of waste dumped elsewhere from the survey and GSS respectively which results in the blocking of drains becomes a favorable environment for breeding carriers of diseases. The surface and groundwater is also polluted from this practice (see sub chapter 4.2).

Again looking at the statistics from the survey and that of GSS to find out how reliable they are might not be an ultimate achievement. This is as a result of the fact that the result of the unplanned settlement is from 5 communities while that of GSS is the whole of Accra. But whether 40% or 51.4% for public dump and whether 24% or 11.6% is a serious problem to deal with. The Government of Ghana (2003) reported that much of the waste generated is disposed of on land and into the sea and other water bodies with little or no treatment before disposal.

In trying to find out the reasons behind the disposal practices exhibited in the survey, several reasons were raised by sanitation officers, WCs, and residents. But focusing on the prevalent ones in order to measure their effect, the study selected the following based on answers provided by households; Inheritance, practice in the community, thought in school, from peers, no collection systems. Carrying out this task to identify households' reason for a disposal practice, figure 5.6 shows the distribution of the selection from the planned and unplanned settlement.



Colour representation:

Plum: stands for planned settlement

Blue: stands for unplanned settlement

**Fig. 5.6: Distribution of households' (planned and unplanned) reason for adopting a particular practice**

\* the numbers 1 – 5 of the reasons for disposal practice shown on (X-axis) represents (1) inheritance, (2) practice in the community, (3) others, (4) from peers and (5) no collection point.

The different solid waste practices within most places in the 7 communities of the metropolitan area are guided by one of these criteria. In the planned settlement reason number 2 is the main motivation for the disposal practice they exhibit while 54% of the same reason is by the unplanned settlement. Reason number 1, 3, 4, 5 received no response from the planned settlement. 18% adopted the practice through inheritance (from a member of the family). 18% took to the fact that there are no places to send their waste hence the kind of practice they have adopted. 6% selected the kind of practice based on one of these criteria; work they do, conditions they find themselves in, environmental reasons. 4% were introduced to it by their peers.

### **5.3.2 Respondents inputs in the formulation and performance of sanitation policies**

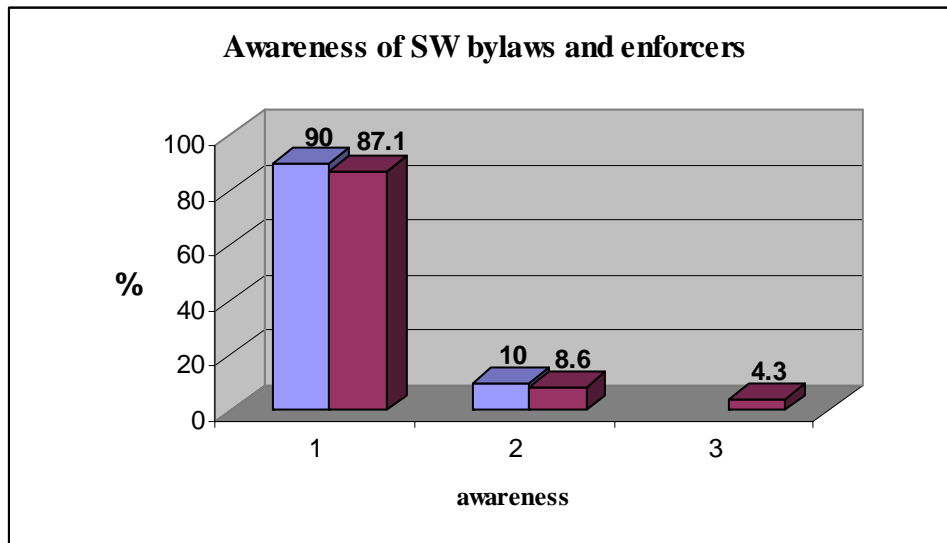
The 70 respondents of both the planned and unplanned settlements admitted that the problem of solid waste in Accra is a very serious problem and so inputs in devising strategies for the problem should be from all. None of the responses revealed that households' are part of the formulation of policies. The aspect of the National Sanitation Policy on SW sets out targets for individuals, communities, organizations... etc. 92.9% of the responses showed that they knew nothing about the policy, what it is made up of and what is required of them. Only 7.1% knew that there is a sanitation policy but also admitted that with the policy's value of 200,000 cedis (156 DKK) they were not ready to go into it.

The policy which is not known by many of the households proves that attempts to achieve the goal of the policy will be difficult. All the 70 households pointed out that they can only affect the waste situation by practicing the practice they are used to in the community, even though that might not be the paramount solution.

### **5.3.3 Respondents' awareness of SW bylaws and enforcers**

AMA has a number of bylaws to guide the effective administration of SW and maintain a clean environment through the work of the enforcement personnel. Figure 5.7 shows the

distribution of respondents' awareness of SW bylaws and enforcers from the planned and unplanned settlement.



Colour representation:

Blue: stands for awareness of SW bylaws

Plum: stands for enforcement personnel

**Fig. 5.7: Distribution of households' (planned and unplanned) awareness of SW bylaws and enforcers**

\* The numbers 1 and 2 of SW bylaws represents no awareness about sanitation bylaws and awareness about sanitation bylaws respectively. Numbers 1, 2 and 3 of enforcement personnel represents no existence of law enforcers, monthly visits of law enforcers and yearly visits of enforcers respectively.

Even though many see the bylaws as inadequate (Agbesienyale, L., personal communication, 23<sup>rd</sup> of February 2006; Quansah, K, and Kambozul, B.C., personal communication, 28<sup>th</sup> of February 2006), it is surprising to report that out of the 70 households that were sampled, 90% didn't know anything about any SW bylaws, only 10% did. Almost all the respondents admitted that in the olden days, enforcement personnel did very well in putting people on the alert as far as cleaning their own environment was concerned. They did as much as summoning people to court when their environment was not clean. 87.1% of the respondents acknowledged that it was difficult to say if the enforcers still existed. 8.6% of the respondents disclosed that the

enforcement personnel visit monthly. The remaining 4.3% admitted they see them once a year.

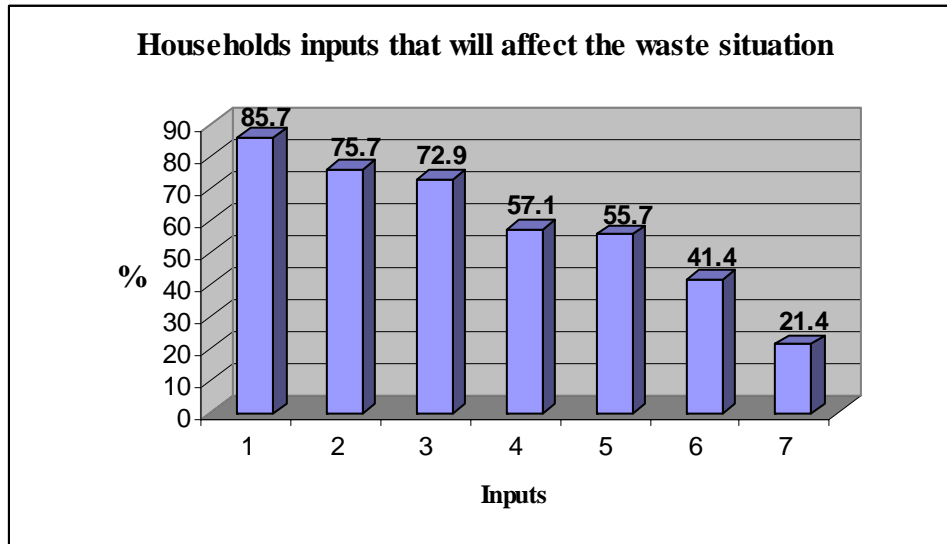
#### **5.3.4 The extent to which the waste situation affects respondents' daily lives**

The amount of solid waste generated and uncollected, buried and burned, dumped officially and illegally have resulted in many effects on the respondents. In the planned settlement where 20 households were chosen for the study, 60% declared that they spend 15000 cedis (11.7 DKK) on insecticides every month against mosquitoes. 25% disclosed that they use insecticides once in a while (between 1 and 6 months). 15% divulged they use nothing. From the same settlement 75% acknowledged that they visit the hospital for checkups and diseases like hypertension, and not the deadly malaria, cholera, diarrhea. The remaining number visit the hospital for some malaria related cases once every 6 months or more.

In the unplanned settlement where 50 households were chosen for the study, 90% disclosed that they spent approximately 60000 cedis (47 DKK) per month on insecticides to protect them from mosquitoes. 10% spend as much as 100000 cedis (78 DKK) on the same situation. Almost all the 50 respondents admitted that they visit the hospital 1 to 4 times a month on malaria, cholera, diarrhea and others. The respondents from these communities never visited the hospital for checkups. About 1/5 to 3/5 of the income of the 50 respondents from these communities is used in one way or the other on hospital and dispensary.

#### **5.3.5 Respondents' inputs that will help affect the waste situation**

With this part of the work, households were given the chance to make their own suggestions based on what they felt would be the best way forward. With the different views and ideas recorded, reporting was based on opinions and ideas from more than 5 households. Figure 5.8 shows the distribution of respondents' inputs that will help affect the waste situation.



**Fig. 5.8: Distributions of respondents' inputs that will help affect the waste situation.**

\* The numbers 1 – 7 showing inputs on (x-axis) represents (1) training of officials, (2) announcements, (3) paying people to collect waste, (4) being each other keeper, (5) adequate waste containers, (6) payment for waste services, (7) burning & burying.

85.7% of the responses revealed that, in time past when “Samansaman” (corrupted form of summons) use to come around, there was a clean environment so there is the need to train more officials to take up the assignment they used to do to improve the state of the environment. 75.7% of the responses made clear that, having a lot of announcements on radio, TV and other means to create the awareness of the effects (both negative and positive) of solid waste will contribute since many do not know the price they pay when waste is not disposed off properly as revealed in the LFA and sub chapter 4.2. 72.9% of the respondents stressed that with the number of able bodied youth that are not working in the communities that are not easily assessible, the Assembly can pay such people to go around houses collecting waste like they do to bottles and metals and take to a point where trucks can pick up. 57.1% disclosed that if everyone be each others keeper it will help reduce especially those who dump waste in unofficial points; drains, streams etc. 55.7% also admitted that until the Assembly makes provision for adequate waste containers and collection points close to households especially in the unplanned areas waste will still be seen everywhere. Interestingly, 41.4% also admitted that they will pay for waste services based on a tangible improvement in the city's cleanliness after they were made aware of what households in the planned settlements enjoy from paying for

the collection of waste. 21.4% of the households still hold it that burning and burying the waste is the way forward since waste will not be scattered around in this respect.

## 6. Discussion

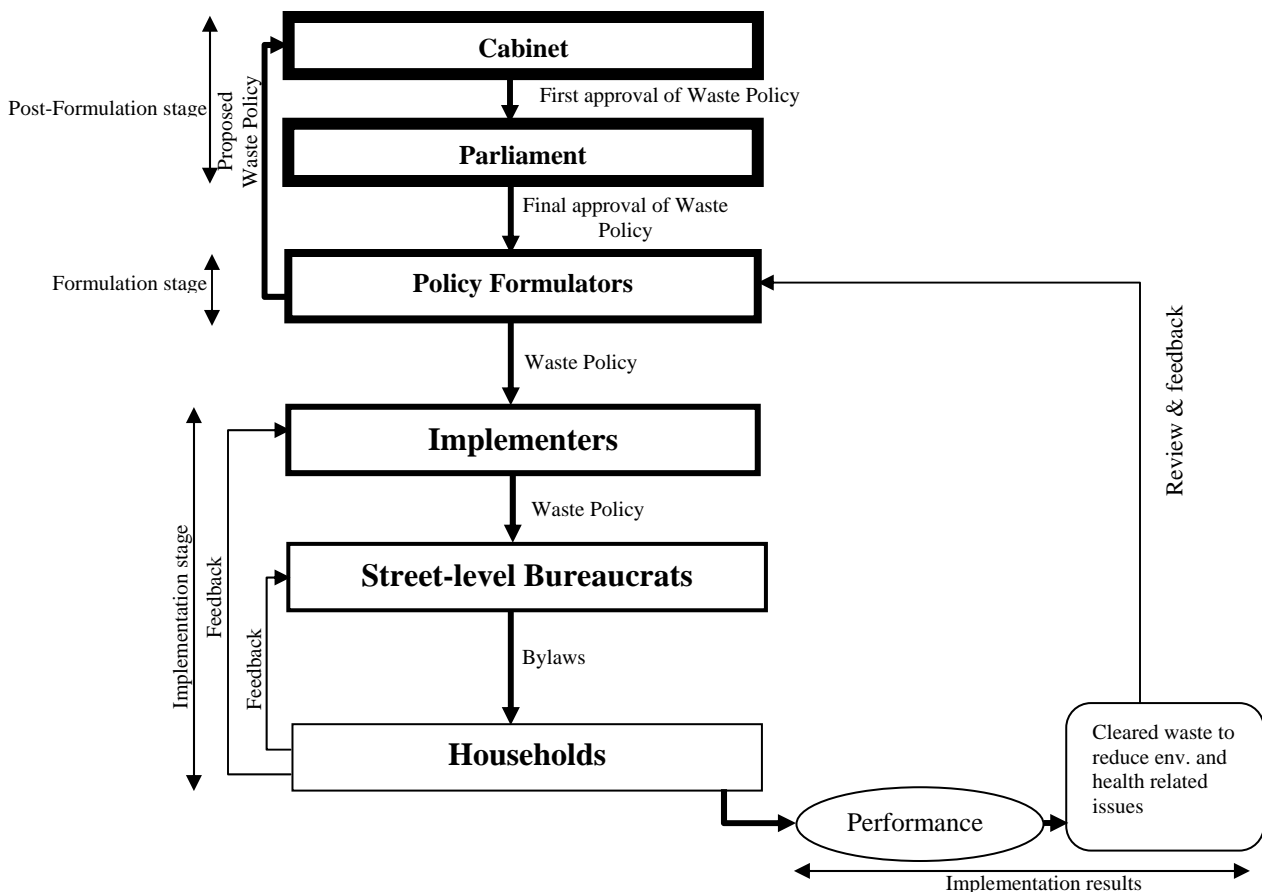
### 6.1 The SW regulation process

The process of SW regulation in Ghana is a system composed of many actors; cabinet, parliament, policy formulators, implementers, street-level bureaucrats and the target group. The cabinet and parliament function as post policy formulators. Their influence if any, on the proposed policy is not analysed since the model used doesn't identify their position. But apart from cabinet and parliament which doesn't function concurrently with the system the model makes it explicit in identifying the main actors' in policy formulation, the implementation process; implementers, street level bureaucrats and the target group. Each of these actors forms a system, but when this is arranged in order of legal influence that they have on the policy process the result is figure 6.1.

The conceptual framework: the model and the LFA are used in the discussion in the following reasoning. Apart from the former identifying the main actors, discussion with the use of the model is structured in this way; identifying the main hindrances within and among the main actors and the information flow back into the system. The part of the later which helped in identifying hindrances to implementation of effective SWM systems that is bad attitude of the public, lack of funds, low technological know-how, poor enforcement/awareness creation, legislation inadequacies and lack of political is discussed taking cognisance of the actors.

The chapter is arranged in 3 parts. The first part that is on the SW regulation process is a direct use of the model and the LFA explained in the theoretical approach. The second part which is on reflections of the model is to point how the model helped and how it didn't help in addressing the research question. Finally, a discussion on the possible ways of reaching an effective SWM system.





- The thickness of the boxes represents the hierarchy of the system from the highest order
- ➔ These arrows shows the direct flow of information in the implementation process before evaluation
- ➔ These arrows will be explained later in the discussion

**Fig. 6.1: Ghanaian waste regulatory system**

The cabinet which is the highest authority is made up of the President, Vice President, and additional 10 to 19 ministers who are appointed based on the skill and experience in respective fields, is responsible for the first approval of the waste policy. The policy is then taken to Parliament where necessary additions or subtractions are made before final approval. This is followed by the subsequent actors who work with the policy after approval. After the approval is given, the policy formulators; Ministry of Environment & Science (MES), Ministry of Health (MoH) and Ministry of Local Government and Rural Development (MLGRD) makes the policy readily implementable (Hayfron-Acquah, W, personal communication, 28<sup>th</sup> February 2006). The policy which doesn't go through a

design stage is crucial to the implementation of a successful policy (see subchapter 3.3). In studying intergovernmental policy implementation for environmental management programs in Australia and New Zealand May (1999 in Winter, 2003) found that the historic mistrust of agencies of government was partially overcome through commitment-building mechanisms in the policy designs. Some of the importance of policy design described in sub chapter 3.3 is what the policy might be missing.

