

**GHANA INSTITUTE OF JOURNALISM (GIJ) GRADUATE SCHOOL OF  
COMMUNICATIONS**



**CHALLENGES FACED BY ZOOMLION GHANA LIMITED IN THE  
MANAGEMENT OF SOLID WASTE IN GHANA**

**BY**

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MASTER'S THESIS (MA)**

**DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL OF THE GHANA  
INSTITUTE OF JOURNALISM (GIJ) IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF MASTER'S (MA) DEGREE IN  
DEVELOPMENT COMMUNICATION**

**MARCH, 2017**

## DECLARATIONS

### **Candidate's Declaration**

I, Evangeline Ankrah, declare that this dissertation has been independently carried out by me; and that the dissertation contains no material that has been presented for the award of any other degree or diploma in any university or institution; and that, all works and opinions of others, which I considered relevant in this dissertation and reviewed and reported, have been duly acknowledged.

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**Evangeline Ankrah**  
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.....  
**Date**

### **Supervisors' Declaration**

We hereby certify that the preparation and presentation of this dissertation was independently carried out by the researcher and supervised by us in accordance with the guidelines on supervision of dissertation as laid down by the Graduate School of the Ghana Institute of Journalism (GIJ).

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**Date**

## DEDICATION

I dedicate this work to the Lord Almighty, my parents and siblings

## **ACKNOWLEDGEMENT**

I would like to express my sincere gratitude to the Almighty God for his unwavering support during my studies. I also wish to thank the numerous scholars, whose works contributed immensely towards this project. I equally appreciate frank critiques from my supervisors which shaped this document.

I am profoundly grateful to Dr. Daniel K. Hammond and Ms Scholastica Seke, my supervisors, who supervised this work. I am also grateful to Mrs. Grace Tagoe for all her wonderful support and encouragement on me to pursue this master's programme.

Furthermore, I am forever indebted to the Management of Zoomlion Ghana Limited for accepting me to undertake this case study at their company. I am personally grateful to the Group Head of Communications of Zoomlion Ghana and her staff for making available to me useful information. Lastly, to Mr. John Bosco Teyiri for his advice and proofreading of this thesis.

I cannot forget of my parents and siblings for their continued support and prayers. I wish to say, thank you and God richly bless you.

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## **ABSTRACT**

In Ghana, waste collection and disposal have become some of the topical issues hotly debated in the academia, at policy level and among civil society. The matter has been a major challenge facing Ghana as waste management institutions are inundated with the task of collaborating with major stakeholders in search for sustainable solutions. Abrokwah (1998) argued that the country's inability to enforce existing laws, among others, is making it impossible for Ghana to win any war against the perennial sanitation problems confronting the country. It is against this background that this case study was carried out at Zoomlion Ghana Limited, as the major player in the management of solid waste in Ghana. The main objectives were to find out challenges confronting the waste management giant as well as the quality of collaboration between the company and Government. Other objectives were to find out from the respondent whether current laws were effective enough to help them deal with the worsening sanitation issues. The study adopted and administered a Likert scale questionnaire and a structured interview guide. The Group Head of Corporate Communications of Zoomlion filled the questionnaire and granted the interview. It was established that Zoomlion Ghana is inundated with major challenges as existing laws could have helped in addressing the challenges of political interference, lack of enforcement of existing laws, low budgetary allocations amidst negative behavioural tendencies. The study then recommended a depoliticisation of sanitation management institutions and advocated for more investment and budgetary allocations from central government to help address the challenges. The study also called for the swift application of the law to sanitation related offenses in the country. For further studies, the researcher called for a quantitative but expanded research into the phenomenon since current study was limited to the major partner (Zoomlion Ghana Ltd.) to central government. It is the hope of the researcher that this study will not only be useful to policy makers and investors in the industry but will also add to existing knowled

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

In the early days, waste disposal did not pose difficulty as habitations were sparse and land was plentiful. Sanitation became problematic with the rise of towns and cities where large numbers of people started to congregate in relatively small areas in pursuit of livelihoods (Shafiul & Mansoor, 2003). While the population densities in urbanized areas and per capita waste generation increased, the available land for waste disposal decreased proportionately (Shafiul & Mansoor, 2003).

Currently, middle and low-income countries are experiencing the most unprecedented growth rates in their urban populations (Karn & Harada, 2002; Nwaka, 2008 and Songsore, 1999), owing to the high natural births and rural-urban migration, with the resultant effect of overcrowding in cities without the corresponding capacity and resources of these cities to expand the provision of basic services such as water supply and sanitation (Bogrebon, 1997).

On his part, Hunter (2000) predicts that in the foreseeable future, more than half of the world's population will live in urban areas, and that developing countries, including Ghana, will be the worst hit by sanitation problems.

It is reported that beyond the burden of most countries to have safe place for waste disposal, nine per cent of the global population, or 748 million people, continue to rely on unimproved drinking water sources, of whom almost a quarter (173 million people) still rely on direct use of surface water (WHO & UNICEF, 2014).

In a Joint Monitoring Programme for water and sanitation, conducted by United Nation International Children Education Fund (UNICEF) and WHO (2006), Ghana is said to have an encouraging water supply of 75% and worse sanitation coverage of 18% with less hope of

improvement. It is estimated that about 2.6 billion people worldwide still do not have a safe means of disposing of their wastes exposing them to several diseases (WHO and UNICEF, 2004).

According to these institutions, despite increases in sanitation coverage, progress has been slow to the extent that, globally, 2.5 billion people do not have access to improved sanitation facilities. They further reveal that there are still 46 countries where less than half the population has access to an improved sanitation facility. Among the world's regions, Southern Asia and sub-Saharan Africa continue to have the lowest levels of coverage (ibid, 2014; p.16). Ghana's population proportion with access to improved sanitation was pitched at 21.2% by 2015 instead of the targeted 52% (Ghana MDGs Report, 2008; UNDP, 2010). According to the Millennium Development Goals (MDGs) target set by the United Nations, countries, especially developing countries should have halved, by 2015 the proportion of people without sustainable access to safe water and sanitation and improve the lives of 100 million slum dwellers by 2020 (G8 Gleneagles 2005).

Poor sanitation management appears to be one of Africa's mental cancer. Research shows that solid waste collection in many African cities leaves much to be desired (Redlinger *et al.*, 2001). Lack of transport infrastructure, coupled with poor collection methods has led to such undesirable situation in African cities, (Amuzu & Leitmann, 1994; Devas & Korboe, 2000). It is reported that only 10% to 30% of all the continent's urban households' solid wastes are collected amidst inevitably most deficient services delivery for informal settlements (WHO and UN-Habitat, 2005; Redlinger *et al.*, 2001). Experts say, households that lack these waste collection materials eventually tend to either dump their garbage on open plots, in low-lying areas, public spaces and rivers, or simply burn it in their backyards. They contemplate that uncollected waste may also accumulate on streets, thus clogging the storm-water drainage systems, (Keraita *et al.*, 2003).

But contributing to the subject in his article: *Lifting the Lid on Africa's Toilet Crisis*, Lythgoe (2012) laments that voices emphasizing the need for improved sanitation facilities in Africa have grown stronger over the last decade, but now better publicity needs to translate into real progress.