The third are the implementers who are made up of the National Environmental Sanitation Coordinating Council (NESPCC) within the MLGRD framework and AMA. The former is responsible for the software aspect of the implementation while the latter is responsible for the hardware aspect of the policy implementation process.

But in addition to the basic functions mentioned in chapter 4, AMA is supposed to redesign the SW Policy<sup>3</sup> which is for the entire country to suit their local communities but in the case of Accra the same policy is used. The reason for this will be understood later in the discussion. The street-level bureaucrat which is made up of personnel from the WMD and EHSD enforces the regulatory standards and creates awareness. They produce a manual which outlines the obligations for the target group, households. The households are at the bottom of the system and they are the target group of the SW Policy.

### **6.1.1 Formulation of policies**

SWM has been identified as an essential factor which contributes to the health, productivity, welfare of the people of Ghana and also protecting the environment (see LFA and chapter 4). Notwithstanding the fact that SWM has been identified as a key element underlying health and human development in Ghana's "Vision 2020", the situation on the ground leaves much to be desired. Environmental regulation has been used in Ghana as one of the strategies to manage the environment. This is evident in the number of policies relating to environmental protection such as; the National Environmental Policy 1991, Local Government Act 1990, Environmental Protection Agency Act 1994, Water Resources Commission Act 1996, National Building Regulations 1996, National Environmental Quality Guidelines 1998, Environmental Assessment Regulations 1999, Environmental Sanitation Policy 1999, and, Landfill

---

<sup>3</sup> Even though there is no particular policy called SW policy, the environmental sanitation policy gives specifics to SW, and liquid waste issues, therefore the name SW policy in the report.

Guidelines 2002 and the Guidelines for the Management of Health Care and Veterinary Waste 2002.

The formulation of the SW policy which is centered on three main bodies lacks the contribution of households' and other stakeholders. Paquin and Sbert (2004) points out that *"the effectiveness of environmental protection efforts may be greatly enhanced by the involvement of stakeholders and the public at large"*. It was revealed in the survey (see sub chapter 5.3.2) that households' have never been part of the problem not to talk about being part of solving it. Involving stakeholders and the public at large is important since these efforts demand a certain level of continuity which strengthens environmental policies (Paquin and Sbert, 2004). Again households' involvement raises a level of ownership of the objectives in the policy which according to Paquin and Sbert (2004) *"they will tend to ensure that their efforts are not uselessly set aside with changes of administration or budget cuts"*. Lack of involvement of the households' results in the actors in the formulation of the policy not understanding the concerns of households (Paquin and Sbert, 2004). Since the policy formulated is directly implemented, the absence of households is a significant impediment to the implementation of such a policy.

### 6.1.2 Implementation of Policy

Once the SW policy is approved implementation follows. Specifically, the software aspect of the SW policy is implemented by MLGRD through NESPCC. NESPCC is made up of numerous governmental agencies and NGO'. The implementable policy is handed over to AMA to expedite the hardware aspect of implementation in the local community. The policy makes clear the need for a redesign by AMA to suit the local conditions but with the low technological know-how among the personnel in the fields of SWM in Accra, the same policy is implemented in the local area (Hayfron-Acquah, W, personal communication, 28<sup>th</sup> February 2006; Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006). The problem of low technological know-how of personnel is better expressed in the words of Kpodo, S and Chinibuah, F, (personal communication, 1<sup>st</sup> of March 2006) *"there is nothing in our universities about sanitation. They are only doing it at the masters' level and they don't come out to work. Some of us have gone through the same system we are not allowed to do the degree too. So we have to look at proper training of professionals for those who are actually on the ground"*. In addition to the issues of technology, it was pointed out that workers do not give their all

since “remuneration is also bad, public ridicule of waste, the work is not motivating enough. Even within your own family, they call you ‘bollaman’<sup>4</sup> (ibid).

Then even if the personnel are ready to work, the political environment influences the delivery of waste services (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006; Kpodo, S and Chinibuah, F, personal communication, 1<sup>st</sup> of March 2006; Hagan, K, J, personal communication, 15<sup>th</sup> February 2006). If plans are made to decongest the city most of the time the action is procrastinated, while littering keeps going on in the city (Kpodo, S and Chinibuah, F, personal communication, 1<sup>st</sup> of March 2006). The construction of the kwabenya sanitary landfill was supposed to serve the Accra metropolis for next 25 years knowing some of the problems identified with open dumping. 35% of the project cost was sponsored by the Department for International Development (DFID) with the Government of Ghana contributing only 11.36%. Upon the start of the project a section of the site was encroached upon implying that the size of the project was to be reduced significantly (Quaye, R., personal communication, 8<sup>th</sup> of March 2006). The Government of Ghana was supposed to resolve the misunderstanding created. But with the time that elapsed without the government taking any position to resolve the problem, a project of 748 billion cedis (about 584 million DKK) was abandoned. According to Hagan, K., J (personal communication, 15<sup>th</sup> of March 2006), this is as a result of the fact that the “government fears that any firm or stern implementation and enforcement may loose the votes in elections”. This is the extent to which issues about SW has been affected. Many also argue that there is always a show of concern by politicians on platforms and other fora, but their involvement in the implementation by way of providing resources and other needed inputs is quite absent (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006; Kpodo, S and Chinibuah, F, personal communication, 1<sup>st</sup> of March 2006; Quaye, E., personal communication, 7<sup>th</sup> of March 2006).

This is what has been attributed to inadequacies in legislation. An evident signal to this is the lack or absence of criteria and standards regarding targets and outputs for regulating SW. The SW Policy has an overall goal of clearing Accra of its waste. Some of the main outputs and targets set to accomplish this are as follows:

- National Environmental Sanitation day is established by legislation and observed regularly;

---

<sup>4</sup> Bollaman refers to garbage man

- The National Environmental Sanitation Policy Coordination Council is established within MLGRD;
- Environmental Sanitation technologies are under regular review and continuous improvement;
- All SW generated in urban areas are regularly collected and disposed off in adequately controlled landfills or by other environmentally acceptable means;
- Environmental standards and sanitary regulations are strictly observed and enforced;
- The majority of environmental sanitation measures are provided by the private sector.

From the listed outputs and targets, it's difficult to point out the standards that this set and how measurements can be done to affect the situation. The absence of standards and criteria means that street level-bureaucrats do not have a reference point when carrying out their duties, thus ineffectiveness in this case cannot wholly be attributed to these officers.

Most of the street level bureaucrats do not have the requisite skill to change behavior (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006; Hayfron-Acquah, W, personal communication, 28<sup>th</sup> of February 2006). As Quansah, K., and Cosmos, B., K. (personal communication, 28<sup>th</sup> February 2006) points out *"they have completed basic training schools for the past 20 years, they are in the field, they've not enjoyed any training so how do you expect them to use 1960 notes to solve 2006 problems, it cant be possible"*. Kpodo, S and Chinibuah, F, (personal communication, 1<sup>st</sup> of March 2006) supports this view adding that schools in Ghana do not have courses on these issues to train people who will take up these positions and will know what they do. Many also argue that the laws in the books are not enough, but some ask the question whether the ones present have been adequately enforced. This question is better answered by the results of the survey which revealed that about 87.1% of households found it difficult to say that street level bureaucrat's existed while 8.6% and 4.3% disclosed their monthly and annual visits respectively. Again in finding out what pushes the households to their disposal practice it was realised that *'the law'* was never a reason for the type of practice chosen. This is a direct evidence of the work of the street level bureaucrats.

On the other hand Quansah, K., and Cosmos, B., K. (personal communication, 28<sup>th</sup> February 2006) expressed awareness creation through this; *"we have 2700 people moving round daily in all the districts in Ghana. And at least they inspect a minimum of 10*

*houses a day. So at least they interact with people, so even if they ask you to cover your refuse bin, that alone is something. That is awareness creation and is one to one which is even more effective*". This suggests that the work of the street level bureaucrats in awareness creation has been a success, but this could be misleading when likened to the disposal practices revealed from the survey and interviews conducted by Ghana Statistical Services. The result showed that the percentage of waste that is 'dumped unofficially' which results in heaps and the 'found in other places' attests to the extent of awareness creation.

Some of their ineffectiveness has also been attributed to administrative and political interferences and to some extent logistical provisions (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006; Kpodo, S and Chinibuah, F, personal communication, 1<sup>st</sup> of March 2006). When people go against the law and they are taken to the appropriate authorities, there is a lot of resistance some of which is as a result of the extended family system in Ghana; 'he is my uncle, my brother, he my auntie'. when this happens, the confidence of the already inefficient officer is dented implying that moving around (enforcing laws and creating awareness) in that particular area is forbidden by the personnel's own discretion (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006). Also the attitude of the public with respect to the dumping practices reported in the survey is connected to the quantum of fines when one goes against the law. AMA byelaws for SW shows that "*where a person commits any of the offences specified in paragraph 10 of the bylaws, he shall be liable on summary conviction to a fine not exceeding 200,000 cedis ( about 156 DKK) or in default of payment to a term of imprisonment not exceeding six months or both*" (AMA, 1995). Compliance as they say must be economically a better option compared to other enforcement strategies. But "*if it is more expensive to comply with a requirement than to pay a fine or penalty, the regulated community clearly does not have any incentive to comply*" (Paquin and Sbert, 2004). This is the situation in Accra where households' are ready to pay a fine because it is not deterrent enough (Quaye, E., personal communication, 7<sup>th</sup> of March 2006; Quaye, R., personal communication, 8<sup>th</sup> of March 2006; Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006). On the other hand the slow pace of the judicial system makes it difficult to take offenders to court since it takes a longtime to deal with a case.

The issue of funding is very crucial to any effective SWM system. Many of the technocrats who were interviewed make clear that funding is a problem because of the

inadequate resources provided by the government for SWM. Presently, AMA pays on behalf of the households who operate with the community container system. The problem of funding affects the delivery of service by the WCs. Kpodo, S and Chinibuah, F, (personal communication, 1<sup>st</sup> of March 2006) points out that *“people want to come in but when they hear about the payment problems they shift...the profit aspect of the work is always with AMA because all the time we owe contractors for about 6 months and that is the profit aspect. They take loans to work and each time they pay, they take all the money from them and they stay without money and that money stays with AMA”*. Funding deters many WCs from coming into the system. Accra is growing and more hands from WCs are needed but the absence of the job motivation or incentives keeps most of them away. But observations made and the survey brings another picture. It was revealed in the survey that many of the households especially those living in the unplanned areas who are actually not paying for the service are unaware of what would be saved if they pay for SW services. Knowing how much is spent on hospital and dispensary, most of them made it clear that they will pay for waste services but on condition that the services would be improved. So it can be said that funding has been a problem as a result of budget constraints, political will to push more resources into SW which is a preventive mode of delivering health service and also for reasons of inadequate awareness creation on the part of the street level bureaucrats.

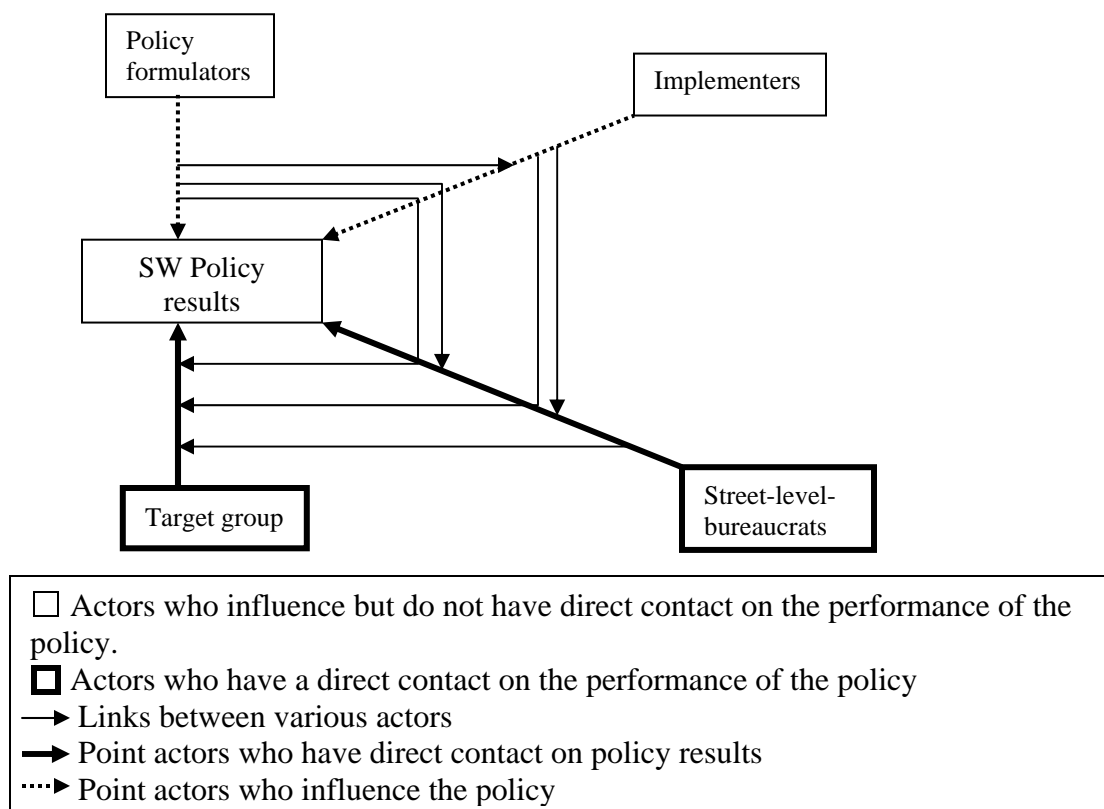
### 6.1.3 Implementation results

Winter (2003) points out that the behavior of street-level bureaucrats has a reasonable influence on policy implementation. The problems identified which surrounds the street level bureaucrats who are in close contact with the households' affects the performance and the outcome of the SW policy. The households who also act normally on the norms in the specific community affect the performance of the SW policy. Other issues raised in the preceding section which starts right from the policy formulation stage through the implementation stages confirms to the state of SWM in Accra.

When the SW policy was implemented, to be able to measure its performance, there was the need for monitoring and evaluation to get the outcome in relation to the goals which was supposed to send signals to all the stakeholders' in order to adjust or change some aspects to yield results. Agbesienyale, L. (personal communication, 23<sup>rd</sup> February 2006) pointed out this *“we make policy guidelines and the rest but monitoring and evaluation of the performance of policies is mostly a bit of a problem. We don't do much in that area. So that is even the reason for lack of statistics, because you need to get statistics before*

*you can evaluate your policies to find out whether they are even working or whether they have been implemented. So many things are happening, so many projects etc, but at the end of the day we don't even know how much or what the success is, or how well we have performed".*

This point leads to suggest that most of the measurements made are qualitative, which are based on efforts made by the various actors (performance) and not a detailed analysis to get the outcome of the policy which gives information on how far the implemented policy is, from the Policy objective. Winter (2004) points out that in a situation where implementation result is measured in terms of performance and not outcome, attention should be focused on the feedback. Again Pressman and Wildavsky (1973) point out that if implementation is by different bodies, then the success of the policy depends on the coordination amongst them (in Winter 2003). They again argue that if action depends on a number of links in the implementation chain, then the degree of collaboration that is required should be close to 100%. Putting these facets together, figure 6.2 shows a diagrammatic representation of the links between the various actors (from integrated implementation model) and the feedback.



**Fig. 6.2: the links and feedback mechanism (adapted from integrated implementation model)**



In trying to look at the links between the various actors involved in reaching the goal of SWM in Accra, certain questions were asked during the interviews. For example when the interviewer asked the question about the coordination between the numerous actors, Quansah, K, and Cosmos, K, B (personal communication, 28<sup>th</sup> February 2006) replied *“we have a very good relationship with all the stakeholders. We sit on their ministerial meetings and they sit on ours”*. Many of the interviewees including Samuel Kpodo, Frank Chinibuah, and Ebenezer Quaye support this claim. One will argue that if there is good coordination which involves been part of other stakeholders meetings, then the flow of information should be close to perfection for every actor to get hold of information about programmes and activities of common interest. But policy formulators do not have detailed information of implementers’ workings and so it is the least in the hierarchy. Implementers as well do not have information involving the same process and this seem to go on throughout the whole system. This was evident when Lewis Agbesienyale of the main implementing body, MLGRD was asked in an interview about the state of waste management in Accra. The response was *“go to AMA and ask them, they will tell you the state...but you can also just by sensing the air around, you can see how they are performing”*. Again right from the introduction of the report, there are different values pertaining to ‘how much waste is collected’ by different bodies. Households’ do not have access to the SW policy and even the laws they are supposed to adhere to. This makes it difficult for households’ to understand the role they are supposed to play in affecting the policy positively. This implies that the only way they can affect the performance of the policy is through their usual disposal practice which might not be the best for meeting the goal of the Policy.

The feedback concept which is information flow back to decision makers and all other actors in the implementation process to make certain that policies and other behavioral characters are endlessly checked and assessed doesn’t work in the system. This is as a result of the fact that there is no monitoring and evaluation of the SW policy combined with the fact that there are no set times for review that will contribute to getting this information flow back to the process for a change or redesign. With all the problems identified; within and among actors; poor measurements of policy, has affected the effectiveness of the SW policy. So it is not surprising that since the implementation of the SW policy in 1999 it has not achieved any significant results.

## 6.2 Reflections on the model

Instead of focusing on single actors or process, the research took the challenge of using a model to analyse the whole implementation process. The model helped in identifying who the actors in the implementation process are and thus lessened the burden of their identification. It assisted in the description of the role of the actors in the implementation process. The adoption of the model helped in analysing issues from a broader perspective. This is because instead of focusing on input and output, the whole system of input, processing, output, feedback was analysed. It helped in getting understanding of the interconnectedness of components of the whole implementation process. It also helped in understanding that implementation is an unremitting process and not a detached phenomenon. Finally it assisted in identifying the degree at which each of the components might contribute or hinder the implementation of an effective SWM system in Accra by analysing the existing policy.

Even though the model proved to be advantageous in analysing the research question based on the points in the preceding paragraph, it however posed some limitations in data collection which may have implications on how far the results can be used.

The Ghanaian system makes it clear that the policy formulation stage is made up of 3 ministries. Since the SW policy goes through a post-formulation phase which is made up of politicians it would have been interesting to analyse the effect this has on the formulated policy. But the model doesn't make it clear how to analyse this phase. This makes it difficult to come up with an analysis to show where and how the post formulation actors influence on the subsequent implementation process. Since this was not done, the only way to proceed was to make an assumption that there are no post-formulation disturbances which might not be the case.

Winters model makes clear how important the socio-economic context is to the success of implementation. The socio-economic context in most developed countries is many at times said to be conducive to positively affect policy execution. This means that much emphasis is laid on actors from the policy formulation to the implementation results. The situation in Ghana is different. Many other actors can be seen to be part of the context since they are not part of the major actors in the implementation process. While some of the actors affect the policy negatively, identifying the role of others is difficult. This is as a result of the fact that the model has not made explicit how the socio economic context

can be studied in an environment where it plays a very important role in policy formulation, policy implementation and its results.

Even though the model has helped in answering part the research question, there is the need for studies to be conducted to show how to make a better analysis on the socio-economic context in which the process goes on.

### **6.3 Possible ways of realising an effective SWM system**

After identifying some of the hindrances within the system, it was important to look at how some of these issues could be addressed to bring a positive change in the system. The section makes use of responses from interviewees within the field, inputs from households whose voices could only be heard through this means and some of the easily applicable experiences from other places. Concentration will be based on aspects of household participation, enforcement and awareness creation, training, monitoring and evaluation within the formulation of the policy, implementation of policy and the implementation results.

#### **6.3.1 Formulation of the policy**

In addition to the number of ministries in charge of the formulation of the SW policy, it has been revealed through studies that households' involvement will be an added advantage to the success of the policy. An effective environmental protection is to a great extent improved by involving the households (Paquin and Sbert, 2004). Early involvement of the public contributes significantly to the acceptability of the proposed policy since they are part of the process (Palczynski, 2002). According to Paquin and Sbert (2004), if households are involved, they tend to take ownership of policy goals, which means that, *"They will tend to ensure that their efforts are not uselessly set aside with changes of administration or budget cuts"*. Many argue that fear of losing power is one of the reasons for restraining the involvement of the public (Paquin and Sbert, 2004; Hagan, K., J, personal communication, 15<sup>th</sup> March 2006) however *"government agencies that act transparently and involve the public are likely to gain authority by earning respect"* (Paquin and Sbert, 2004). Again studies by the World Bank shows that citizens or households become involved when they realise that their demands are been taken into consideration and they form an integral part of the process (World Bank, 2004 in Paquin and Sbert, 2004).

### 6.3.2 Implementation of the policy

It is argued that the knowledge base of SW managers is important for effective implementation. The concerns expressed in literature and the interviews in Accra prove that it is very important that more avenues for training are opened for professionals or managers who are responsible for the management of SW. When this is done, issues like the unplanned actions they exhibit will be curbed (Hayfron-Acquah, W., personal communication 28<sup>th</sup> February 2006). According to the many interviewees and 85.7% of households the work of the street level bureaucrats need improvement by training these officers, so that their efforts will be felt in the whole system. But with the situation in Accra where there is scarcity of human and financial resources for compliance and enforcement (Quansah, K., and Cosmos, B., K, personal communication 28<sup>th</sup> February 2006), there is the necessity to create willingness of the households and the regulated community to comply through other means (Paquin and Sbert, 2004). This is not to say that the efforts of the street level bureaucrats should be replaced, but doing this will reduce the enforcement burden and increase the effectiveness of protecting the environment by the households themselves or the regulated community (Paquin and Sbert, 2004; Palczynski, 2002). Willingness can be achieved by creating awareness among all about the adverse effects of their actions (Paquin and Sbert, 2004). According to 75.7% of the responses from the households, this can be done through radio and television announcements. The aspect of radio and television announcement was one of the strategies taken by the Ghana Police Service to really educate the populace on the numerous accidents killing many people, and to a great extent it has received a lot of attention by the populace. Making households or the regulated community aware of what is expected of them is crucial for implementation that will affect the performance and outcome of the policy (Paquin and Sbert, 2004). This comes out of the fact that an informed public strengthens enforcement and compliance (ibid).

After all the awareness creation, enforcement and changing behavior to comply, Quansah, K, and Cosmos, K, B (personal communication, 28<sup>th</sup> February 2006) points out that there is the need for offenders to be punished. The penalty of 200,000 cedis (156 DKK) is not deterrent enough and so there is the need for an increment in this fee (ibid). According Quansah, K, and Cosmos, K, B (personal communication, 28<sup>th</sup> February 2006) an increment in the fee will certainly lead to the behavioral change that is being preached. This is as a result of the fact that households or the regulated community will pay a fine if it is cheaper than complying (Paquin and Sbert, 2004; Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006). For offenders to be punished many

propose that AMA need to gain support from the Judicial Service. As it has been done with the Police Service and the Judicial Service, offenders do not need to spend 2 hours in the court for an offense to be dealt with. Some also argue that it shouldn't be 'fines, fines, fines', employing custodian sentences, where people are given special attire and pushed unto the street to cleanup as a 'SW offender' will help change behavior.

Presently households in the planned settlements are only paying about 40% of the SW collection while the slum pays nothing for waste collection. The collection is dependent on how much funds are available. It was evident at the end of the survey, that the slum are not paying for SW because they do not know how much they spend on the adverse effects of SW. It became apparent that households will pay for SW services if services are improved. Since the two communities are not paying for the full cost of SW services, there is the need for a sustainable funding for sanitation (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006). One school of thought suggests that since electricity and water has never been free in Ghana, factoring a percentage of about 0.5% to bills and pushing it into the sanitation fund will be a good idea. This was raised at a forum where officials from Ghana Electricity Company were a bit alarmed, but Quansah, K, and Cosmos, K, B (personal communication, 28<sup>th</sup> February 2006) points out "*if we sit down with them talk deep modalities, we will be able to achieve something*". Another way of financing SW services as revealed in the interviews is through the Polluters Pays Principle (PPP). Industries with names that pollute the environment and go free can be made to pay for the collection of waste and the rest pushed into the fund (Quansah, K, and Cosmos, K, B, personal communication, 28<sup>th</sup> February 2006; Kpodo, S and Chinibuah, F, personal communication, 1<sup>st</sup> of March 2006). Making the system work with some of these facets, will contribute to affecting implementation results.

### 6.3.3 Implementation results

After the issues in the actual implementation are accomplished, monitoring and reviewing is important in affecting the performance and outcome of a policy (Agbesienyale, L., personal communication, 23<sup>rd</sup> February 2006). Periodic monitoring and reviewing the performance of a policy is a way of gathering the necessary information about how far the policy goals have been attained (Paquin and Sbert, 2004, Agbesienyale, L., personal communication, 23<sup>rd</sup> February 2006). This will then be important information that can be feedback into the process; to all the relevant actors. The feedback gives the system an opportunity to regulate its behavior, which means that any deviation from the goals can be identified and rectified in order to achieve the goal of the policy. The feedback

concept enables the policy formulators and all the relevant actors to take stock of the result of their efforts. Since the feedback is not a 'one stop shop', making it a reiterative process will help in achieving the effectiveness in household SWM.

## 7. Overview, conclusions and perspective

### 7.1 Overview of the report

SW has been identified as one of the major contributing factors to the fading health concerns of the citizens of Accra and Ghana as a whole. It has also resulted in other numerous adverse environmental effects (see LFA). Many policies have been put in place, some of which work directly to affect the situation like the National Sanitation Policy which was agreed upon by parliament in 1999. The aspect of the Policy on SW is supposed to clear Accra of its waste by the year 2020. Even though the policy was implemented in 1999, only 1200 tons out of the 1800 tons of SW is collected. Identifying the contribution that makes up the 1800 tons, it was realised that households contributed 1170 tons. Noting that the remaining 630 tons even though might not receive the best disposal practice is almost always collected from generators premises. This implies that almost all the waste from other sources is collected. Using the 1200 tons of collected waste for calculations, about 51% of SW generated from households is not collected and disposed off properly. Recognising the threats of the 51%, it was important to find out the factors that have hindered the implementation of an effective SWM system and the benefits that will ensue if this fraction is dealt with.

Therefore, the purpose of the study has been to answer the following question:

**What are the main hindrances to the implementation of an effective solid waste management system in Accra-Ghana and how can these be addressed?**

Based on the question posed, the report includes descriptions and analysis of the following:

- As the conceptual framework; integrated implementation model and Logical framework analysis.
- As literature review; the SWM system and the results of not managing solid waste effectively.
- As a discussion; the field survey and the barriers to the implementation of the existing policy as might be for an effective SWM system. And possible ways of realising a system that will affect the health situation and the greater environment in general.

The conclusions made are based on:

- Adverse effects of SWM.
- The main hindrances identified.
- Possible ways of affecting the waste situation.

## 7.2 Conclusions




SW that has not been managed effectively over the years has resulted in various health concerns, flooding, adverse environmental effects etc (see LFA). To deal with the problem, the National Sanitation Policy is among the many policies that were put in place to regulate solid and liquid waste. But with the study emphasis on SW, the part of National Sanitation Policy for SW has been considered for discussion. Even though many argue that it has contributed to reducing the problem, Accra's health situation is getting worse everyday. It was revealed in the study that a minimum of about 65% of reported cases at the outpatient visits in Accra are sanitary related. But when it's about the mention of malaria, cholera, diarrhea then it is about SW, which takes the greatest percentage from other concerns of sanitation. This is so because the 51% uncollected household SW is disposed off through improper means. In as much as it contributes to the deteriorating health of the populace, it aggravates the perennial flooding in the metropolis, costing people lives and property

Based on the issues investigated and discussed, the study concludes the main obstacles to achieving an effective SWM system is due to the following. The study identified certain issues as being the root causes of the problem. At the end of the investigations made, even though some of the same issues were identified, it was at different positions; based on how important they contribute to the problem. Figure 7.1 shows a diagrammatic representation of these points.





**Fig. 7.1: Some of the hindrances to the effectiveness of SW policy**

-  Represent issues that were major contributing factors to the problem.
-  Represent an issue that cannot be established.
-  Represent issues that were not major contributing factors to the problem.

Even though many see the attitude of the public as being the major obstacle in solving the waste problem, the investigation made reveals the major obstacle as poor enforcement and awareness creation by the street-level bureaucrats. The result of the survey indicated that the households' behave the way they do base on what they know and what goes on around them. This can be seen from the result in figure 5.6 that shows that people do what they do not base on awareness creation or stringent law enforcement on the part of street-level bureaucrats but on inheritance, practice in the community, from peers and others. So in effect as far as the study is concerned the problem of bad attitude of households as seen by many is actually not a bad attitude but as people who practice what they know and what goes on around them. An important point to note is that, since they are affected by what they know and what goes on around them, any stern awareness creation on better practices might yield good results. The reasons for the underperformance of the street-level bureaucrats that has resulted in what is called bad attitude of the public, have been attributed to under training, political interferences and the extended family system in Ghana. Most of these issues dent the confidence of the officers thereby affecting their duties. These issues about the work of the street-level bureaucrats and their surrounding system can be seen to be the root cause of the attitude of the public towards SW and not the intention of the public to be 'bad'.

The other cause of the problem has been that most of the decisions taken by the waste managers to deal with waste are based on no better planning to affect the situation. This was evident in the fact that the sanitation policy, which is designed for the entire country, is directly used for the local community. But understanding that the country has different geographic, demographic and other such characteristics, it was advised by the formulators that the policy should be made to suit the local conditions. But many point out that the use of the same policy is as a result of the low technological know-how of SW managers. The knowledge base of these officers has been attributed to the lack of training for the personnel, which results from inadequate training institutions in the system.

Funding has been pointed out by many as a serious problem. A total of 3 billion cedis is spent monthly on SWM in the metropolis. An additional 1.8 billion cedis (1.4 million DKK) is spent monthly in organising clean-up exercises within the metropolis. Considering that AMA pays 100000 cedis (about 78 DKK) per ton of waste on behalf of households who generate waste of 1170 tons, implies that AMA needs about 3.5 billion cedis (about 2.7 million DKK) to deal with all the household waste. Bearing in mind that the amount spent on clean-up actually doesn't affect the waste situation, indicates that there are no funding problems even if the households do not pay for SW. Again, it was evident that the households in the unplanned settlements have not been made aware of what the benefits are, in paying for the services in SW. The problem was also identified in the 2 planned settlements that pay for SW not because they know the benefits but because it is a norm in those communities. Based on the points raised, it can be said that funding has been a major problem because the right decisions are not made to deal with the problem and poor awareness to pay for SW services.

Many pointed out lack of political will as a constraint to the success of the policy. The existing relationship between local and central government such as the ineffective degree of decentralisation as far as resources are concerned, the form and extent of citizens' participation in the public processes of policy making, the role of party politics in local government administration all affect the character of the management, and the type of SWM practice which is possible and suitable. More emphasis on curative measures has resulted in the establishment of a number of hospitals which are visible and as a result, little has been done on the preventive measures such as investing in SWM systems and technologies. Even though it cannot be denied that the political environment influences

the delivery of SW, the study was not able to point out that there was lack of political will to implement effective SWM systems due to how far the model used was able to analyse political actors.

The traditional way of formulating sanitation policies results in policies that are inadequate for achieving effectiveness in SWM systems. Apart from the 3 ministries responsible for this task, no other party contributes. This means that the worries and inputs of households and other important actors are left out. This results in policies that lack the contribution and concerns of other actors. This is not a major problem for SW managers in the metropolis since the same policy is used. But for the street-level bureaucrats, it is a problem since they cannot even identify a reference point as to what to be achieved.

It can therefore be concluded that the major problems to an effective SWM system is poor enforcement and awareness creation, low technological know-how and legislation inadequacies.