According to Zia & Devadas (2007), "Solid waste management is the application of techniques to ensure an orderly execution of the various functions of collection, transport, processing, treatment and disposal of solid waste (Robinson, 1986). It has developed from its early beginnings of mere dumping to a sophisticated range of options including re-use, recycling, incineration with energy recovery, advanced landfill design and engineering and a range of alternative technologies. It aims at an overall waste management system which is the best environmentally, economically sustainable for a particular region and socially acceptable (World Resource Foundation, 1996; McDougall et al., 2001)."

## **1.2 Statement of Problem**

In Ghana, the issue of waste disposal has become a topical issue hotly debated in academia, at policy level and among civil society groups. This is because the subject matter (Solid waste) has been a major challenge facing Ghana and waste management institutions have been inundated with the task of partnering other stakeholders in search of sustainable solutions. Karley (1993), in an article entitled, "Solid Waste and Pollution," in the Daily Graphics (October 9, 1993) identified some of the issues, including lack of suitable dumping sites, facing Ghana.

As cited in George (2004) article: *Problems of Solid Waste Management in Nima, Accra*, Abrokwah (1998) observed that the country's inability to enforce existing laws, among others, is making it impossible for Ghana to win any war against the perennial sanitation glitches. It is against this background that this study is being carried out as a case study to

investigate challenges that waste management giant, Zoomlion Ghana Limited is being confronted with.

### **1.3 Research Questions**

Basic questions that are considered critical in this study are:

- i. What are the main challenges that confront Zoomlion Ghana Limited as waste management company in Ghana?
- ii. What remarkable efforts are being pursued by Zoomlion Ghana Limited to effectively manage solid waste in Ghana?
- iii. How effective is collaboration between Zoomlion Ghana Limited and Key Government agencies as stakeholders?
- iv. Are there laws regulating the sector; and how effective are these laws, if any?

### **1.4 Research Objectives**

The objectives of the research are to:

- i. Investigate the main challenges that confront Zoomlion Ghana Limited as waste management company in Ghana.
- ii. Ascertain efforts being pursued by Zoomlion Ghana Limited to effectively manage solid waste in Ghana.
- iii. Find out if there exists any effective collaboration between Zoomlion Ghana Limited and Government as key stakeholder.
- iv. Establish if there are laws regulating the sector; and how effective these laws are.

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

Despite existing legal frameworks to facilitate the journey to enforce compliance and consolidate our collective efforts to best manage the sanitation and waste commerce and households generate, the issue of poor management of solid waste generated on a daily basis, continues to threaten public health, especially of those in urban cities. This research study is

aimed at coming out with the relevant findings regarding the situation in Ghana. The recommendations generated out of this study will help policy makers at central and local levels as well as other stakeholders to contribute meaningfully to the proper management of the solid wastes generated in Ghana. The findings and recommendations will also go a long way to reawaken the consciousness of both citizens and regulatory authorities about existing laws regarding wastes generation and disposal. Researchers, who take interest in the subject and wish to investigate the phenomenon, will find the material, as contained in this document useful.

### **1.6 Delimitations of the study**

The study focuses solely on Zoomlion Ghana Limited. The study sought to critically understand the major challenges Zoomlion Ghana was faced with in complementing central government's effort in dealing with the canker of the country's deteriorating sanitation and waste management issues in general. Accordingly, the study sought the official position of the management of the Company and not individual participants' views. Therefore, the study did not survey other department or employees as well as other stakeholders in this study.

### **1.7 Limitations of the study**

The study is expected to encounter some levels of limitations. A significant restriction with regards to the undertaking of this study is with the administering of the Likert Scale questionnaires. Respondent might be influenced by the nature of the questionnaire to provide leading responses for their convenience. To mitigate this limitation, the researcher included a number of open-ended questions to check any bias responses. The researcher also conducted an unannounced face to face interview with the respondent in her office to cross check the sincerity of responses provided on the questionnaire. Since sample is limited to only the Group Head of Zoomlion Ghana and as cautions by qualitative researcher and the

limited nature of the sample size, the findings were limited to the Company and not a generalised representation of other stakeholders' in the waste management industry.

### **1.8 Organization of the study**

This study contains five chapters. Chapter one deals with background of the study, problem statement, objectives, and research question and significance as well as scope of the study. Chapter two consists of literature review - theoretical and empirical frameworks. Chapter three contains the profile of Zoomlion Ghana Limited, methodology or study design, and sample size of the study. Chapter four presents the results and discussions, while chapter five deals with summary of the study findings, conclusions and recommendations.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

Ghana continues to make giant strides in some aspects of her economy but faces the ever-threatening sanitation problems in recent times. This research study seeks to investigate the key challenges solid waste management giant, Zoomlion faces in augmenting Government of Ghana's effort in the management of solid waste in the country. This chapter reviews available literature on the subject, as they copiously exist.

#### 2.2 Background

It is often argued that every term used in a scientific theory or in a given branch of science ought to be precisely defined. Definition may seem the most obvious, and perhaps the only adequate method of characterising a scientific concept, (*Pongrácz, 2002*).

The European Union (EU) defines waste to mean any substance or object which the holder discards or is required to discard (European Council 1991a). In their part, the OECD (1994) says, wastes are materials other than radioactive materials intended for disposal. The United Nations Environmental Programme (UNEP, 1989) defined wastes as "substances or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law". Unfortunately, in Ghana, this researcher is unable to find Ghana's version of "waste" or "waste management" definitions. For the purposes of this study, the three definitions offered by the various authorities should apply in this scope.

Indeed, the notion of waste is relative in two main respects. First, something becomes waste when it loses its primary function for the user, hence someone's waste output is often someone else's raw material input. Secondly, the notion of waste is also relative to the technological state of the art and to the location of its generation. Waste is therefore a very dynamic concept. In fact, the European Chemical Industry Council (CEFIC) argues that it is



Human activities generate waste materials that are often discarded because they are considered useless. These wastes are normally solid, and the word *waste* suggests that the material is useless and unwanted. However, many of these waste materials can be reused, and thus they can become a resource for industrial production or energy generation, if managed properly. Waste management has become one of the most significant problems of our time because the American way of life produces enormous amounts of waste, and most people want to preserve their lifestyle, while also protecting the environment and public health. Industry, private citizens, and state legislatures are searching for means to reduce the growing amount of waste that American homes and businesses discard and to reuse it or dispose of it safely and economically. In recent years, state legislatures have passed more laws dealing with solid waste management than with any other topic on their legislative agendas (Williams et al, 2002).

### **2.3 Solid Waste Management**

The British-Columbia Guide (2016) on Solid Waste management planning argues that reducing greenhouse gas emissions from waste is an important goal for all levels of government. In the view of the Guide, waste reduction, reuse and recycling can reduce greenhouse gas emissions both by lowering the demand for new materials and products (reducing upstream environmental impacts) and by minimizing downstream environmental impacts such as transporting waste over long distances and disposing of it in landfills. Other factors that influence greenhouse gas emissions associated with solid waste disposal include the waste composition, the mass disposed per year, precipitation rates at landfills, landfill gas systems (flaring, capture, oxidation beds, etc.), and landfill waste management (aeration, turned piles, etc).