Trying to deal with these problems, responses from interviewees, households and some easily applicable literature were discussed. The outcome of that was that an effective SWM system could be achieved by training both SW managers and street level bureaucrats to discharge their duties with expertise. In this way, more awareness can be created by street-level bureaucrats and SW managers will be able to make better planning strategies. The households pointed out that having a lot of announcements on radio, TV and other means to create the awareness of the effects (both negative and positive) of solid waste will contribute since many do not know the price they pay when waste is not disposed off properly. They also stressed that with the number of able bodied youth that are not working in the communities that are not easily accessible, the Assembly can pay such people to go around houses collecting waste like they do to bottles and metals and take to a point where trucks can pick up. It was also pointed out that Households' contributions in the formulation of policies and the whole implementation process will help make them take ownership of the policy and contribute accordingly. More avenues for training will help lift the status of SW managers and street-level bureaucrats to discharge their duties accordingly.

In conclusion, it can be said that putting all these facets into practice will contribute to addressing the situation but might not solve the problem as it is. However, since the

model used addresses the feedback concept, the performance and outcome of these facets can be reviewed and processed back into the entire system of SW to find out how far the outcome is from the main goal.

### 7.3 Perspective

The study focused on the hindrances to the implementation of an effective SWM system in Accra. Undoubtedly, however, some of the analysis and findings can be applied to other domains as well. This section discusses the possibilities of generalisation of the results to the entire country and other developing countries. The ability to generalise is dependent on the validity, reliability and the sampling selection.

The methodological considerations used in carrying out the project, portray a high validity and reliability given the theoretical approach and the descriptions of methods Bent Flybjerg (2003) points out that a random sampling can be used “*to achieve a representative sample that allows for generalization for the entire country*”. The survey carried out in this report yielded results that were compatible with an investigation done by the Ghana Statistical Service. Given that the waste management system and the regulatory framework is the same at the national level, the findings can be applied to the rest of the country though the diversity of linguistic, demographic and geographic settings may necessitate that caution be taken in applying the measures.

Studies done in Egypt, South Africa, Kenya and Ghana which represent a cross continental character of solid waste management revealed that, each of the selected countries has its own, unique waste management practices and regulatory framework. It should also be emphasised that problems of SW which are important in Ghana might turn out less important in other developing countries. Hence, it must be stressed that the conclusions in this study only apply to Ghana and it cannot be directly applied to other countries.

## References

- Abugri, G., S. (2006, February 13): Chemu Lagoon is virtually dead, Daily Graphic, Pp.29
- Accra Metropolitan Assembly (1995): LOCAL GOVERNMENT BULLETIN, Accra Metropolitan Assembly (Solid and Liquid Wastes Management) Bye-Laws, 1995.
- Alesch, D., J., Petak, W., J. (2002): *Overcoming Obstacles in Implementation: Addressing Political, Institutional, and Behavioral Problems in Earthquake Hazard Mitigation Policies*, Earthquake Engineering and Vibration, Vol. 1, No.1, p14.
- Amankwah, A. A. (2005): Plastic waste Wahala, Public Agenda.  
[http://www.ghanaweb.com/public\\_agenda/article.php?ID=3360](http://www.ghanaweb.com/public_agenda/article.php?ID=3360) retrieved 29<sup>th</sup> April 2006
- American Psychological Association (APA) (2006): Frequently Asked Questions.  
<http://www.apastyle.org/faqs.html#12> retrieved 6/07/2006
- Appiah-Opoku, S. (1997): Indigenous Institutions and Environmental Assessment: The Case of Ghana, Environmental Management, Vol. 121, No 2, pp. 159-171
- Bartone, C. L., Bernstein, J.D. (1993): "Improving Municipal Solid Waste Management in Third World Countries". Resources, Conservation and Recycling; 8; 43-45.
- Boadi and Kuitunen, (2005): Environmental and Health Impacts of households Solid Waste Handling and Disposal Practices in Third World Cities: The Case of the Accra Metropolitan Area, Ghana. Journal of Environmental Health; 11/1/2005
- Boadi, K. (2004): Environment and Health in the Accra Metropolitan Area, Ghana, Department of Biological and Environmental Science, University of Jyväskylä, Pekka Olsbo, Marja-Lena Tynkkynen University Library of Jyväskylä
- Edoho, F., Dibie, R.(2005): Executing Environmental Policy and Waste Management in Ghana and Nigeria, p.38
- Erocal, D. (1991): Environmental Management in Developing Countries, Development Centre of the Organisation for Economic Co-operation and Development (OECD)
- Flyvbjerg, B. (2003): Five misunderstandings about case-study research, 310-CH-27. qxd 11/7/03 2:30 PM, Pp. 426.
- Fobil, N., Carboo, D., Christian, C. (2002): Defining Options for Integrated Management of Minicipal Solid Waste In Large Cities Of Low-Income Economies—The Case Of The Accra Metropolis In Ghana, Abstracts from Recent Issues: Vol. 28, No. 2, May, 2002  
<http://www2.widener.edu/~sxw0004/abstract20.html#anchor301012>
- Fowler, J., F., (2001): *SURVEY RESEARCH METHODS*. Third Edition. Applied Social research Methods. Series Volume 1, Sage Publications Inc, Aug 24, 2001
- Gallup, J. L., Sachs, J., D. (2001): *The economic burden of malaria*, American Journal of Tropical Medicine and hygiene 64 (Suppl 1-2), 85-96.
- Gasper, D (2004): *THE ETHICS OF DEVELOPMENT*, Edinburgh Studies in World Ethics. Edinburgh University Press.
- Ghana Environmental Protection Agency (2001); for Ministry of Works and Housing (2001) Korle Lagoon Ecological Restoration, Environment and Social Impact

- Statement, Final Report. Accra, Ghana
- Ghana Environmental Protection Agency (EPA), Ministry of Local Government and Rural Development (MLDRD), Ministry of Environment and Science (MES) (2002): BEST PRACTICE ENVIRONMENTAL GUIDELINES SERIES NO.1, *GHANA LANDFILL GUIDELINESS*. Printed by Damte-Kyem printing Press Ltd., Accra
- Ghana Statistical Service (2002): 2000 Population and Housing Census, Summary Report of Final Results, Accra: Ghana Statistical Service
- Government of Ghana, Ministry of Local Government and Rural Development (2003): Second Urban Environmental Sanitation Project (UESP II). Environmental and Social Assessment volume 1, pp 48 – 110
- Kelechi, A. Kalu (2004) - Introduction: the role of Ideas, Theory and Models of Public policy Processes in Africa in *Agenda Setting and Public Policy in Africa-Contemporary perspectives on developing studies*. Edited by Kelechi A. kalu. Published by Ashgate Publishing Limited, England and USA
- Kjellen, M. (2001): Health and environment, Stockholm: Swedish International Development Cooperation Agency.
- Lamptey, L. N. (2006, February 6): After the Clean-up in Accra, What Next? Daily Graphic, Pp.28
- Lamptey, L., N. (2006, January 23): Odaw drainage system filled with garbage, Daily Graphic, Pp.28
- Laryea, J. A. (1997): Urban waste management techniques: The case of Ghana. In E.K. Boom & L. Hens (Eds.), *Environmental management in West Africa* (pp. 289-295). Brussels, Belgium: Free University of Brussels.
- Laxminarayan, R. (2004): Does reducing malaria improve household Living standards? *Tropical Medicine and International Health*, VOLUME 9 NO 2 pp 267-272 FEBRUARY 2004, resources for the Future, Washington DC, USA, Blackwell Publishing Ltd
- Leitmann, J. (1999): *Sustaining Cities, environmental Planning and Management in Urban Design*. McGraw-Hill
- Ohnesorgen, F. (1993): sorting out solid waste: Developing Countries Need Management Expertise. *Public Management*, 75; 9-12
- Palczynski, R.(2002): STUDY ON SOLID WASTE MANAGEMENT OPTIONS FOR AFRICA, PROJECT REPORT, Final Draft Version, prepared for African Development Bank, Sustainable Development & Poverty Reduction Unit
- Paquin, M., Sbert, C. (2004): Towards Effective Environmental Compliance and Enforcement in Latin America and the Caribbean, UNISFERA, CENTRE INTERNATIONAL CENTRE
- Paul V. Applegarth, P., V. (2005): Remarks to Northwestern University Conference on Aid, Governance and Development in Africa, The Millennium Challenge Account: Building on the Lessons of Development, May 13, 2005 retrieved May 2nd 2006  
[http://www.mca.gov/public\\_affairs/speeches/052505\\_remarks.shtml](http://www.mca.gov/public_affairs/speeches/052505_remarks.shtml)
- Pokhrel, D., and Viraraghavan, T (2005): Municipal solid waste management in Nepal: Practices and Challenges. *Waste Managment* 25 (2005) 555-562. 2005

ELSEVIER Ltd

- Pokhrel, D., Viraraghavan, T. (2005): Municipal solid waste management in Nepal: practices and challenges. ELSEVIER Ltd, Waste Management 25 (2005) 555-562
- Republic of Ghana (2002): Ghana Poverty Reduction Strategy, 2002-2004: *An Agenda for Growth and Prosperity, Analysis and Policy Statement*. Accra: Ghana Government
- Ryan, N. (1996): 'Some Advantages of an Integrated Approach to Implementation Analysis: A study of Australian Industry policy', Public Administration, 74: 737-753
- Sam Peter A. Jr (Dr.) (2002): Are the Municipal Solid Waste Management Practices Causing Flooding During the Rainy Season in Accra, Ghana, West Africa? Department of Geography/Environmental Studies, University of Kansas
- Schübeler, P. (1996): URBAN MANAGEMENT AND INFRASTRUCTURE; Conceptual Framework for Municipal Solid Waste Management in Low-Income Countries. UNDP/UNCHS (Habitat)/ World Bank/ SDC Collaborative Programme on Municipal Solid Waste management in Low-Income Countries. Working Paper NO. 9
- Songsore, J. 1992. Review of Household Environmental Problems in Accra Metropolitan Area, Ghana. Stockholm Environmental Institute (SEI), Sweden.
- Songsore, J. and McGranahan, G. 1993. Environment, Wealth and Health: Towards an Analysis of Intra-Urban Differentials within the Greater Accra Metropolitan Area. Accra, Ghana, Stockholm Environmental Institute (SEI), Sweden.
- Songsore, J., McGranahan, G. (1993) Environment, Wealth and Health: Towards an Analysis of Intra-urban Differentials within the Greater Accra Metropolitan Area. Stockholm, Sweden, Stockholm Environmental Institute.
- Spradley, J. (1980): Participant Observation, New York: Holt, Rinehart and Winston
- Stephens, C., Timaueus, L., Ackerman, M., Avle, S., Borlina, M., Campanario, P., Doe, B., Lush, L., Tetteh, D. (1994): Environment and Health in developing countries: An analysis of intra-urban mortality differentials using existing data: Collaborative studies in Accra, Ghana, Sao Paulo, Brazil and analysis of four demographic health surveys. London: London School of Tropical Medicine and Hygiene.
- Tetteh, R. (2006, February 14): The woes of a plastic recycling plant, Daily Graphic, Pp.3
- Vidanaarachchi, K. C., Yeun, S. T. S., Pilapitiya, S. (2005): Municipal solid waste management in the Southern Province of Sri Lanka: Problems, issues and challenges. 2005 ELSEVIER Ltd Waste management xxx (2005) xxx-xxx Country report.
- Waste Management Department (2006): Papers on Solid Waste Generation and collection in the Accra Metropolitan Area.
- Winter, S. C. (2003): 'Introduction and Implementation Perspectives'. In Peters and Pierre (eds.) *Handbook of Public Administration*. Pp. 205-222 Sages Publication Ltd 2003
- World Health Organisation (2005): Implementation of the Resolution of occupational Health and safety in the African Region, 26-28 July 2005, Ouidah, Republic of Benin, Meeting Report

- World Resources Institute, United Nations Environment Programme, United Nations Development Programme, The World Bank (1996): World Resources 1996-97 – *The Urban Environment*, Oxford University Press, Oxford.
- Yin, R. (1994): *Case Study Research: Design and Methods* (2<sup>nd</sup> ed) Thousands Oaks, CA: Sage publishing.
- Yin, R., K. (1989): *Case Study Research: Design and Methods*, Revised Edition, Newbury Park: Sage Publications
- Zurbrügg, C. (2002): Urban Solid Waste Management in Low-Income Countries of Asia, *How to Cope with the Garbage Crisis*, Presented for: Scientific Committee on Problems of the Environment (SCOPE), Urban Solid Waste Management Review Session, Durban, South Africa, November 2002



## Appendices

### Appendix A: Interviews

Below is a transcript of the interviews conducted. It is organized as follows: names and description of interviewees, when the interviews were conducted, purpose of interviews and the questions that were asked and the answers.

#### Interview with Kweku Quansah and Cosmos B. Kambozul

**Kweku Quansah and Cosmos B. Kambozul** are sanitary health officers in charge of some aspect of solid and liquid waste respectively. Having interviews with the two at the same time was to ensure that issues that are not known by one will be taken by the other and also have information that is agreed by at least two people from the same outfit. The interview was conducted on the **28<sup>th</sup> of February 2006** at the premises of the Environmental Health and Sanitation Division of MLGRD. The interview was organized for a number of reasons. The first was to get the history of sanitation on a broader scale and SW in particular. Second to understand the role as street-level bureaucrats in law enforcement and awareness creation and the problems they face which has resulted in their underperformance.

#### Questions and answers

1. Introduction, your profession and what you do?

It is one of the units under the four directorates, our directorate is called policy directorate. What we do here is that, we have four categories of professionals within the unit. We have engineers, sanitary engineers, public health engineers, the environmental technologist, environmental obsesses, and the technical assistance. At the national level we have a structure, the head of the unit, under this we have the environmental protection, human resource, food, drug safety and hygiene, solid waste, liquid waste and procurements. Environmental Health Officer (EHO) is used as a general term. If you go to a typical municipal metro assembly, you will see this structure; we have the waste management department different from the environmental health. So that is why the name is environmental health and sanitation unit. The head of waste run a different structure and the head of health run a different structure. Averagely we have about 15 environmental health officers working in each district. Some districts have as low as 5 while others have about 300. so depends on the capacity of the district and the activities.

In a typical waste management set up in our municipal and district assemblies we expect the head to oversee the activities of the whole waste management system. If you look at our structure it looks like the liquid waste and the solid waste seem to be pushed to the private sector because 80% of all sources needed by the assemblies are recommended to be pushed to the private sector because of the obvious reason, the private sector have the resources, the human resources etc, as compared to the public sector. So Accra alone we have over 17 contractors. So you see the waste management department supervising the contractors, because they come up with options. They come up with technological options, monitoring tools to be able to monitor the private sector. 80% of the work is been done by the private sector. At the end of the day, the assembly and the local government pay for the services of the private sector. You heard that the ministry was owing Accra about 21 billion cedis. The core issue is that waste must be cleared by whatever means. We saw that for the past few years the capability of the assembly seem to be very limited so we fell on the private sector in clearing waste from the cities and towns.

2. Can you say a little about the history of your organization and all you do especially with reference to sanitation and waste management?

Infact it is one of the foremost organizations that was formed during the colonial era. It runs back as to 1846 when the colonial masters came in and took over the rhemes of administration. What happened was that, they wanted a nice area where mosquitoes will not bite them. So what did was that, they recruited few of the whites to be in charge of what was termed the mosquito police. They were just in charge making sure that conditions will not favour mosquitoes breeding. Then we moved to the post second world war era, where those who returned from the second world war, in a way of creating jobs for them, we gave them that responsibility of looking round the environment, so we changed the name from mosquito inspectors to sanitary inspectors. It run down till we change the name to health inspectors, where they were given the mandate to move round and be conducting inspections and making sure the environment was clean at that time. But looking at the illiteracy rate at that time, the only tool they were using was really forcing people

to do the right thing. That is why our name changed to samansaman. Samansaman is a corrupted form of summons. What they new at that time was just to summon you, take you to court and that's was the end. People were really running around when they hear the samansaman coming. You know they had this big motorbikes, dressed like the military and I tell you the cites were clean at that time. It run down and got to the post independence era, where they saw that in order to really conscientise the people to do the right thing, you don't need to use force, you have to appeal to their consciousness, so it started running there. So we changing our focus, so instead of forcing people to do the right thing lets educate them, so the aspect of education also came in. so we were just marrying the two; the law enforcement and education which has run till now. They has been a lot of changes but the bottom line is that we don't use force on people but rather we appeal to their consciousness. That is why the public say the samansaman is no more there just because we change our strategy. We are in a democratic era, so you cannot rush on people and put them to court as if they have committed some crime.

3. What are some of the common disease recorded in the metropolis? Which of them are as a result of improper waste management you will say?

I can assure you that malaria has been the no 1, which records 45% of health cases in Ghana for the past 10 years. What is malaria? It is just an environmental sanitation related disease, diarrhea diseases, worms. For a fact the 1<sup>st</sup> 10 you can get about 65% of the OPD attendance moving to environmental sanitation.

4. Can you say anything about the statistics of the different diseases? How has it changed over time?

It has not changed much. Infact more diseases has been pushed under environmental sanitation related diseases. Now if we are really able to tackle the issue of sanitation in Ghana, I can assure you that the diseases left will be the rich mans diseases, hypertension, etc.

5. Again there is an issue that there is inadequate Government financial support on sanitation, but then attention is more on curative instead of preventive aspects of sanitation? What can you say about that?

I was just trying to link up the history of where we came from as a country. The only reason for the colonial masters to establish a sanitation unit was to protect them from mosquitoes. When it comes to typical Africans we don't fear mosquitoes, it's been part of us. So the bottom line is that if the white man who brought protection from mosquitoes is no more there, so why should we protect people from mosquito bites, so that mentality is there, so when people are dieing and you want drugs to save them why do you have to spend on preventive. If you look at our health system it is a vicious cycle, you get sick, you go to the hospital, you are treated you come back to the same environment, you get sick you are treated.....but elsewhere what they do is that, there is a direct link between the curative and the preventive. but people think differently hear in Ghana. The bottom line is that more people are getting sick, cant we stop a moment and ask what disease is really killing the people. 65% of all the cases could be attributed to preventive diseases which we can prevent. One of the most crucial constraints of the sanitation sector is the fact that resources are not pushed into the sector. All maybe because as a country we have not seen sanitation as a priority and it's very worried some. Especially in HIPC country like Ghana where resources seem to be very limited, we should rather put more emphasis on preventive. Sanitation has been neglected. If you want to even compare figures, back at post independence, you see that emphasis was on sanitation because more people have not trained into the curative sector. Because emphasis was more on preventive and the figures were better. Now that technology has improved, we expect that more we should be able to do more towards the preventive. Other reason that we could sight for such situation is that there is that lack of political will to really push sanitation forward. What are we saying in most cases politicians just get up and then things are moved. It just one person, Adjiri Blankson to say everything should stop. We the technocrats cannot say something and it will stand. We need a political ingenuity to push the sanitation sector forward. Though its costly, its not more costly than curative. I can assure you, we were just joking with some figures and we saw that it will cost less than 1/120 of what we are investing in the curative if we mean to shift attention and focus on preventive. So we will be saving as much as that.

6. Is there lack of the public awareness on the need to pay for sanitation services? If yes, why do you think so? If no, then why are they not paying?

Yes it is a contributing factor, for me it is not the most important constraints. People are not aware, let's critically analyze the issue of creating awareness; we have over 2700 people moving round daily in all the districts in Ghana. And least they inspect a minimum of 10 houses a day. So at least they interact with

people, so if even they ask you to cover your refuse bin, that alone is something. That is awareness creation that is one on one that is even more effective. So why are people not responding to that. Lets even be blunt about the whole thing, the question is that are our people effective enough in trying to change the behavior, because some have completed basic training schools for the past 20 years, they are in the field, they've not enjoyed any training so how do you expect them to use 1960 notes to solve 2006 problems, it cant be possible. So we take part of the blame because we need to really strengthen and sharpen the skills of our people to be able to change behavior because they are supposed to be behavior agents. People are doing their best but I think we need to empower them to sharpening their skills. You know the problem of sanitation is attitudinal. Because you don't why people should carry their waste and dump it into the drain. So we need to use attitudinal change to solve the problem.

The media has not also helped us a lot. You listen to our FM stations, what they discuss is politics, politics, politics. Can we get the media house to say let me champion behavioral change for a while. We have not been able to get support from their angle, they want us to pay meanwhile we are a government institution and funding is not enough. So why cant you say you are doing some social work for the country, whereby you say lets give you 30 minutes airtime and talk about sanitation so that people will change their behavior. The media has not helped us much; they rather put a lot of emphasis on politics at the detriment of basic social problems like insanitary conditions around us

7. What can you say about the issue of law enforcement? To tell you the truth, we have enough laws in our books. Though somebody might agree that it is not adequate. The question is have we been able to enforce the ones that we even have and why are people not been in the position to enforce that law. It boils out to the fact that there is not enough logistical provisions for people to enforce the law. What do you need to enforce the law, you even need transport to go and arrest people and send them to court when people jump arrest, you have to issue bench warrant bring them court to face the law etc. The other issue that doesn't help law enforcement is political and administrative interferences. The situation where somebody falls against of the law, you bring the person to book and then somebody says no, please he is my relative, my uncle, my brother you know the way Ghana is, the extended family system. You know can you allow the person to go, immediately you do that you dent the confidence of the officer. Next time he cannot go around that area to even enforce anything that is what is happening all around the country. And most of us do not really know why our people are not able to enforce the law. It is a very crucial issue, but I still don't want to say that the laws existing in our books are adequate, they are not, but at least we should be able to start enforcing what is in there. This are some of the reasons why we cannot achieve the objective, lack of logistics, a lot of interferences from administrative and political angles, from family members and from almost everybody around making law enforcement very very difficult. Some of the fines and penalty are not deterring enough. Like someone commits an offense and you are taking to court and asked to pay 200,000 cedis. Then the person pays and commits again because it is not enough. So the fines and all that should such that people cannot pay, then they will exercise some restraint. Then it looks like the Judicial system is a bit slower, so we are even recommending that why can't we start proposing sanitation tribunal. So throughout the city we can have only one, but from Monday to Friday they will just be sitting on sanitation issues. Like they did for the traffic offenses. You know the police and the judicial service came together and they were able to strengthen the system so that you don't need to spend 2hrs in court, they will clear you and the move forward. So the funds are not deterrent enough and courts are also slow because they've also got a lot of cases to sit on.

8. I read that one of the major problems of implementation has been inter institutional cooperation and collaboration. How is the communication strength like now between you and the various bodies involved in sanitation?

In 1999 we developed the national sanitation policy and it's been our bible and good source of lessons for us. The policy recommends the establishment of a national environmental sanitation policy coordination council, which makes up a lot of actors. The council meets once every quarter, last one was before the close of the year, the next was supposed to take place in February but it wasn't possible. So at that forum, it is supposed to be a council to really regulate sanitation services in the country. So all stakeholders have inputs as to where you want to really channel problems or the sub sector. At one of such meetings it was proposed that looking at the structure we run at the ministry of local government and where sanitation have been put it is difficult to really see it physically in terms of management, administration, so we were proposing sanitation directorate. We are still working around it, infact the president made a statement about the

establishment of a sanitation directorate, I think in principle he has agreed to that. We want to get that here in this ministry, because if we have a directorate you have the power administratively to really solve some of these problems. So we have very good relationship with our stakeholders. We sit on their ministerial meetings and they sit on ours. The only thing is that we need to strengthen it a bit. The problem is the regularity in the meetings. Funding and others have been a problem, this quarter for instance we were supposed to have met but.....

9. What is the problem with the sanitation sector? The reason why sanitation is still suffering is the fact that resources, political will and the fact that the sanitation sector has not been really identified as a powerful tool to really develop the country. If you look at the importance of sanitation there are lot to gain from as a nation but because we've not been able to identify that.

10. Will you say there is lack of Political Will to implement sanitation policies?

I gave you an example where it took one chief executive of Accra to a halt and I think we should be able to do more.

11. Will you say there is not much of intense sustained public education on sanitation? If yes, why is it so?

Now we have also instituted an annual sanitation week. In the annual sanitation week what we do is that a week is set aside so that people will be conscientised about the contribution that they can push towards improved environment. This involves media activities, clean up campaigns etc. It's been wonderful, and the regions have also been asked to celebrate it at the regional and district level, so that the whole week people will talk about sanitation.

12. How can you relate Accra's health with the waste situation? Once again you make reference to OPD attendance you will be able to get a clearer picture, but I can assure you 65% minimum of all cases reported at the OPD is due to sanitation.

13. What do you think is the way forward? Infact the way forward, is to look at sustainable way of planning sanitation. The sanitation policy has suggested few areas, where it's talking about exceeded revenue, the establishment of sanitation fund etc. so it should be very very sustainable. So it shouldn't be something that you push and the next moment somebody says he/she is not going to pay. So the way forward is sustainable funding for sanitation. So we've thrown a lot of ideas around. One school of thought is saying that, cant we tie at least 0.5% of utility bills and then push it into sanitation. That is very regular and very sustainable, we raised it at one of the forum and electricity people at a glance they were a bit alarmed. But I feel if we sit down with them talk deep on modalities; I think we will be able to achieve something. Because it is difficult in Ghana to ask people to pay for full recovery, cost recovery for sanitation services. If you track the history sanitation services have been free all this years so why do you want people to pay for it now. Electricity has never been free. So why can't we factor in a small percentage to electricity, water or property rate, so that least we have a sustainable way of getting resources into the sanitation fund.

Another way is to look at the polluter pays principle, people just pollute the environment and go free. I mean industries with names that pollute the environment and go free. Can't we make them pay for the removal or collection of waste from the environment, maybe it's a good idea. But for now what we really do is that, we have divided the city into economics sense, using the ability to pay principle. So in Accra for now we have 4 zones, the high class residential areas, the medium class, low income residential areas. For the high class they are paying averagely about 40000 towards waste collection. In the low income areas they put a central container and everybody will come and dump free. So more than 80% of the people we serve are under that bracket, so only about 20% are really paying. Even they are not paying for full cost recovery. I think we are just collecting about 30% of the waste collection charge in Ghana.

The law enforcement aspect I was saying that we have really resource the environmental officer to really enforce the law adequately. That will also be possible if we are able to tighten up the laws to be a bit deterrent. The assemblies have been given the power to propagate bylaws. We as a ministry have also developed what we call model or generic bylaws, where the assemblies can even come and adapt to suit their own localities. So we expect them to really tighten their laws. So when it is deterrent and adequate, people will start responding to some of these behavioral changes that we are preaching.

I support the idea of getting a sanitation court is still relevant. I think as soon as the judicial service is able to support us we should be able to put that across. Again I think it is not always enough for the judicial service

to also think of fines fines etc. look at custodian sentences, where people will be pushed into the street and clean up. You can be given attire that will tell the public that at least he is a sanitation offender then you will be asked to clean the street for maybe three days.

Public awareness is very relevant because things have changed, we are moving into complicities as far sanitation is concerned. 10 years back the issue of plastic waste was not a problem but it is becoming a problem so there is the need to really educate the public. They carry refuse from the house and dump it into our drains. The drains are not covered anyway, we have few constructional problems but at least our drains should be covered. But you can stop people from throwing. Look at our vehicles, people sit in the vehicles and throw refuse from the moving vehicles, so why can't we educate the GPRTU. The question is are our environmental health officers efficient enough and having the capacity to change behaviors? It is not a matter of telling people not to do this and that, but really motivating people to really do what you want them to do. It is not a matter of pumping information into their heads, but listening to them. Let them also have their say to be able to encourage them to really change behaviors. That is very important, whatever we do we can put a lot of resources into sanitation but if the behavioral change is lacking we will still have that problem. Let's pull all our resources together especially the media houses, they are very effective tool. I think they should be able to support us in this era. If every media house in Ghana, in Accra alone we have over 20 FM stations and I think if everybody gives us 15 minutes a week we will be able to achieve something because people listen to radio.

Effective collaboration we still have to strengthen that because if you look at the way ministry of health is run, so much emphasis have been on curative so much so that they don't see sanitation as their own problem. Sanitation is not a sectoral problem; it's a problem for all, so we need to really collaborate. EPA has a bit in there, schools, almost every agency.

If you look at some of this regulatory bodies, they don't have the structures down to the district level and regional levels so what they do is that they only sit down and talk in Accra and live the rest hanging. It is the responsibility of the Assembly to make sure that cities is clean, and that is a legal responsibility.

In conclusion we always want to say that at least putting much emphasis on preventive health it will pay 100 folds more than putting emphasis on curative health. Writings are there for everybody to see, in tourism, investment. Who will like to come and invest in a dirty filthy environment? I mean tourism alone can give us the economic deliverance that we really want. So people will be healthy to go about their duties. This health insurance will suffer if we don't pay much emphasis on preventive health care. The malaria drug have been changed, it is now 5, 10 times more costly than it used to be when we were using chloroquine. So that means more cost.

I think we have to also look for Donor support. Actually the issue of final disposal site is also a problem in Ghana. The NIMBY syndrome is also catching up with everybody, just because there is precedence. We the waste managers have not been able to set a good precedence for people to appreciate that when we dump waste in their backyard it is not going to create nuisance. Look at what is happening at Oblogo, Mallam, so it is sending wrong signals to the people at kwabenya. I think if we are able to look at the issue of funding properly, the issue of sanitation, most of it will be solved. Because could also lead us to intensifying our law enforcement activities.

### **Interview with Lewis Agbesienyale**

**Lewis Agbesienyale** used to work with environmental health and sanitation and rural development. Currently he is working as the coordinator for HIV AIDS but still holds responsibility for rural development which includes Solid and Liquid waste. The reason for his selection was based on the experience he has acquired in the field when he was on direct schedule for Solid and liquid waste. The interview was conducted on the **23<sup>rd</sup> of February 2006** at the premises of MLGRD. The purpose of the interview was to get an understanding of the role the MLGRD with the National Sanitation Coordinating Council plays in the implementation of sanitation policies. This interview took to getting information on the coordination between the actors in the process and how the result of implementation is measured.

### **Questions and answers**

1. Introduction, your profession and what you do? I used to be on various schedules, one is environmental health and sanitation, rural development, but now coordinating HIV aids. But I still hold responsibility for rural development.

2. What is the history and role of the ministry on issues about sanitation and solid waste management?

Sanitation is basically a local government issue. When I talk of the local government I mean the whole ministry. Sanitation is an issue of the local government. For a very longtime until 1995, the ministry of health has responsibility for the environmental health officers, even though they were working with the local government the ministry of health was responsible for the personal training, their welfare and all that until 1995 when the realization came that even though environmental health sanitation is a sanitation issue, it is better grounded within the local government because it is the responsibility of local government and the municipalities. Basically they collect waste, manage landfill and toilet. It is their responsibility not for health so why not make it a local government issue, so that is why the personal were transferred. So the ministry of local government had responsibility of environmental health officers. So to start with we developed a policy, called the environmental sanitation policy. That's why the environmental sanitation unit has been established within the ministry.

3. What is the role of NESPoCC in environmental sanitation and solid waste? It shall include representatives from relevant governmental actors, NGO's and the private sector groups, and shall be responsible for coordinating policy and ensuring effective coordination and cooperation between the many different agencies involve in environmental sanitation within the context of a coherent national programme. The NESPoCC shall expedite the implementation of the national environmental sanitation policy.

4. Can you describe the whole implementation of environmental policy? For us our responsibility is to make policy recommendations to parliament and cabinet to approve. We as a ministry provide technical guidelines for the implementation officers of things that are within the policy. For instance we have developed technical guidelines on the operation and maintenance of landfill, on waste management and waste collection, garbage utilization and a whole lot of things. Even we provide guidelines on manpower development within the sector and the development of environmental sanitation institutions for all the local governments to use as a guideline. This are some of the things, we provide technical guidelines. We solicit funding to support environmental health and sanitation within the local government and indeed one such initiative was the Urban IV. That's one the World Bank loan and then we had a NORDIC fund which was a grant. The World Bank loan was the component hardware environmental health infrastructure for the major urban centres in the country. The NORDIC fund was the soft copy, development of capacity for the environmental health officers, which includes these guidelines and all the rest. So that is also another role, funding policy and guidelines.

5. On what grounds are new policies formulated? Is it when the goal is not reached, or new ideas are invented or pressure from say external actors?

It is interesting but I think it is combination of all that, because policy comes from it could be an emphasis, recognized need emphasis within the government and that time the environmental sanitation became such a big issue that government carried it and everybody recognized that we need to clean up our environment, so taking from that source, government made pronouncements, so is a policy source which was acted upon. For a policy has to be developed, just as in many cases the government says zero tolerance to corruption. So you have to make policies for the relevant institutions to put it into action. It also originates from findings from the field from our end here so we make recommendations. We need policies and the guidelines for these institutions to work well.