Article 1 of the European Council (1991) defines waste management as “the collection, transport, recovery and disposal of waste, including the supervision of such operations and

after-care of disposal sites”. On their part, Cheyne and Purdue (1995) argued that waste management is concerned not only with final disposal of waste but with the whole cycle of waste creation, transport, storage, treatment and recovery, and does so in order to prevent pollution and harm from taking place. Others have also argue that the purpose of waste management is protection of the environment, human health and natural resources; and therefore, waste management shall be understood as a system, providing medium for making changes in the way people behave with respect to waste, (Pongrácz & Pohjola 1999a.).

#### **2.4 Challenges Associated With Solid Waste Management**

Maas, Hogland and Guerrero (2012) opined that solid waste management was a challenge for the cities’ authorities in developing countries mainly due to the increasing generation of waste, which in their view, was the burden posed on the municipal budget as a result of the high costs associated to its management. Their study did an analysis of literature on the work done and reported mainly in publications from 2005 to 2011 and which were related to waste management in developing countries. Their study found that few articles gave quantitative information. Their analysis was conducted in two of the major scientific journals, Waste Management Journal and Waste Management and Research. The objective of their research was to determine the stakeholders’ action/behavior that have a role in the waste management process and to analyze influential factors on the system, involving more than thirty urban areas in 22 developing countries in 4 continents. A combination of methods was used in this study in order to assess the stakeholders and the factors influencing the performance of waste management in the cities. Data was collected from scientific literature, existing data bases, observations made during visits to urban areas, structured interviews with relevant professionals, exercises provided to participants in workshops and a questionnaire applied to stakeholders. Descriptive and inferential statistic methods were used to draw conclusions. The outcomes of their research were a comprehensive list of stakeholders that were relevant

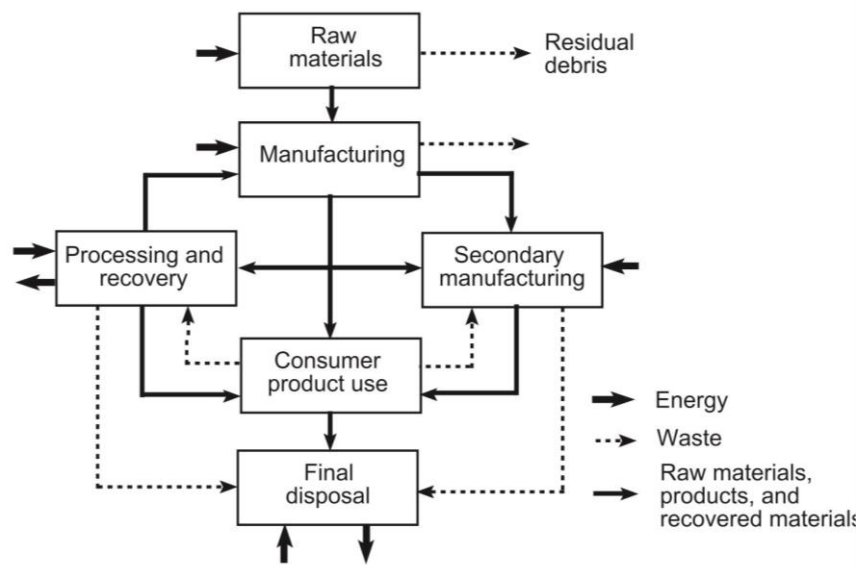
in the waste management systems and a set of factors that revealed the most important causes for the systems' failure.

Lack of full appreciation of the enormity of waste related problems remains a critical challenge as policy interventions appear to be developed on the spur of the moment. In its view, the United Nations Environmental Programme, UNEP (2004) argues that it is difficult to find realistic estimates of the amount of waste generated in Ghana per day, much less the average volumes or percentages of the various components of waste generated periodically in Ghana. In his thesis, Read (2003) observed that solid waste management is characterized by ready-made prescribed answers, with single-issue interest groups promoting a single solution, instead of a diversified, multi-action approach. The truth, he contended, is that no single solution can manage society's waste adequately.

#### **2.4.1 Increasing Generation of Waste**

In the words of the United Nations Environmental Programme (UNEP, 2004), solid waste generation has become an increasing environmental and public health problem everywhere in the world, particularly in developing countries such as Ghana. Increasing population levels, booming economy, rapid urbanization and the rise in community living standards have greatly accelerated the municipal solid waste (MSW) generation rate in developing countries (Minghua et al., 2009).

The problem of solid waste in most parts of Ghana appears to be characterized by single and ad hoc solutions such as: mobilizing people to collect waste and desilt choked gutters after a flood disaster or for a special imminent occasion.



**Figure 2: Flow of materials and waste in an industrial society. (Source: Williams and Tchobanoglous, 2002; p.1.2)**

The problems of waste generation and management in most cities especially in developing countries have become one of the intractable environmental problems facing urban centres. This situation could be attributed to low level of technology that is not sophisticated enough to handle the high rate of waste generation (Baum, 1973). Human population and rural-urban migration has increased through urbanization, high fertility rate and industrialization, yet the service rendered is not sizeable enough to control the high level of solid waste generated in urban areas as these have contributed to a large extent on the damaging effect of the urban environment (Sule, 2004). Today, the rate at which waste is being generated is about 70% as compared to the total rate of its disposal which is 30% (Edu, 2003).

Over the years, as waste management becomes a threat to public health, experts have been struggling to find effective but sustainable solutions to addressing waste related problems globally. One of such innovations is the 5Rs pollution prevention hierarchy (Reduce, Reuse, Recycle, Recover, Residuals Management), a useful tool for communities to use when looking at opportunities to improve their solid waste management system. According to a joint publication by British Columbia and the Ministry of Environment, UK, (2016), the order of preference in the pollution prevention hierarchy is for waste management at one level to

only be undertaken when all feasible opportunities for pollution prevention at a higher level have been taken. As an example, opportunities for recycling should be explored only after all opportunities for reduction and reuse of materials have been exhausted as represented in the figure below:

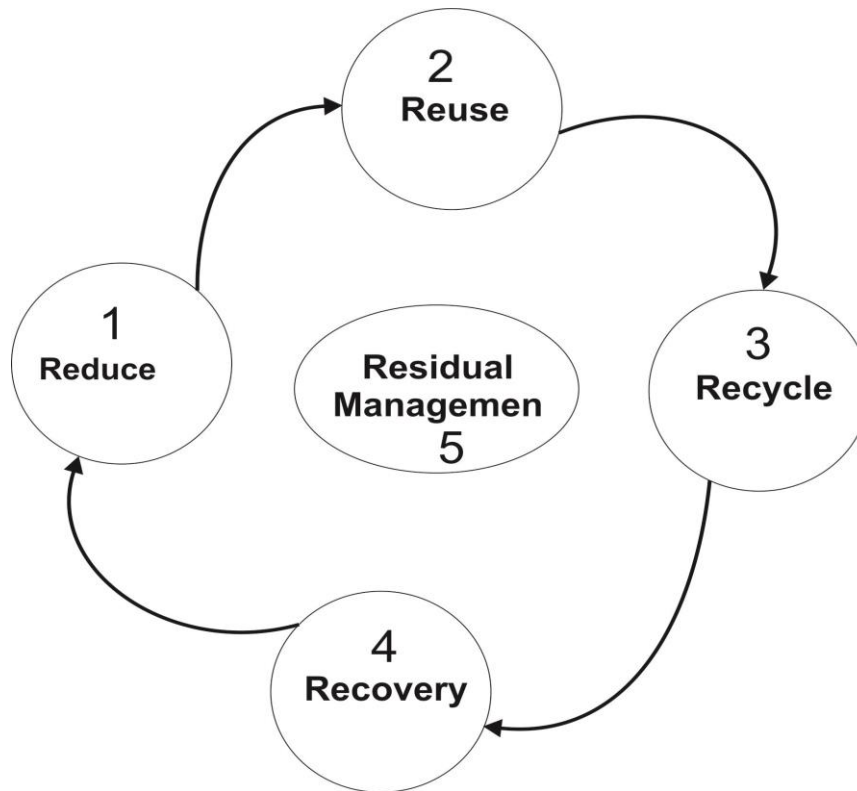


Figure 3: Flowchart to distinguish waste from non-waste (Source: Pongrácz, 2002; P.84).

According to Anomanyo (2004) about 1800 tonnes of municipal solid wastes is generated per day in the Accra Metropolis alone and the average waste generated per capita per day was estimated at 0.5 tonnes. Presenting statics, Anomanyo revealed that the tonnage of solid wastes generated in the Greater Accra alone (AMA) presents the following waste disposal scenario; by dumping is 12.2%, dumping at public dumping site is 51.4%, dumping in gutters is 11.6%, buried by households is 4.6% while waste collected by waste management agents constitutes 19.5%. By Anomanyo's analysis, over half of solid waste generated in Ghana alone end up at dumping sites and almost 31% end up in our gutters.

#### **2.4.2 High Cost of Waste Management**

The management of waste is the lone responsibility of local regulatory agencies, and that the public is not expected to contribute (Vidanaarachchi et al., 2006). Solid waste management is a challenge for the cities' authorities in developing countries mainly due to the increasing generation of waste, the burden posed on the municipal budget as a result of the high costs associated to its management, (Guerrero et al, 2013).

Municipalities have failed to manage solid waste due to financial factors, to the extent that huge expenditure is always required to provide the service (Sharholy et al., 2007), the absence of financial support, limited resources, the unwillingness of the users to pay for the service (Sujauddin et al., 2008) and lack of proper use of economic instruments have hampered the delivery of proper waste management services. In another study, Sharholy et al. (2008) indicated that the involvement of the private sector is a factor that could improve the efficiency of the system.

### **2.4.3 Collection, Transfer and Transportation**

According to Kreith (1994), transfer and transport involves two steps: (1) the transfer of wastes from the smaller collection vehicle to the larger transport equipment and (2) the subsequent transport of the wastes, usually over long distances to the final disposal site.

In their research work, Guerrero et al, (2013) discovered that municipalities collect waste from the commercial areas from time to time to 1 time a week (e.g. Lilongwe). The collection in the inner city also varies from 14 times a week to 0. In the studied cities, the researchers said that solid waste generated is collected at fixed stations or door to door. Few of the cities, according to them, have transfer stations. In most cities in Ghana, waste collection, transfer and transportation is a collective responsibility.

Individuals either collect and transport their own household waste to the dumping sites designated by local authorities or collect their wastes in containers provided them by waste collection agencies or companies for onward transportation to the dump site. Waste produced domestically is usually varied and needs to be stored in containers until the collection time is due. Storage should be on a short-term basis only and should prevent the waste from being released to the environment, (US EPA, 2008).

In Ghana, the government started privatizing Solid Waste Collection (SWC) in order to meet the collection demand of the enormous waste being generated on a daily basis. This privatization appeared to have been granted in the mid 1990s (Baud and Post, 2002). Indeed, Zoomlion Ghana Limited, where this study is conducted, is the largest waste management institution contracted by the TMA though it also does some work on private basis. Zoomlion, unlike the other contractors is not assigned to specific areas or zones within Tema but are rather all over.

Puopiel (2010) in his thesis argued that indiscriminate dumping, irregular collection of waste generated and inadequate resources are the key problems facing solid waste management in

the Metropolis. In the Metropolis, it is estimated that 810 tonnes of waste is generated a day and out of this, 216 tonnes are hauled daily. This leaves a backlog of 594 tonnes uncollected a day. Collection by communal systems inherently involves collection from a public area not from a private establishment or household and requires the participation of the residents who bring their refuse to a communal container or to an attending refuse collecting vehicle (upon belling) (Cointreau-Levine, 1994).

#### **2.4.4 Treatment**

This model argues that waste treatment is fundamentally crucial for effective waste management. In the view of the model, Shekdar (2009) argues that many composting facilities have been shut down, among others, due to inadequate monitoring of the quality of the compost being produced and incompatibility of plant design with the characteristics of the solid waste. Both factors are related to lack of awareness, knowledge and appropriate infrastructure. Maas et al found in their study that 14 of the investigated cities did not have composting practices, while the other 21 compost organic wastes up to some extent, either at the household level, or by the private sector or municipality. In relation to domestic burning of waste, they found that 22 of the cities report the practice of open burning of waste at the household level.

In their research, Guerrero et al, (2013) found that 14 of the investigated cities do not have composting practices, while the other 21 compost organic wastes up to some extent, either at the household level, or by the private sector or municipality. In relation to domestic burning of waste, it was found that 22 of the cities report the practice of open burning of waste at the household level.

#### **2.4.5 Disposal and Recycling**

Most of the disposal sites in the studied cities are open dumps without leachate treatment, protection at the bottom by a geomembrane or neither clay-lined layer, gases treatment nor

other infrastructures needed (ibid). Maas and colleagues did receive a diversity of waste for their investigation. They found that the distances to the official disposal sites varied. Besides the official disposal sites, the cities suffered from the illegal disposal of waste in rivers, lakes, oceans, drainage channels, empty lots and roadsides.

Maas and his colleagues included recyclable materials such as plastic, paper, metal, glass, organic, battery, electric and electronic in their study. Their findings suggested that when citizens received information about the benefits of recycling and the sorting method or technique of the waste and they participated in the designing of the programs, they were more likely to participate in recycling campaigns. It was also found that when municipal leaders are interested and give priority to solid waste issues, they support strategies which include more efficient collection systems, better infrastructure and low cost recycling technologies.

## **2.5 Waste Management in Ghana and It's Challenges**

In their investigations, Guerrero, Maas and Hogland (2013) sought to evaluate the stakeholders' action/behavior that has a role in the waste management process and to analyze influential factors on the system, in more than thirty urban areas in 22 developing countries in 4 continents. A combination of methods was used in this study in order to assess the stakeholders and the factors influencing the performance of waste management in the cities. Data was collected from scientific literature, existing data bases, observations made during visits to urban areas, structured interviews with relevant professionals, exercises provided to participants in workshops and a questionnaire applied to stakeholders. Descriptive and inferential statistic methods were used to draw conclusions. The outcomes of the research are a comprehensive list of stakeholders that are relevant in the waste management systems and a set of factors that reveal the most important causes for the systems' failure. An analysis of literature on the work done and reported mainly in publications from 2005 to 2011, related to waste management in developing countries, showed that few articles give quantitative

information. The analysis was conducted in two of the major scientific journals, Waste Management Journal and Waste Management and Research.