6. How do you assess the performance and measure the outcome of a policy? Measurements of policies becomes as a result of policy monitoring and evaluation. But I must say for a fact here that unfortunately we make policy guidelines and the rest but monitoring and evaluation of the performance of policies is mostly bit of a problem. We don't do much in that area. So that is even the reason for lack of statistics, because you need to get statistics before you can evaluate your policies to find out whether they are even working or whether they are even been implemented. We don't collect data, we don't do monitoring to the level that we expect it, so it is a bit of a problem. So many things are happening, so many programmes, so many projects etc, but at the end of the day we don't even know how much or what the success is, or how well we have performed.

7. What is the state of solid waste management in Accra today? You know I tell you, go to AMA and ask them, they will tell you the state. But I can guess, you know statistics will be the best source to see how

they are performing which I hope you can get from the waste management department. But you can also just by sensing the air around you can see how they are performing. It's not a very good situation actually even though efforts are happening and been made by the relevant institutions but also public attitude to waste management and even seeing as a responsibility is another serious area which if we don't work on everything and all out programmes will come to not actually.

8. How are the activities of waste financed? That is the thing you know, solid waste management is a responsibility of the municipalities and they are supposed to generate funding to fund this sector, they go, they implement various categories of waste collection, in high income residential areas it is easy to do door to door collection and then bill them. For instance every month I pay 60000 cedis for waste collection in where I stay because a private man collects it and pick the money, I don't know how much they pay to the municipality. But we are encouraging private sector participation so they are supposed to workout an agreement with them where door to door collection is done and private man collects the money and pay something to the AMA. If the AMA itself is collecting it depends on where. If it is a low income area where accessibility is a problem and they have to use communal waste collection points, then the AMA will have to bear some, or impose levies on the residents in that area to pay some flat levies to pay for this. So these are sources, but they have not been doing very well and everytime there are huge sums left so it is a serious burden. Their revenue collection towards solid waste management is very poor. At a point this ministry had to budget for monies in its annual budget to pay for waste collection in AMA, which is wrong to start with, because they were starting to implement this private sector thing to start with and it was a big burden. I think right now it is still going on, so there are various sources, from the government, the municipalities from the private sector etc

### Interview with Samuel Kpodo and Frank Chinbuah

**Samuel Kpodo** is the senior environmental health technologist in charge of monitoring the activities of the private service providers while **Frank Chinbuah** is the chief environmental officer in charge of public relations and monitoring of the sub metros. The two work together in providing solid waste management services in the Accra Metropolitan area. This is the reason why the interview was conducted with the two interviewees at the same time so that issues that were not conversant to one was definitely known by the other. The interview was conducted on the **1<sup>st</sup> of March 2006** at the premises of the Waste Management Department of the Accra Metropolitan Assembly. The interview served the purpose of getting some statistics about SW; collection, disposal and waste hierarchy in the metropolitan area. It was also important in sourcing information on management plans and law enforcement mechanisms.

### Questions and answers

1. Introduction, your profession, what you do?

Frank, I am chief environmental officer and in charge of public relations and monitoring of the sub metros. Samuel Kpodo, senior environmental health technologist in charge of the private sector that is in charge monitoring the private service providers.

2. What is the role of AMA in the general sanitation and solid waste management in Accra? AMA is a government institution that is in charge of cleaning the city. As far sanitation is concerned the AMA should ensure the safe environment for healthy people and for developing the city. But the WMD responsibility is to collect all types of waste and to transport waste using appropriate vehicles, and then to treat and finally dispose of the waste at appropriate sites. Waste management deals with the management of waste more or less we are taking the hardware aspect of managing the health of the people. The Metro public health department also deals with the software; that is education and prosecution of people who go against the bylaws of AMA.

3. Waste collection was privatized some years back, are you still into the collection of solid waste? That was in 1999 when we went into 100% collection of waste. We are still handling the treatment and final disposal of waste.

4. What is percentage of solid waste is collected in Accra today? What percentage of waste is collected and treated? Total generation is about 1800 tons per day and then we are managing and collecting with our

private contractors, an average of 1200 tons per day. So I will say the performance is an average performance.

5. Some households dump waste illegally into drain, water courses etc. Do you work with any laws that prosecute such people? If yes, what laws? If no, why? We have the AMA solid and liquid waste bylaws. It says that all residence will make their refuse available for collection. And people who dispose of their refuse into drains are also punished and the penalty of these offenses is spread out in the bylaws.

6. Whose responsibility is it to raise awareness for environmental sanitation and legal requirements for payment of refuse collection charges? Like we were saying the education part of the duties of AMA falls within the metro public health. Over here we have a nucleus of public relations section which also goes into educating the public, doing street announcement. If it happens that a new area has been carved for house to house, the public relations at our outfit here liaises with the sub metro public health unit to do street announcement and conduct fora and all that to let the people know what we are also doing here.

7. The government wants to modernize the Accra city; do you have any idea as to how much is being spent on sanitation and waste management? I mean a lot has been given to construction, what about the other sectors?

Well for sanitation, as I said earlier on we collecting about 1200 ton of solid waste per day. Presently the AMA is paying on behalf of the people, 100000 cedis per ton of waste. We are spending about 3 billion cedis per month on only solid waste collection. How come that colossal amount? We have a lot of the central containers placed in the city. These containers are mostly placed in high density, low income group and they don't pay anything and house to house is done at the low density income group which constitutes about 20%. In effect only 20% of the populace are paying for waste collection hence this colossal amount.

8. Is it easy to get allocation of sites for disposal? If yes, how? If no, why?

Well it has not been very easy getting site for final disposal. A lot of people think dumping waste at their backyard may result in a lot of pollution and public health issues. So you have to always encourage people to accept it, because the present site we using, we had to do a lot of public relations, even letting the people make certain request for us to accept before they agreed for us to dump at their backyard, you know the NIMBY attitude is there. You know people might even request for health center, a market and all that before they will accept. Occasionally they even block the road if we are not able to fulfill our promise.

9. What standards have been set to be achieved in the Accra area as far as managing waste is concerned?

As I said we are doing averagely, but we should be hitting around an excellent performance, 85 to 90% would have been a good performance. But the problem we have is the attitude of the people; they are not making the waste available for us to collect. They are putting the waste elsewhere, instead of putting the waste in containers. A lot of it I will say is negative attitude so a lot of the waste is not coming to AMA; it is going into drains, beaches, and open spaces. When it gets to such places we don't have the machines to go and pick them. It becomes difficult to pick them because it becomes too expensive to deal with the waste. So we cannot get to the standard until people change their attitude and also we have enough logistics to cope with.

10. How do you monitor the performance of the contractors? The activities involved include daily inspection of the central container sites. Inspect house to house service areas that are on weekly basis. We also take complains from the general public or whoever and then call service providers for remedial action to be taking. We also issue notices to defaulters, and within 48hrs we expect you to take remedial action. If that is not done we call another contractor to assist. We also do performance evaluation and report writing. At the moment how many waste contractors do you have? Do you think other companies want to join? At the moment we have about seventeen of them. They were 15 but later we realised their performance was not enough so we brought in two additional contractors as backup to these ones. People want to come in but when they hear about the payment problems they shift. The fact is that AMA is not able to pay. The profit aspect of the work is always with AMA because all the time we owe contractors for about 6 months and that is the profit aspect. They take loans to work and each time they pay, they take all the money from them and they stay without money and that money stays with AMA.



11. How do you work with the environmental sanitation policy to fit your local area? The sanitation policy is a very broad guideline for sanitation in the whole Ghana. More or less it sets standards for both the waste management and the environmental health section.

12. Is there any kind of cooperation where households make suggestions to the metropolitan Assembly, which you think will improve the situation on the ground? If yes, how, if no, why?

We have sub metros where a lot of households send their suggestions as to how best they should be registered and how best they should be paying. At times public forums are held to cultivate their interest. Even there are instances where waste containers are placed in areas where certain people bring complains. We look at how feasible it is and then we discuss it. Especially site containers that are going to be sited; we liaise with the assembly member opinion leaders in the area and discuss the whole issue thoroughly. Other than that we create a problem for them and then they will reject it. So there is whole lot of concessions before these things are done.

13. Why haven't residence agreed to the execution of the Kwabenya Landfill project? Like we said the NIMBY attitude, but the cracks of the matter is that the ministry of local government or AMA hasn't been a little bit proactive so far as funding and all this things are concerned to be able to construct it faster before the residents gets closer to it.

14. Do you think the clean-up exercise taking place every month is the solution to the sanitation problem? In my personal opinion I think it is not sustainable because clean-ups could be held ones or twice a year to create awareness or education. But it shouldn't be a monthly programme to say that, that will help maintain sanitation in the city. We have to come out with enforcing our laws and sustainable public education system which will change the people's attitude to stop them from putting waste at the wrong places. Because we just cleaned about 3 weeks ago and we are doing it again. The drains are choked again. I will say it is not sustainable, and experience from other places proves that, people get fed up with it. Because the next clean-up nobody will participate, it is only the AMA people who will participate.

15. Do you think the reason behind the under performance of action plans is due that fact that sanitation is not an important contributor to the GDP? Partly, and if I may go a little bit

back. The government like you said is not trying to practice the preventive aspect of the health delivery, and that is the cracks of the matter. The government in my mind believes that if hospitals are built people will see the hospital there as a monument so that whenever they are sick they will go there and get treated, meanwhile the most of the diseases we take overthere are preventive, the malaria, cholera, typhoid and all that. So if the government will lay emphasis on the preventive aspect, seeing to it that loans are given for the construction of toilets, enough contractors are engaged to collect all waste generated, if even people will pay indirect. All these things will help the government to be able to clean the city so that at least preventable diseases will be out entirely.

16. Some years back we had the 'samansaman', why has it changed?

Because that was a good way of cleaning our environment. They are still there, it hasn't change. The problem is that we have a few of them in the system now. Unlike the olden days where they were uniformed, presently they are not uniformed and even if they pass by, people don't recognize them. Because development is now far ahead of planning. Instead of planning so that the next 5 years we get 2000 environmental health officers to do the education, if I may say the government is not looking at that side. So they are not educated to be able to do the right thing. Poor remuneration of these officers and training. The environmental health officers have remained a technical officer for several years. There is no professionalism in that system, so the environmental health unit is not growing on a technical base. But if we can introduce courses in the university where people come out like environmental health officers or even sanitary scientist, the place will grow and they can see them. This is an O' level dropout who has been trained somewhere, he cannot even talk and he is just rooming in town who will see him. So even though those olden days they saw, they were just picked from the street, they had a uniform and they were motivated. They go to court and they sentence the people and the whole township will hear of them. So how can the people be trained?

A lot of things have been said at the ministry level, and I think they are looking at it. The Deputy Ministry of local

Government is so interested, some lecturers came from the University of Ghana legon, and they want to introduce some courses. Because we don't have it. There is nothing in our universities about sanitation. They are only doing it at this master's level and they don't come out to work. Some of us you have gone through the same system we are not allowed to do the degree too. So we've to look at proper training of professionals for those who are actually on the ground.

17. What is the hierarchy of solid waste in the system here today? We do 80 to 90% landfilling and a little composting (about 10%) and recycling of plastics; about 2 or 3%. We want to move actually into recycling all our plastics and then some composting. We have 65% of organic waste so people want to move into the organic waste, because when we are able to get rid of most of the organic waste, the landfill will be smaller. The government is interested in recycling the plastics. At the moment there are 5 collection points in town where plastics are bought at 1000 cedis a kilo and sent to the recycling industries for recycling. These recycling plants are also complaining that there is the need for the government to give them some tax holidays because it is expensive to do this recycling. So those you are writing into this are actually given some tax rebate just to entice people to go into it.

18. What about the informal sector, do you have any link with them? Yes we do, as we speak now, so far as metals are concerned that one infact about 90% of metals in the waste stream is been recycled. You will see this boys going out to collect every metal and it's sent to Tema to produce iron rods. The waste management department did some eco partnership programme where some schools were also educated to do composting on a small scale.

19. What do you think about the whole enforcement system as far sanitation is concerned? Law enforcement hasn't been so encouraging, as we said the environmental health officers who are supposed to do this work are limited. Accra has expanded so much so that even though they are people they don't see them. So law enforcement hasn't been as expected so for that matter we have these sanitation problems. Because if the laws are enforced people will not be littering the waste anywhere. So we have the laws but the enforcement is weak. In fact the present chief executive is doing a lot because he has seen that after a lot of education there is the need to actually prosecute people to deter them from doing so. So plans are underway to actually open a sanitation court to deal with people who commit sanitation offenses. Infact when this is introduced, it will go a long way to prosecute offenders.

20. From your own experience, what challenges do you face? Logistics to work with, containers and vehicles to haul this waste to the final disposal sites. Financial constraints; a lot of people are not paying for waste. It's AMA who is paying on behalf of the people for that matter spending so much and not able to cop with logistic aspects. With all the resources people still don't pay for waste, so its time that we actually make people pay for the waste they generate. The negative attitude, education and awareness are also limited. Monitoring is also a problem, you can't sit in the office and monitor. The biggest is the political will, you want to decongest the city and you are asked to wait. Fine you have to wait but people are littering the city. Remuneration is bad, public ridicule of waste, the work is not motivating enough. Even within your own family, they take you to be "bollaman". The problem we are facing now is financial and there is the need for the public to also contribute towards it. Formerly the water company had standpipes and people were paying for water. If you go to electricity the street lights you pay for it. When your light bill comes you pay a percentage indirectly for it. So it is now time for the government to come out with the ministry of local government and say this is what you are paying for waste, it could be directly or indirectly. It can be for a so that people will bring their ideas. We were thinking of adding it to other utilities but they were saying the public owes them a lot which they haven't pay so how can you come and add more to it. Its hard time we go into talking about it so that people will actually pay for solid waste otherwise the government may not be able to support the whole thing 100%.

21. What do you think about the health insurance scheme with reference to the sanitation problem? The present minister of health has been hitting on the preventive aspect but it seems the government is not listening and instead changing mayors and doing clean-ups to affect the situation.

22. What do you think is the difference in life expectancy in both structured and unstructured areas? In high income low density areas you see that people over there live longer and their way of life is different

from what we have in high density low income groups. Where you will see people crawling in the dust, eating sand which will predispose them to intestinal and communicable diseases and a whole lot of things. So you will see that a lot of deaths coming off late usually come from low income high density areas. The mortality rate is high in low income areas

23. Implementation of the policy has been a problem, AMA do not have data of the properties in Accra and so for that matter if you want people to pay, from the word go you wouldn't even know the number of households that are supposed to be paying. So there are lapses there. Last year the assembly made plans to come out with the polluter must pay principle in the low income areas. They had to pay 30000 cedis for garbage, every household. They agreed to that, but they realised they don't have a data to apply it so they are now raising money to count all properties in Accra before they can implement this successfully otherwise money will be going into peoples pocket and it will not be successful. So that is what we are looking at now. Before the 1996 election the pay as you dump system was abolished because the government realized that people were paying but Accra was still not clean. So the then minister of local government instructed that the assembly should pay on behalf of the people. And we have been in that system, subsequent governments have not been able to implement it. Most of the Assembly men who constitute the assembly, the law makers at the assembly haven't got the guts that..... Because when the man was coming into power he said I will bring you containers for all your waste. And now you tell them to pay. Before if you send your waste I think you pay a little money and there were people there 24 hrs and so the place was very clean.

#### **Interview with William Hayfron-Acquah**

**William Hayfron-Acquah** is a senior programme officer and an environmental inspector. The interview was conducted at the premises of the Ghana Environmental Protection Agency on the **28<sup>th</sup> of February 2006**. The interview served the purpose of gathering information about EPA activities in SW and implementation of environmental policies in general.