Puopiel (2010) in his investigation reports that in recent past, solid waste disposal in Ghana was a big challenge to the various assemblies as a result of urbanisation and increasing densities. And that these assemblies find it difficult to deal with the large quantities of solid waste generated. This is due to the fact that, people resort to indiscriminate dumping as the only means to managing their domestic solid waste.. This section of the review analyses solid waste management processes in Ghana with AMA and KMA as a case. These include collection and disposal as well as waste management regulation and policy in Ghana. The next sub-section discusses solid generation in AMA and KMA.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This research work was carried out to find out major challenges faced by waste management company, Zoomlion Ghana Limited, which major concentration or core competence is in both liquid and solid waste management in Ghana. This chapter presents the methodology that was employed for the conduct of the study in achieving the objectives. It examined the basic aspect of research design, purpose of the study, data collection methods, the study population and sampling design and methods of data analysis. It also presented the sampling techniques employed in determining the required sample size that participated in the study.

#### **3.2 Profile of Zoomlion Ghana Limited**

Zoomlion Ghana Limited was formed as a locally based waste and sanitation management company in Ghana, in the year 2006. Over the years, the company has not only grown to be a multi-national waste management giant but as an international award winning company in the sanitation related industry with regional presence in countries such as South Africa, Togo, Nigeria, Angola, Liberia, and Gambia.

The company has various operational zones. They include Accra Zone, Accra West, Head office and Tema District as well as the other nine (9) operational regions – Ashanti, Western, Upper west, Upper East, Central, Northern, Brond Ahafo and Eastern regions as well as the Volta Region.

Currently the company has six operational departments, including Human Resource Department, Finance Department,, Audit Department, Monitoring and Evaluation Department, Administration Department, and Operations Department, as well as various project modules under a PPP arrangement. The project modules include Eco- Brigade,

NAMCOP, and Afforestation of the YEA. The company has project offices in all the 218 Metropolitan, Municipal, and District Assemblies throughout the country.

In terms of the Company’s Structure, the eleven (11) operational regions are headed by Regional managers, which operate independent of one another in terms of revenue generation and expenditure. In each of the district the Company operates is headed by a District Supervisor, who reports directly to the Regional manager and the latter also reports to the Director of Administration, who is equally described as the General Manager. The Director of Administration reports to the managing Director and the latter also reports to the Executive Chairman or the Chief Executive Officer. The following is the Zoomlion Ghana Limited organogram.

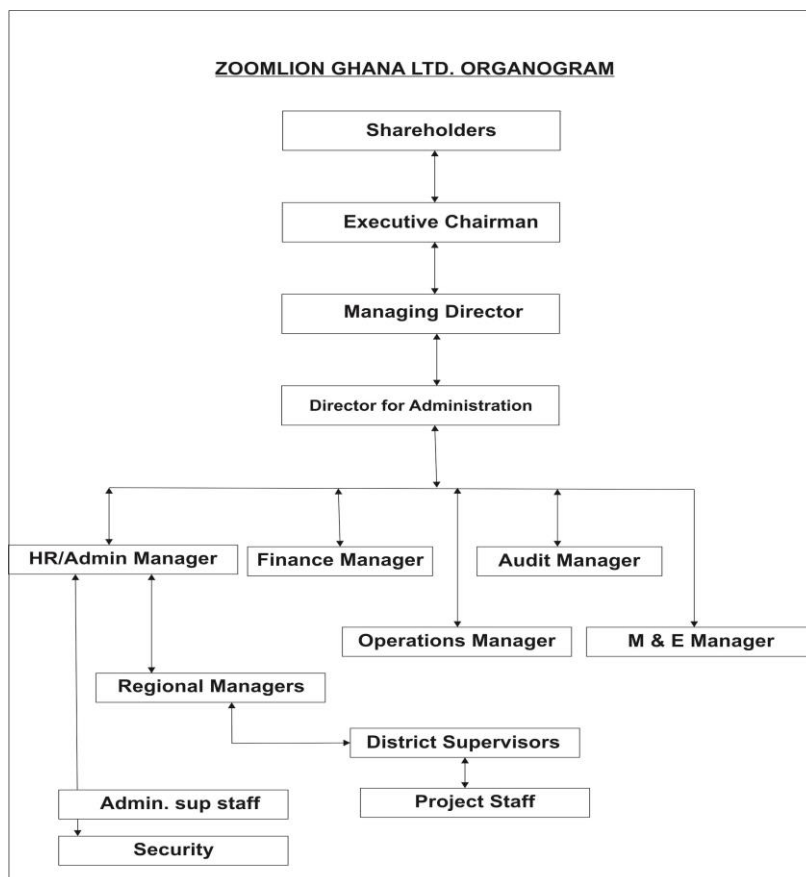


Figure 2: Zoomlion Ghana Limited Organogram. Source: Author’s own Sketch, based on official information

### 3.3 Research Design

This is an exploratory study. Exploratory research involves a literature search or conducting focus group interviews. The exploration of new phenomena in this way may help the researcher's need for better understanding and may test the feasibility of a more extensive study, or determine the best methods to be used in a subsequent study. For this reason, exploratory research is broader in focus and rarely provides definite answers to specific research issues (Van, 2001). The objective of exploratory research is to identify key issues and key variables, and therefore looks for explanations of the nature of certain relationships. It is suggested that the degree of uncertainty about the research problem determines the research methodology (Zikmund, 1984). Since the object of this study is to understand other than measure or explain or predict, the exploratory design was been adopted in this study.

On his part, Kothari (2003) sees research design as an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. This study used two methods, that is, a triangulation approach, to investigate the phenomenon. In his studies, Mitchell, (1986) defines *triangulation* to mean the use of more than one method in studying the same phenomenon under investigation. Other researchers also corroborate this belief by arguing that this type of investigation when carried on a phenomenon may occur at the level of research design or data collection (Bums and Grove, 1993).

This is a qualitative investigation, consistent with case studies. Patton and Cochran (2002) also agree that qualitative research is characterized by its aims, which relate to understanding a phenomenon, and its methods which generate words, rather than numbers, as data for analysis.

Mitchell, (1986) defines triangulation to mean the use of more than one research instrument in studying the same phenomenon under investigation. For the purposes of this investigation,

the purposive sampling method was used for the selection of respondents for interviewing. Participants were selected based on specified reasons to administer a Likert Scale questionnaire on the Head of Communications, who is the official mouth piece of Management of the Company. The purposive sampling technique is a nonprobability sampling. This sampling technique involves selecting certain units or cases that are based on a specific purpose rather than on random basis, (Tashakkori & Teddlie, 2003a) hence the selection of the Head of Communications of the Company. Fraenkel and Wallem (2000) also submit that, purposive sampling is applied based on the specific purpose that the researcher has in mind.

### **3.4 Study Population and Sampling**

The research study population formally consisted of senior officers and the six (6) departmental heads of Zoomlion Ghana Limited but when the Organisation was contacted, it was agreed that the Head of Communications of the Company would fill the questionnaire. Currently total core staff and management population of Zoomlion Ghana is over 3,000 and over 85,000 workers under various public-private partnerships (PPP) modules. The selection of only the Head of Communications of Zoomlion Ghana finds support from Kothari (2004), when he also argues that purposive sampling, also known as deliberate sampling or non-probability sampling, involves a deliberate selection of particular units of the universe for constituting a sample which represents the universe.

### **3.5 Sample Size and Instrumentation**

For the purpose of this case study, sample size was limited to only respondent from the Communications Department. The essence was to elicit a deeper view on the subject matter. In terms of instrumentation, the Likert Scale questionnaire, involving five optional choices of Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1) was used to collect data for analysis. This was because; Likert scale questionnaire was user-friendly

and convenient to very busy category of participants (Muijs, 2004). The use of the Likert scale, therefore, did not only help the researcher to get the Company accept the study to be conducted on their institution but also afforded the researcher the opportunity to easily compute, construct and interpret the statistical figures developed.

### **3.6 Data Analysis Technique**

The data, which was mainly primary, was collected and analyzed, using thematic content analysis and data response techniques, such as graphical representations - pie charts, bar charts and interrelation digraph. The Statistical Package for Social Sciences (SPSS), with Excel application drivers were employed in the process.

### **3.7 Reliability and Validity**

In research, reliability and validity are considered very critical, because, how credible a given research is always dependent on the reliability of the data collected, the methods of collection and the validity element of the findings (Seale, 1999; Cohen, Manion, & Morrison, 2000). Again, Fraenkel and Wallem (2000) advised that a reliable questionnaire be developed so that it can actually measure the phenomenon it intends measuring. The questionnaire used was developed and submitted to my supervisor of the Ghana Institute of Journalism (GIJ) for approval before it was administered, The study ensured that whatever that was intended to be measured and whom to include in the study were actually captured,

In fact, Morrison et al.(2000), teach us that validity of an instrument refers to the extent to which the listed items in an instrument actually measure what they intended to measure. Reliability, according to them, is the extent to which the listed items in an instrument produce consistent answers after repeated trials, using different participants in the same setting or circumstance.

## **CHAPTER FOUR**

### **FINDINGS AND DATA ANALYSIS**

#### **4.1 Introduction**

This study sought to find out major challenges faced by the waste management company, Zoomlion Ghana Limited, whose core competence is in both liquid and solid waste management in Ghana. This chapter presented the findings, discussions and analysis of data collected. The study set out to achieve the following specific objectives; investigate the main challenges that confronted Zoomlion Ghana Limited as was the dominant waste management company in Ghana, ascertain efforts being pursued by Zoomlion Ghana Limited to effectively manage solid waste in Ghana, find out if there existed any effective collaboration between Zoomlion Ghana Limited and Government as key stakeholder, and establish if current laws regulating the sector were effective to achieve the purpose for which they were promulgated.

Since the objective of this study was to understand other than measure or explain rather than predict, the exploratory design was adopted to undertake the study. Data were collected using a Likert Scale questionnaire, comprising optional choices to each of the fifteen (15) questions put in a statement and seven (7) open-ended questions. The strategy was to ensure self-checking for consistency of responses.

#### **4.2 Description of Results**

##### **4.2.1 Bio-data of Respondent**

The sole respondent of this was a female, aged between forty and fifty years. She holds a Masters in Communication Studies and has been working for Zoomlion Ghana Limited over a decade. She is the Group Head responsible for Corporate Communications. It is worth clarifying that the respondent spoke on behalf of the Organisation and therefore, her responses were largely the official position of the Company.

#### **4.2.2 The Likert Scale Responses: Statements**

A Likert Scale questionnaire comprising 15 statements had five optional agreement or disagreement levels to each statement – thus, **5** being (Strongly Agree), **4** ( Agree), **3** (Don't Know), **2** (Disagree), and **1** (Strongly Disagree). After the questionnaire was administered, the following were the responses.

##### **Statement 1: Ghana is one of the filthiest countries in West Africa**

Smith-Asante (2015) of Graphic online of July 22, 2015 reported that Ghana was the 7<sup>th</sup> world's dirtiest country. A related statement as above was made to measure the respondent's level of agreement or disagreement to the claim. In their respond, Zoomlion Ghana Limited declined to express their opinion on this.

##### **Statement 2: Solid waste management is the major sanitation issue facing Ghana**

Even though Zoomlion Ghana earlier declined to express their opinion on whether the Company agrees to the description that Ghana was one of the filthiest countries globally, the Company, however, agreed that Ghana faces major sanitation challenges going into the future as predicted by others (Hunter, 2000).

##### **Statement 3: To deal effectively with solid waste in Ghana requires huge financial investment by Government.**

Many have argued that dealing with sanitation related issues by any country, especially, developing countries requires huge financial commitment by Government. As to whether the sanitation giant, Zoomlion shared this view, the Company was emphatic by strongly agreeing with proponents that Government must invest more into sanitation related programmes and projects (British-Columbia Guide, 2008). In a related statement (4), Zoomlion Ghana agrees strongly to the above statement that current investment by Government of Ghana is inadequate to deal with sanitation challenges confronting the country.

##### **Statement 5: There is a need for effective collaboration between Government agencies and key waste management institutions in Ghana.**

Presumably, fighting the canker of poor sanitation in Ghana requires some significant amount of effective coordination among all key stakeholders. As a company that dominates the industry, Zoomlion strongly believes that there ought to be a strong collaboration between other stakeholders and Government of Ghana. This view of the respondent corroborate general perception that all stakeholders' hands must be on desk to fight the deteriorating sanitary conditions in Ghana that continues to put public health at risk.

**Statement 6: Two key challenges facing the solid waste management subsector is poor budgetary allocation and lack of strong political commitment.**

Contrary to the admonitions by British-Columbia Guide, (2008), it is always the general view that the major challenges facing Ghana in the fight against solid waste management in the country has been the raging issues of poor budgetary allocations and lack of strong political will to fight the menace of the deteriorating solid waste management in the country. This perception was put to Zoomlion Ghana Limited to understand the extent to which they agree or disagree to this perception. In their response, the Company strongly agrees to the perception that there is poor budgetary allocation to solid waste management in Ghana as there is no significant political commitment on the part of Government.

**Statement 7: There are enough laws regulating the solid waste management sector except poor enforcement by regulatory authorities.**

Zoomlion agrees that even though there exist copious laws regulating the general management of solid waste in Ghana, there enforcement of such laws has been very poor on the part of those who should enforce them. Their belief is in tandem with similar views of experts, who have been consistently calling for effectively implementation of existing laws (Aborkwah, 1998). The Company, however, agrees with the researcher's proposal that existing laws dealing with waste management needs to be reviewed.

**Statement 9: Zoomlion has the capacity to deal with solid waste management in Ghana, if having the backing of Government.**

Currently, the biggest waste management company in Ghana is Zoomlion Ghana Limited, which handles most Government of Ghana's sanitation related contracts. Notwithstanding, ongoing concerns are that Zoomlion, as the major sole waste management partner to Government cannot effectively manage Ghana's solid waste in the country if it lacks the required political support to do so. In response, Zoomlion was emphatic that it has full capacity to single handedly manage solid waste effectively in Ghana if Government should give all necessary support and backing by creating the enabling environment for the Company to operate (see Appendix A).

**Statement 11: Civil society's effort alone cannot effectively deal with solid waste issues in Ghana if Government's commitment is not strong.**

Even though some individuals, organisations and experts underscore the urgent need for the involvement of all, Zoomlion strongly agrees with the assertion that current solid waste management challenges cannot be overcome by civil society if government's commitment to the cause is not forthcoming. The Company is of a strong view that there are great potential in the waste management category if policies are friendlier would turn Ghana's solid waste into viable business model. If examples do not exist, Zoomlion Ghana Limited is an on-hand example of waste business model.