#### **Questions and answers**

1. What has been the problem with solid waste management? The municipal solid waste management has been a problem. Population has a direct bearing on waste generation. If you take an average of daily waste generation is 0.45 kilogram per person per day. And if you take Accra which currently has a population of about 4 million, then you can have an idea as to the quantum of waste generated in a day. As a result of that the assemblies are unable to manage the waste the way they should. In the first place we don't properly plan our settlements so most of the areas are not assessable. Assuming they even have the trucks, such places it is not available. So they are unable to do a 100% collection. The other thing is our own attitude. They don't know the implications of their actions on the environment so littering anywhere they find convenience to dispose of waste. Another reason is that the Assemblies don't have the skilled manpower. The levels of people that are employed at the Assembly don't have the right expertise and therefore they are unable to plan properly for their waste management. You will agree with me that most of the activities they undertake have no plan. Resources and logistics are not adequate. Ghanaians as they are now have not come to terms to pay for waste services like we do for other utilities like water and electricity. Waste management is an expensive venture. So ones people are not paying then it becomes difficult for the assemblies to properly clean the cities. The assemblies have for some time now resorted the collection of waste to some private waste contractors so they do the collection and tip them at the dump site. Accra don't have a sanitary landfill site, we have just an ordinary dumpsite. For now collection in the Accra metropolis is just about 55 to 65 %.they are unable to do 100% collection.

2. If the collection rate is around 55 to 65%, what happens to the rest? That is what you will find in drains water courses where they find convenient. So that is where people deposit waste and we know the health implications as a people. We as an agency, we are mandated to prepare technical guidelines for them to properly manage their waste. Over the years we have been trying to develop a set of guidelines, at the moment we've published three of such guidelines. One of on landfill, we realized that if they are able to do 100% collection, we are not treating our waste for now here, so just collection and disposal. We realized that they don't have the engineered landfills so why don't we prepare a guideline so that if they have the resources to go in then they will know how to construct and manage a sanitary landfill. In the Urban V where the World Bank has made provision to construct 5 sanitary landfills in the country. The UK

government started one for Accra that was to be located at Kwabenya but for public concerns the project has become a white elephant because the assembly did not sensitize the people enough. The people know of dumpsites, but a sanitary landfill and a dumpsite are two different things, so we suggested that they should get a cliff of a sanitary landfill site and show it on a national TV, so can people can appreciate that for sanitary one the nuisance is not as much as the dump site. Since the NIMBY syndrome is there, and because they failed to do that, people thought it was going to like the case o mallam and oblogo where they are currently dumping their waste. The second problem of the situation is also the fact that, they did not do acquisition; they did not properly acquire the land. So because of these that project had to be abandoned. So now with the second phase of the Urban V that is been implemented by the local government will reactivate the kwabenkya landfill project

The second was the health care waste, we realized that the way we are managing our health care waste was not the best. In Accra it is only Korlebu that has an incinerator to treat their waste. Aside that all the others when we did a survey at all the health care facilities we realized that they were only burying the waste which has lot of health implications. We all drink from the groundwater so health is an issue. so we had to design that guideline to assist health operators. The next one is about that fact that we think we have to help them to properly plan their waste management activities. So in short term, medium term and longterm, what should they do. We have not just developed it and left it hanging, this year one of the main activities of my department is to train 10 district assemblies on the use of these guidelines so that they obligate to implement them for us to see a change in the way we handle our waste at the moment. We have challenges but we think it is not something we cannot improve upon. What are also asking the assemblies to do is to put the cost in property rates so it becomes an indirect way of tax. The Christian council of Ghana wants to support the activities of the government as far as waste management is concerned. Recently they organized a dialogue; faith development dialogue for all the religions. The reason why they doing that is that from the 2000 census it become evident that the Christian community have about 75% of the total population while the Moslem community is 15%. We are thinking that of course when the religious people speak, members take it so they could sensitize the public about behavioral change in terms of keeping our surroundings clean. It might go far so. It came out that the AMA spends about 8 billion cedis on collection that is for the 55-65% that they do every month. It therefore means that people should be able to appreciate and pay because if we are able to clean our environment then in a way then we will be ensuring that people live in a healthy environment. Because the out patient record shows that malaria is the high cause of deaths in the country so if they want to prevent it then it is better to prevent it than to cure it. Then it will be line with government policy for poverty alleviation. Because if people are sick they cant go to work, so that reason alone the poverty cycle will continue to remain. But once they are healthy as a country we save a lot because the cost of treating is so much. We've tried several options, the mechanical treatment has not helped us as a nation because Nkrumah put up the compost plant at Teshie Nungua, maintenance was a problem, so as at now it is a white elephant. Since we don't have the maintenance culture. So now we looking at simple technologies and biogas is one of the options that have proven to be sustainable and therefore feasible. So we as an agency is trying to promote this technology, we selling it to the district assemblies. Now some institutions like Nestle are using the biogas technology. So we think that the kitchen waste and some earthlike material can be turned into biogas to generate some gas to supplement energy usage. We also have simple composting that when we sensitize people into it.

3. How do you monitor the activities like the guidelines given to the assemblies?  
As part of the training programme, we have component and evaluation team who go and actually see how they implement it on the ground. Most of the dumpsites have been old quarry sites that they want to seal. So we actually monitor because we want to see change.

4. What is the present hierarchy of waste and what do we do you expect to achieve in the future?

For now it is just collection and disposal. But if you are looking at the typical waste management then you will be talking about source separation, recycle, reuse and the rest landfill. I look at the role that everybody will have to play to affect the whole chain. It is the responsibility for every individual to do source separation then also pay, from there they place it in the hands of the assemblies, they are supposed to provide appropriate means. For now I guess it will take a long time to achieve what we looking at because of the attitude of our people. We are thinking that if the bylaws of the assemblies are reviewed to make provision for sanctions on defaulters, if you litter and you are sanctioned people will begin to buy. For now it will take some time. With the payment one of the problems is that we don't have proper street names and

house numbers. So it makes it difficult to reach the people and let them pay. So for the informal settlements these are people who cannot afford to pay. One thing the government should do is to encourage the private sector to join. But that can't be effective until we as a people accept to pay for waste management service because it is a social service, and if there is a lot of money been spent then the government should put something in place like tax exemptions and what have you. And once these things are there and the bylaws makes it mandatory for people to pay there will be enough revenue to actually treat the waste.

5. What is happening at the moment, because people have found the need to recycle, they pay people I think in kilogram if they collect and bring. They have collection points where they pay you. I think they are contributing so much to reduce the waste. I was telling the people at the workshop that that no matter the amount of recycling we still have to do some landfilling. Landfill is something we cannot do away with but then the NIMBY syndrome is there. So the assemblies have plan ahead identify the sites, secure them. Oblogo where they dump the waste now, I don't think it will take us to the end of the year, but here you are, there is not a sanitary site.

6. What do you think about the clean-up exercise, do you think it is the way forward? What I will say is that it is not sustainable because the law doesn't make it mandatory to go to the communities and clean. So the ordinary man living in that community will say even if I create a mess they will clean. Every citizen should appreciate that we have to live in a healthy environment. So the bylaws should make it mandatory that if we talk of your environment we don't mean the inner perimeter of your home, people should be made responsible that you are to clean the drainage at the frontage and not the government. So fine the campaign is good but it is not sustainable. So we have to inculcate people to understand that we need to clean our immediate surroundings.

#### **Interview with Boss Akolobilla, Bawa Micheal and Nashiru Azumah:**

They are in charge of organising the activities at some transfer points to make sure the place is clean and that all waste gets into the containers. The interview to this respect was a bit of an unstructured one. This was as result of the fact that they had knowledge about what goes on within their outfit and so just by mentioning some themes a lot of conversation followed. The interview took place at the Wireless transfer point on the **3<sup>rd</sup> of March 2006**. The purpose of the interview was to gather information as to what goes on at the transfer point in relation to people's behavior in dumping waste and their roles and the problems they face in delivering the services.

#### **Questions and answers**

1. What do you do here? We are in charge of organizing every aspect of the waste at this transfer point. What we do is that most of people when they here and they don't see anybody, they end up throwing the waste around and not into the container. That means that we have to stay here for 24hrs and that is not possible because they don't pay us so much and not also care for us when we are sick. Again the problem we have here is that people send their children to bring waste to the collection point, if they come and not meet anybody, since they cannot reach the container they throw it on the ground and litter the place.

2. Do you have enough solid waste containers to handle all the waste that come in? The containers they have at the transfer point is not enough. Most of the time they come for the two containers replacing with just one, and this gets full very quick. So if people come and there is no container, all they have to do is to litter around because they have no option.

3. What will you say about the work you do? Do you have some problems or everything is fine? The services we render has no recognition, because I tell you that the little time we live here, people start littering around even if there is an empty container. The people are just used to littering around so I think we are very important here, but since we are not given any protective clothing we work just like this and when we fall sick, no one cares for us. As at now that I am speaking the Assembly even owes us 340,000 cedis for telephone calls made to Deben when the containers are full before time.

4. What do you want the Assembly to do for you which you think will help your work? We will be glad to get ID cards for recognition, nobody sees us as anything and that doesn't help our work. Again our salaries are not good enough to keep us going. The most important of all is to have tools to work.

We don't have anything to work with, no shovels and what have you. We have to use brooms to clean that sometimes is not the work of a broom

5. What about the heap of solid waste around here, how do you deal with it? Normally it takes about a month before the heap is cleared at the labone wireless transfer point

#### **Interview with Rexford Quaye:**

**Rexford Quaye** is the deputy programme manager of the Department for International Development (DFID) of the United Kingdom in Ghana responsible for the sustainable livelihoods and increased production programme. The interview was conducted at the premises of DFID on the **8<sup>th</sup> of March 2006**. The main purpose of the interview was to gather information on the support the DFID give to SW and sanitation and also to find out why the DFID pooled out of the Kwabenya Landfill that was supposed to serve the people of the Accra metropolitan area for the next 25 years.

#### **Questions and answers**

1. Introduction and what you do?

2. What do you do in support of the kwabenya landfill project and why did you pool out of the project?

Aid trade provision of 35% of credit. With the issue of the land set for a landfill, a section was encroached upon. The government of Ghana was supposed to sort that out also compensate the people for the land. That was about 4 million pounds sterling. Otherwise the land set for the project was to be reduced. And TAYSEC who was supposed to handle the project didn't want to be part of it because of the problem of reducing the size of the landfill and all that. The message about the landfill didn't go down well to the people since they knew the problems at Oblogo and the problems about open dumping. Transportation to the site was ok. An initial amount of 3.5 million pound sterling had already been spent while the project was abandoned. With the many problems that came forth, it was realized that the Ghana government was not in position to resolve the issue.

So much inflow comes in but there is nothing to write home about. People are sent overseas to go and learn new ways of doing things but they end up going shopping and come back the same way they went

2. What do you think is the cause of these problems?

We have a problem with our attitude that needs to be changed. The system has just flawed, hard workers are not rewarded and people are not sanctioned when they go wrong. Politicians are not held accountable for their actions and until that is done there will be no progress. There is so much resources that come into the country but the leakages are too many. For example, I pay tax before I get my pay, but look at somebody who imports containers. The guy goes in the night to see an officer they talk about the containers and he gives the man a little money that goes into his personal pocket implying that the country didn't benefit from the import. There is no law and order, people do things and they go scort free. The UK government is interested in trading here, so a lot is been done as far as supporting the budget of the government is concerned. It is difficult for us to maintain little things, like the composting plant at Nungua collapsed. The system is not functioning, people talk big and they can't deliver. Look at the cars our ministers drive in, and you know even simple traffic regulations people don't obey, nothing is functioning.

#### **Interview with Ebenezer Quaye:**

**Ebenezer Quaye** is a district environmental health officer responsible for some aspects of liquid and solid waste management, food hygiene, general cleanliness in the environment, house to house health inspection, vector control, control and management of cemeteries, hygiene education & law enforcement and development control. The interview was conducted at the premises of the Ga District Assembly on the **7<sup>th</sup> of March 2006**. The purpose of the interview was to get some support for some of the issues raised by some of the interviewees and also with his vast area of operation to gather some basics relating to the study problem.

#### **Questions and answers**

1. Introduction, your profession and history?

Liquid and solid waste management, food hygiene, general cleanliness in the environment, House to House health inspection, vector control, control and management of cemeteries, hygiene education and law enforcement, development control. This ministry was set up by the colonial government to abate nuisance in the environment thereby promoting good public health. This entity was under the then the ministry of health, now Ghana health service. But in 1996, it came under the ministry of local government and rural development. The initial nomenclature of the technical staff was sanitary inspector, which was modified to health inspector and to the present environmental health officer. An untrained officer held the title health overseer, but this category is phased out.

2. What are some of the common disease recorded in the metropolis? Common diseases: diarrhoea (including cholera), dysentery, ulcer, malaria, typhoid fever, bilhazia, skin rashes

3. Constant population explosion, especially the regular spillover from popular Accra outstretches the provision of logistics for waste management. Besides this, the split of the former Ga district into East and West has left Ga West with 9 area councils to cater for as against 3 by the East. Incidentally the excellent resources are in the east- huge revenue from lorry stations and markets  
Running cost and maintenance of refuse trucks are borne by the Assembly.  
Truck drivers, mates and laborers are paid by the Assembly.

Sanitation tools are purchased by the Assembly

Final refuse disposal sites are maintained by the Assembly.

Private contractors lifting central containers are paid by the Assembly

Payment of the above mentioned activities is through the district assemblies common fund and internally generated fund

4. Again there is an issue that there is inadequate Government financial support on sanitation, but then attention is more on curative instead of preventive aspects of sanitation? What can you say about that?  
Financial support from the government is inadequate for both sanitation and curative. Infact donor support is to more curative and sanitation which is preventive

5. Is there lack of the public awareness on the need to pay for sanitation services? If yes, why do you think so? If no, then why are they not paying?  
There is adequate public awareness, but the penalties on sanitation are flexible and offenders are not easily detected. These offenders take advantage of alternative and unacceptable forms of 'service' by abusing the environment. With this non payment is likely to prevail. Poor service provision is also a recipe for the nonpayment.

6. Will you say there is not much of intense sustained public education on sanitation? If yes, why is it so?  
Education on sanitation is ongoing through the media, at schools hospitals, places of worship and other gatherings. Beneficiary communities on water an sanitation projects are adequately educated on sanitation. Food vendors as well as inmates of dwelling houses are also educated. This wide net of education is supported by law enforcement. What needs to be known is that people hardly accept there are serious health dangers associated with poor sanitation practices.

7. What can you say about acquiring land for disposal of waste? It has to be confirmed that acquiring lands for public waste disposal normally comes with problems. In the densely populated areas, special development leaves scarce land for waste disposal. Most communities reject the establishment of waste disposal sites in their vicinities due to the threat on public health and obnoxious odour. Most of the Assemblies fail to acquire lands meant for waste disposal from owners even if they are offered the opportunity to do so. In effect, land owners subject the assemblies to ejection from the lands.

8. Will you say there is adequate law enforcement in the system? No,  
because the personnel enforcing the law enjoy the liberty of been biased.

9. I read that one of the major problems of implementation has been inter institutional cooperation and collaboration. How is the communication strength like now between you and the various bodies involved in sanitation? Inter institutional cooperation runs smooth, but it is disrupted on the detection of malfeasance or other corrupt practices on the part of particular collaborators.

10. What can you say about the whole planning process? Planning is well doing, but there is poor implementation brought on by inadequate funding.

11. Do you think the reason behind the under performance of action plans is due that fact that sanitation is not an important contributor to the GDP? I think so, sanitation continues to receive laudable lipservice from the top hierarchy, but implementation is either slow or negligible.

12. Will you say there is lack of Political Will to implement to implement sanitation policies? Apart from good political show of concern on platforms and other for a, the real involvement in implementation of sanitation policies is quite absent. This is seen in the low active participation in ensuring funding, supervision, monitoring and evaluation of sanitation programmes.

13. Will you say there are loopholes in the action plans that have resulted in its underperformance? I mean there are not proportional resources given for policy to work yes, participation in the distribution of resources is not well directed to support the policy-thus, rendering the policy a shadow of itself.

#### Interview with Oswarld Larvoe:

**Oswarld Larvoe** is the operations officer at the National Disaster Management Organisation (NADMO) responsible for operations and stores. The interview was conducted at the premises of NADMO on the **13<sup>th</sup> of March 2006**. The main purpose of the interview was to gather information on the link between solid waste and flooding. It was also important to sourcing information as to how much goes into the operations when there is flooding.