**Statement 13: Zoomlion Ghana can single handedly recycle all solid waste generated in Ghana, if given political will and support.**

Presently, the issue is not only about effective management of solid waste in Ghana, in terms of collection, transportation and disposal as identified by Guerrero et al (2013), but also where these unprocessed waste go eventually. As per the definition of waste, the kind of waste generated in Ghana is far from being a waste; after all, there is yet an enormous economic value that can be harnessed from this so-called waste. And so when Zoomlion was asked to respond to the above statement, the sanitation giant was loud and clear that it has the technical capacity to recycle all solid waste generated in Ghana if necessary governmental

support is forthcoming. The Company, however, still believes that more waste management companies are still required in Ghana to effectively deal with waste generated in the country.

**Statement 15: General sanitation in Ghana is bad and the situation will be worst in the coming years if current Government policies are not reviewed.**

Contrary to experts' considered view that Ghana's sanitation or waste management challenges could get worse in the coming years (Hunter, 2000), if current government policies are not reviewed, Zoomlion disagrees. The Company believes that sanitation situation in Ghana will improve with current policies remained unchanged. But Aborkwah (1998) warns that poor implantation of existing laws would make it impossible for Ghana to win the war on poor sanitation.

#### **4.2.3 The Interview**

One of the instruments the researcher used to collect relevant data for analysis was direct, face to face interview with the Group Head for Corporate Communications of Zoomlion Ghana Limited. Beyond the administration of the Likert Scale questionnaire, which was self-administered, the researcher resolved to use the face to face interview as a check on responses of the respondent on the likert scale questionnaire. For about 45-minutes, the researcher had interview discussions with the respondent as reported below,

One of the research objectives of this study was to investigate the main challenges that confront Zoomlion Ghana Limited as waste. In response to the question of what key challenges waste management companies, such as Zoomlion Ghana, face in Ghana, the Group Head of Communications identified; lack of funds and support from government, lack of enforcement of bye laws, attitude of the populace and the persistent politicization of businesses in Ghana. Her responses find support from the works of (Redlinger et al 2001; Amuzu & Leitmann 1994; and Devas & Korboe, 2000; Minghua et al, 2009).

To the question of what the respondent think of Government of Ghana's commitment in dealing with waste management challenges to solve the country's poor sanitation situation in the country, the respondent stated that "in speech there seem to be a lot of commitment but this does not translate into support in deed". This response corroborates the respondent's earlier strong agreement that there is poor budgetary allocation to solid waste management in Ghana as there is no significant political commitment on the part of Government (statement 6).

In recent times, Ghana has been described as one of the filthiest countries globally (Smith-Asante (2015) and so when the question of what the respondent views were as to what he thinks should be done on the part of Government to get rid off filth in Ghana, he stated that Government ought to (1) make more investment in the sector, (2) ensure effective enforcement of existing bye-laws and also support operators in the sector to complement Government's efforts in the fight against prevailing poor sanitation in the country.

Answering the question of "what is Ghana's waste generation (in tones) and whether Zoomlion has the technical expertise and capacity to deal effectively with it waste management in Ghana, given all political support, the respondent revealed that Ghana produces about 13,000 tonnes of solid waste per day and that translates to the average of about 4,745,000 (4.7 million tonnes) a year. Anomanyo (2004) also reported that about 1,800 tonnes of solid waste per day is generated in Accra alone but the UNEP (2004) was of the view that it is difficult to estimate accurately Ghana's waste generation. As to whether Zoomlion has the capacity should government of Ghana give the necessary support, he said Zoomlion in collaboration with other waste management companies should be able to deal with the waste situation in Ghana very effectively.

Responding to the question of what specific support Zoomlion Ghana requires of Government to be able to deal effectively with current waste in Ghana, the Group Head responsible for corporate communications indicated that;

*Government has to enforce bye-laws on sanitation to complement the daily cleaning by Zoomlion and other waste management companies currently operating in the country. Additionally, Government should create avenues for public education on sanitation; and that Government should collaborate with the private sector in pushing sanitation agenda forward, by working with companies already in the sector and not seek to create parallel services.*

As to what specific roles civil society should play in the management of waste in general in Ghana, respondent was of the view that other stakeholders, especially, households, should endeavour to take up advocacy in their corners to support public education programmes that aim to improve sanitation in the country. This, in her view, would help in educating the populace through behavioral/attitudinal change.

#### **4.3 Data Analysis and Discussions in Relation to the Study Objectives**

The study sought to investigate the main challenges that confront Zoomlion Ghana Limited as waste management company in Ghana. It was found that Zoomlion as a very important stakeholder in the waste management industry in Ghana faces countless challenges including lack of funds and support from government, lack of enforcement of bye laws, attitude of the populace and the persistent politicization of businesses in Ghana.

Over a decade, Zoomlion Ghana has been partnering government of Ghana to deal with sanitation related issues in the country. Going forward, the researcher sought to ascertain efforts being pursued by Zoomlion Ghana Limited to effectively manage solid waste in Ghana. In their response, Zoomlion promises to strengthen its working relations with Government and other stakeholders as well as improve its application of modern technology.

They have also revealed their preparation towards the competitive bidding that Government of Ghana announced recently (see [myjoyonline.com](http://myjoyonline.com), October 19, 2017).

Oftentimes, political interference in businesses tends to negatively affect the needed effective collaboration between businesses and government and its agencies. Zoomlion as a key partner in the waste management enterprise in Ghana was asked if there existed any effective collaboration between Zoomlion Ghana Limited and Government in the management of waste in the country. In their response, Zoomlion Ghana stated that they have been enjoying excellent working relations with government even though there were times their working relationships fluctuate but such fluctuations were meant to improve the system. If working relationship between zoomlion Ghana Limited and Government and its subsidiary agencies, then Ghana's current poor sanitation situation should begin to see some significant improvement even though others have doubted any such improvement in the foreseeable future. What is recommended by experts is that central government should lead any move to fight the challenges of poor sanitation as can be seen in the British-Columbia Guide (2008).

The issues about the existence of good laws in Africa and for that matter, Ghana, but which continuous to see politically lackadaisical implementation of such laws will render the fight against poor sanitation bad. One of the objectives of this research study is to establish if there are laws regulating the sector; and how effective these laws are. In response to a question to the respondent, Zoomlion admitted that enough laws exist today but for the lack of poor or lack of implementation as supported by (Aborkwah, 1998). Currently Ghana is among the countries which have one of the worse sanitation coverage. Indeed, Ghana is said to have a sanitation coverage of 18% or less as the country's sanitation is being exacerbated by its rising population and urbanization (WHO2005; UN-Habitat, 2005).

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Background

The investigation of this qualitative research, which sought to understand or explain, wanted to find out the major challenges Zoomlion Ghana Limited, was faced with in the management of solid waste in Ghana. This chapter therefore, presented the summary, conclusions and recommendations of the research findings. The study set out to achieve its specific objectives, which include the investigation of the main challenges that confronted Zoomlion Ghana Limited to ascertain efforts being made by Zoomlion Ghana Limited to effectively manage solid waste in Ghana, find out if there existed any effective collaboration between Zoomlion Ghana Limited and Government as key stakeholder, and to also establish if current laws regulating the sanitation sub-sector were effective to achieve the purpose for which they were promulgated.