#### Questions and answers

1. Introduction and the work you do here in the organization? In charge of operations and stores. Basically we are into disaster management. We are also into public awareness creation. There are two types of disasters; the natural and the manmade. The natural disasters have no control, like the earth quakes, earth tremors, thunder storms and etc. the human induced we can talk about some flooding, but some maybe natural. We have the geological, the hydro metrological. The hydro metrological are the flooding the rainstorms etc. normally in the season we have a disaster calendar which is normally quarterly, in every period there are special disasters that fall under them. We normally experience flooding in june/july. The heavy flooding ends in July. Before the season starts we march some educational programmes. We go to radio stations and organize programmes in the local language. After the educational programmes we start with disilting gutters. We have volunteers; we call them NADMO volunteers (DVG's). Even this morning some were here, the said they will be doing cleanup exercise so we gave them some items (Wellington butts and food items).

2. If an area is flooded, how much do you spend?

A small educational programme cost you about 5 million cedis. For the relieve items, that one is quite expensive because we give them roofing sheets. We supply them with aluminum and galvanized. We give the aluminum to those who are closer to the coast and galvanized to those who are far away from the coast. These things are very expensive, then we give blankets, mattresses, then we give a few second hand cloths. These items vary in terms of their price. But basically a sheet of aluminum is about 90,000, and there are 20 pcs which make up a packet. So 90 by 20 that makes up to about 1.8 millions cedis. The galvanized is selling at about 35 to 40000.so this is also about 650000 cedis. A piece of blanket is been sold for 35000.the mattress is also 90000.

3. Do you have a quantity to be given at a particular time? It will depend on the household. In a compound house where we have so many people. If we say per head, then in a family we are able to give 2 packets of roofing sheets to a family. We may not be able to restore you to your normal position. If you have a



standard family we give you about 4 mattresses, 4 blankets, 4 mats, 5 buckets, 2 bowls, 4 lantines. A bail of second hand cloths. Then food items, about 1.5 bag rice, 6pcs of oil. So in a family of about 5 or 6 that is what we give.

3. Do you think dealing with the waste issue will reduce the perennial problem? It will reduce somehow because Accra itself is a low lying area and undulating. The flooding most often is natural thing but by disilting the drains, the covering of the drains. The gutters should be covered because the way our culture is; littering around and the wind will blow it into the gutter, but if the slaps are on top if anything when they raise it they can clean it up and cover it again. The topography of Accra makes it vulnerable to flooding but then the disilting and the covering the drains will help reduce the flooding

### Interview with John K. Hagan:

**John K. Hagan** is the administrator of Deben Cleaning and Construction Services (DCCS) which is one of the 15 waste contractors in the metropolis. The interview was conducted at the premises of DCCS on the 15<sup>th</sup> of March 2006. The purpose of the interview was to gather information about the role they play in SW collection and management and also to find out about issues that affect the smooth running of the company and general problems facing the WCs. This information was sort from this company because it is one of the oldest in the business.

### Questions and answers

1. Introduction, your profession, what you do?

Accountant/ Administrator, I oversee the finance and administrative matters of the company Deben Cleansing and Construction Services Limited entered the waste management Business in 1989 when we started in the Ga District. Our Mission: to create the awareness that the waste management industry is a not a humiliating undertaking.

2. Do you work with Accra metropolitan Assembly for the management of waste? If yes, how do you do it? Yes, (but in th Ga East District Assembly and Tema Municipal Assembly). The assembly has contracted us among other waste management firms. The Assembly has zoned Accra and made the company responsible for a zone. Deben is responsible for the Kpeshie sub-metropolitan area comprising the following communities; Cantonments, Labone, La Teshie/Nungua and Spintex Road area. We operate both house to house service (ie picking from residential properties) and central container system (i.e. lifting of containers within communities. Both operations are disposed off by dumping at a dump site( in our case Teshie-Nungua fertilizer plant)

3. How is the service you provide paid for? Is it by the weight of waste, the transportation distance to the site or how?

Service within the 2 categories is paid for differently as follows:

- i. House to house- we collect fees on a monthly basis directly from beneficiary and occupants.
- ii. Central Container lifting- paid by the AMA by weight of waste. Besides the payment for central container service which is met by the AMA albeit it's irregular nature (payments can fall in arrears sometimes as far back as 6 months), they sometimes support us by providing us with some central containers on credit which we pay for later when they are remitting us. They once passed on to us vehicles of a foreign contracting firm whose contract had been abrogated. Payment for these vehicles was also spread over 3 years.

4. What is the state of waste management in Accra today? What percentage of waste generated in Accra is collected and disposed?

Not very satisfactory-about 60%

5. What standards are you supposed to meet as far as waste collection is concerned?

The standard expected of us as waste collectors are;

- i. To possess requisite equipment especially trucks (i.e. compactors and multilift)
- ii. To keep the container sites clean
- iii. To haul a container from all designated sites within the company's jurisdiction at least once a day

6. Do you have problems at the different areas of operation? Say collecting waste at East legon with Kolegono? If yes, what problems, if no, are you satisfied? Yes, generally the more sophisticated the community, the easier is the waste collection e.g. well demarcated streets and appropriate waste bins and appropriate handling all in more sophisticated areas as against bad roads, poor demarcation and access routes and use of substandard waste bins in less sophisticated areas.

7. Do you think the culture of the people again has an impact on their attitude towards waste and sanitation in general? If yes, how? If no, why doesn't it? Yes. Definitely when culture here means acquired habits that emanate from neglect of values and bad behavioral patterns have a negative attitude towards waste and sanitation.

8. Have you encountered some opposition in trying to deliver the best services? If yes, how? If no, are you ok?

Some opposition to our delivery mostly comes from the central containers operations. Sometimes in the bid to increase the number of containers in the community to ease lettering, we are met with resistance of residents who will disapprove of the sitting but who have no alternative site either.

9. If you have the chance what would you say the government and the Assembly should do that will bring better waste management services in the metropolis?

The payment for services by contracting companies should be made promptly to enhance the operations of the companies. They must also pay special attention to dumping sites; modern very reliable sites that can serve the purpose for longer periods.

10. Now your work is to collect waste and dispose it at the dump site. Do you think the Assembly can continue to pay for these services alone and even make it sustainable? If yes, how? If no why?

No. because even at the present level patronage by the Assembly is not able to sustain, much more in the face of growing patronage. All should be encouraged to finding a method of billing all waste generators.

11. How often is the waste collected either from house to house/ a community or the market places?

- i. The standard collection frequency from house to house service is once a week. In a few instances we do twice a week. However, with commercial outlets the frequency varies depending on the demand of the particular concern (e.g. a hotel facility like La Palm Royal Beach Hotel receives a daily service).
- ii. With the community central container/market place service to the nature or volume of refuse determines frequency. The least being one picking a day and the most being 2 times a day.

12. AMA supervises your activities. Do you have regular contact or checks from the officials? If yes, how is it done? If no, why do you think they don't check?

Yes. There are regular checks from the AMA officials through the Waste management department. They have officials who go round especially the community container sites. Sometimes they receive complaints from residential premises and the public at large.

13. Is there any kind of cooperation where waste collectors suggest new measures to the metropolitan Assembly? If yes, how? If no, why?

No. there isn't just a platform for that. Is just been an employer- employee relationship.

14. What do you think will be needed to fulfill the target of proper waste management thereby reducing the adverse effects?

Greater commitment by central government since there is no way the AMA on its own can manage the situation especially in the funding.

15. What do you think is the cause of residence not agreeing to the execution of the Kwabenya Community landfill project?

It seems AMA has not kept faith with residents in other landfill areas before now. They simply do not trust the AMA to manage the site well to protect them from the side effects of a badly managed landfill site.

16. According to a report I read, it says there is inadequacy of waste collection vehicles, why is that so?  
On the average the average waste management company in Ghana is not resourceful enough. Stemming from the irregular payment for services. Also there is no official support from central government or the AMA by way of capacity building equipment wise and also not doing anything about high custom duties on imported waste vehicles.

17. How are the activities of waste collection financed?

The activities of waste collection are in main financed by waste companies themselves, before they receive payments from either AMA or house to house clients.

18. Again there is an issue that there is inadequate Government financial support on sanitation, but then attention is more on curative instead of preventive aspects of sanitation? What can you say about that?

This is true. There isn't enough advocacy work in that direction. Bylaws on disposal of waste are not rigidly enforced.

19. Is there lack of the public awareness on the need to pay for sanitation services? If yes, why do you think so? If no, then why are they not paying?

Yes. There hasn't been enough sensitization. People have accepted the notion that the government must pay for the disposal of waste that they create.

20. Will you say there is not much of intense sustained public education on sanitation? If yes, why is it so?

Yes. It seems it is not considered a priority issue.

21. I understand there are always problems in acquiring land for public waste disposal, why do you think this is so, and what can be done?

Land for placement of containers to receive waste from the community also has its problems as most parcels of land are owned by individuals so they have other purposes they want to put them to. Added to that is the nuisance in convenience that goes with improper management of the sites.

22. Will you say there is lack of Political Will to implement sanitation policies? Indeed there is government fear that any firm or stern implementation and enforcement may lose the votes in elections.

### **Interview with Dr. John B. K. Yabani**

**Dr. John B. K. Yabani** is a public health specialist with the Ghana Health Services but also have a responsibility of advising AMA on health issues. The interview was conducted on the **10<sup>th</sup> of March 2006** at the office of the Dr. Yabani. The purpose of the interview was to gather information on the health situation in Accra as a result of improper SWM. Other issues like the link between SW and public health was sort

### **Questions and answers**

1. Introduction, your profession, what you do?

I am a public health Specialist and I work with the Ghana health Service. I organize the health service in the Accra Metropolis. I also advise the Accra Metropolitan Assembly on Health issues.

2. Can you say a little about the history of your organization and all you do especially with reference to sanitation and waste management?

My organization (which is Ghana Health Services) was born out of the ministry of Health in February 2003 to take charge of services to population. The organization in the discharge of its services does preventive and curative care, health promotion and rehabilitation of the sick. The organization collaborates with the local government to deal with the sanitation and waste management issues.

3. What is the health situation in Accra today? What percentage of recorded cases is as a result of improper environmental sanitation?

The health situation in Accra is not the best because the city has been engulfed by filth due to the attitude of the people. There is indiscriminate disposal of solid and liquid waste and this has resulted in very poor

environmental sanitation and has led to the persistence of infectious communicable diseases like malaria diarrhea diseases which are preventable.

4. What are some of the common disease recorded in the metropolis? The Accra Metropolis has just had a cholera epidemic about 1,529 cases were treated in all facilities in the metropolis and 15 deaths recorded in 2005. Only 8 cholera cases were seen in 2004. in 2005 some of the common diseases in the metropolis are as follows: Malaria 47%, acute respiratory infections 11%, hypertension 6%, skin diseases 5%, diarrhea diseases 4%, pregnancy and related diseases 4.1%, home and occupational accidents 3.5%, acute eye infections 2.7%, anaemia 2.2%, and all other diseases account for 10% for the year 2005.

For the year 2004 Malaria 44%, acute respiratory infections 12%, hypertension 4.8%, skin infections 5.9%, diarrhea diseases 4.4%, home and occupational accidents 3.9%, acute eye infections 2.8%, rheumatism 2.7% pregnancy and related complications 2.3%, dental caries 2.0%, all other diseases 14.9% For the Year 2003 malaria was 47%, acute respiratory infections 11.9%, skin infections 7%, diarrhea 5%, acute eye infections 4.5%, diabetes mellitus 4.1%, rheumatism 3.4%, dental caries 2.8%, pregnancy and related complications 2.3%, home and occupational accidents 2.3%.

5. What kinds of diseases are mostly recorded from people living in high income and low income communities? What will you say is the reason for the difference if they are? From the top 10 diseases you will realize that there are diseases like hypertension and diabetes mellitus, there are disease of affluence. It is actually difficult to indicate the kinds of diseases mostly recorded by people of higher income group. But for the low income areas of Sodom and Gomorrah, diarrhea prevails there.

6. Will you say they have been improvements in the health situation now? I wish to say that there is improvement in the health situation now but it is not significant at all. There is the need to step up the health promotion in prevention and change the lifestyle of the people. The amount of money spent monthly for cleanup exercise will not improve the sanitation situation unless the people change their behavior of self consciousness to stop throwing litter about and defecate indiscriminately. The Accra Metropolitan Assembly AMA should ensure the bylaws and the metro courts should assist in prosecuting offenders

7. Can you say there is a difference in life expectancy as far as the various localities are concerned? Do you have any data for that?

I cannot say there is a difference in life expectancy as far as the various localities are concerned. I do not have statistics. The only thing I know is that life expectancy at birth of the Ghanaian is 57 years and it could be reduced when we do not do anything about the HIV/AIDS pandemic.

8. How much money is spent yearly, within the Accra metropolis on the health of the populace?

About 6 billion cedis was spent within the Accra Metropolis on health of the populace not taking personal emolument of health staff into account.

9. How can you relate the health problems in Accra with the waste situation?

The metropolis has just recorded from a cholera epidemic which claimed 15 lives out of 1,529 people admitted for treatment and it is attributed to the improper waste management situation. The worse situation is related to malaria and diarrhea diseases.

## Appendix B: Questionnaire for households

1. What is the name of your area? .....
2. How do you dispose of waste?
  - a. Bury it      b. Burn it      c. Send it to community collection/ transfer point      d. make compost      e. collected by waste contractors'      f.
  - Other.....
3. Why did you choose the method of waste disposal in 3?
  - a. I was introduced to it from my childhood
  - b. This is the practice in the community
  - c. That is what I was thought in school
  - d. That is what my friends do
  - e. The law
  - f. no collection point
  - f. Other.....
4. What do you think will motivate you to participate in community- based solid waste management projects?
  - a. financial incentives from project
  - b. Environmental reasons
  - c. Other.....
5. Which of the disposal practices will you prefer?
  - a. Composting
  - b. Landfilling
  - c. Dumping in open spaces
  - d. Incinerating
  - e. Other.....

Any reason for the choice?.....

.....

.....
6. Are you aware of any adverse environmental impacts of solid waste in the community? If yes, what?.....
7. Can you mention some of the common diseases in your area?.....
8. What do you think is the cause of the disease mentioned in 7?.....
9. Do you know about the National Sanitation Policy? Yes/NO

10. The National Sanitation Policy which sells at 200,000 cedis spells out what is required of every individual. Are you aware of what the policy is made up of and what is expected of you to solve the waste problem?

.....  
.....

11. If the answer to 9 is no, how can you contribute to solving the waste problem?

.....  
.....  
.....

12. Some years ago there were council officials coming around often to see if homes were clean otherwise you will have to answer in court. What do you say about the work of the officials now?

.....  
.....  
.....  
.....

13. What do you think about how the council enforces the law in your area; do you think they do enough to keep you on the alert in keeping your environment clean?

- a. Yes, they come around every **day, week, month, and year**  
b. No, they don't come around at all

14. How do you express your opinion about waste, say uncollected waste in your community?

.....  
.....  
.....  
.....

15. How much do you spend approximately on mosquito spray or coil in a month?

.....  
.....

16. How often do you visit the hospital?

.....

17. What are some of the reasons and diseases or sicknesses that take you to the hospital?

.....  
.....  
.....  
.....  
.....

18. How much of your income goes into mosquito spray or coil, hospital and dispensary?

.....  
.....  
.....

19. How often are you affected when there flooding?.....

20. Do you get money or items for all your losses from NADMO?

.....  
.....  
.....

21. Do you think you will ever pay for waste collection? If yes, on what grounds will you pay?

.....  
.....  
.....  
.....if no, why wont  
you pay?  
.....  
.....  
.....  
.....  
.....

22. If you are asked to pay a little money (on agreement between you and the appropriate bodies) on say electricity, water or property rate so your waste will be taking care off come what may, will you pay?

Yes/No,

reason.....  
.....  
.....  
.....  
.....  
...

23. What will you say can be done to improve waste services in your area?

.....  
.....  
.....  
.....  
.....

24. Do you think the government and the council are doing enough to solve the waste problem? If yes what are they doing? If no, what aren't they doing?

.....  
.....  
.....  
.....  
.....

25. What can you do as a person or a household in helping to solve the problem?

.....  
.....  
.....  
.....

26. How serious is the problem of Solid waste to you? a. serious b. very serious

And who should be involved in solving the problem? a. government b. AMA c. everybody

**MSC ENVIRONMENTAL MANAGEMENT, 10<sup>TH</sup> SEMESTER  
MASTER THESIS**



**ACCRA'S DUMPSITE**