Since the objective of this study was to understand other than measure or explain rather than predict, the exploratory design was adopted to undertake the study. Data were collected using a Likert Scale questionnaire, comprising optional choices to each of the fifteen (15) questions put in a statement and seven (7) open-ended questions. The strategy was to ensure self-checking for consistency of responses

#### 5.2 Summary of Findings

The main challenges that confront Zoomlion Ghana Limited as waste management company in Ghana as the study established include lack of funds and support from government to finance major projects, lack of enforcement of both substantive and bye-laws by central government and assemblies, growing lackadaisical attitude of citizenry and residents of communities towards safe sanitation practice and personal hygiene as well as the growing politicization of private businesses, which jeopardizes projects sustainability, especially,

government contracts (see Redlinger et al 2001; Amuzu & Leitmann 1994; and Devas & Korboe, 2000; Minghua et al, 2009; myjoyonline.com, October 19, 2017).

- As the second objective to ascertain efforts that Zoomlion Ghana Limited was making to effectively manage solid waste in Ghana, it was found that the Company has put in place measures to strengthen its working relationship with its key partners and stakeholders as well as introduce more modern or technologically advanced methods of waste management, including collection, disposal and processing.
- The study found that current collaboration and working relationship between Zoomlion Ghana Limited and Government as key a stakeholder is satisfactory as most major sanitation relate contracts of government are still being handled by the sanitation giant. But change of government is likely to affect working relationship between government and Zoomlion Ghana Limited. This potentially sour collaboration is generally caused by media reports and the ongoing court cases involvement some government officials and the incarceration of the Former GEEDA boss (myjoyonline.com, February 23, 2018).
- The final objective of the study was to find out from Zoomlion Ghana if there were enough laws regulating the sector; and how effective these laws were. It was clear from the Company that enough laws were in place to help promote waste management and general sanitation practices but enforcement of such laws have been poor on the part of Government and its enforcement agencies.

### **5.3 Conclusions**

Based on the findings of this research, the researcher makes the following conclusions:

- The sanitation situation in Ghana is worsening as the sector is experiencing low budgetary allocations and poor enforcement of very good laws that would have helped the sector to effectively manage its sanitation more efficiently and make real progress (see Aborkwah, 1998).
- Enormous business opportunities and employment creation abound in the sanitation sub-sector but huge capitalization requirement is an impediment to many would be investors in the sector.
- Political interference remains a threat to many businesses, especially, sanitation related, in Ghana and this is gradually increasing the cost of doing business in the country. Since government appears to be the major investor in the sanitation industry in Ghana, businesses that must survive in this sector must toe the line of the government of the day and this makes investment not sustainable and attractive (Zoomlion 2018; see myjoyonline.com, October 19, 2017).
- The current challenges as identified, if nothing is done, in terms of policy review, will continue to thwart efforts of waste management companies in the country.
- Government's willingness to sanitise the sanitation sub-sector and introduce more efficient managers of the country's waste management industry is a good sign that Ghana's deteriorating sanitation will significantly improve contrary to pessimisms from some experts (see again myjoyonline.com, October 19, 2017; Smith-Asante 2015).
- Zoomlion Ghana Limited is heavily depended on government of Ghana's projects and so the company is too much exposed to political interference and directives.

#### **5.4 Recommendations**

- Zoomlion Ghana Limited should endeavour to wean itself from political controls by widening its current portfolio base by taking up waste management contracts from the

private sector even though such contracts may be small as compared to government's contracts.

- In order that Ghana redeem its name from the list of worse performing sanitation countries, government of Ghana should go ahead to empower the private sector, by making the sector more attractive since government is the major client in the award of sanitation related contracts.
- If Ghana wish to perform well in the sanitation management sub-sector, then current laws regulating the sector should be effectively enforced to the letter and spirit of the law. Bye-laws of the various assemblies should be effectively enforced in order to check residents' behaviours of communities which are motivated by current toothless laws.
- More investment from Government needs to be made in the waste management sub-sector as current budgetary allocation is very insignificant. Most government's contracts executed by the waste management companies take a long time to be paid for.
- Government of Ghana may also consider reviewing Metropolitan, Municipal and District Assemblies (MMDAs) laws establishing them and their mandates. MMDAs should be made to finance their own sanitation budget financing through their internally generated funds (IGFs). In doing so, MMDAs should be given more powers to introduce new business models in order to generate more funds to finance their sanitation projects and programmes.

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**Appendix A.**



**GHANA INSTITUTE OF JOURNALISM (GIJ)  
ACCRA – GHANA**

**LIKERT SCALE QUESTIONNAIRE**

**Dear Respondent,**

I am a final year Master’s (MA) student (**Development Communications Option**) of the Ghana Institute of Journalism (GIJ).

As part of the University’s academic policy requirements, I am conducting a research on the topic: **Challenges Faced by Zoomlion Ghana Limited in the Management of Solid Waste in Ghana.** I am therefore using **Zoomlion Ghana Limited** as a Case Study:

I would be grateful if you could provide your **candid** response to the following questionnaire by reading a statement and ticking (X) in the box which best applies in your view. Also provided are few open-ended questions for your response. You are reminded that, this is purely an academic exercise and therefore your Responses to this exercise will be treated confidentially.

Thank you.

**A. RESPONDENT’S BIO-DATA**

- i. Age Range: 21 – 30  31 – 40yrs  41 – 50yrs  51yrs & above
  
- ii. Gender: Male  Female
  
- iii. Highest Qualification: Diploma  Degree  Masters   
Others: Specify,.....
  
- V. Department .....Communication.....
  
- vii. Position.....Group Head, Communication.....

## B. Likert Scale Questionnaire (Mark X)

N#	Statement	Respondent's Response				
		Strongly Agree	Agree	Neutral	Strongly Disagree	Strongly Disagree
1	Ghana is one of the filthiest countries in West Africa	5	4	3	2	1
2	Solid waste management is the major sanitation issue facing Ghana	5	4	3	2	1
3	To deal effectively with solid waste in Ghana requires huge financial investment by Government	5	4	3	2	1
4	Current investment by Government is inadequate to deal with sanitation	5	4	3	2	1
5	There is a need for effective collaboration between Government agencies and key waste management institutions in Ghana	5	4	3	2	1
6	Two key challenges facing the solid waste management subsector is poor budgetary allocation and lack of strong political commitment	5	4	3	2	1
7	There are enough laws regulating the solid waste management sector except poor enforcement by regulatory authorities.	5	4	3	2	1
8	Existing laws dealing with waste management needs to be reviewed.	5	4	3	2	1
9	Zoomlion has the capacity to deal with solid waste management in Ghana, if having the backing of Government	5	4	3	2	1
10	Zoomlion Ghana is the only Company in Ghana that has the technical capacity to effectively manage solid waste in Ghana	5	4	3	2	1
11	Civil society's effort alone cannot effectively deal with solid waste issues in Ghana if Government's commitment is not strong	5	4	3	2	1
12	There are great potential in turning Ghana's solid waste into viable business model	5	4	3	2	1

13	Zoomlion Ghana can single handedly recycle all solid waste generated in Ghana, if given political will and support	5	4	3	2	1
14	More waste management companies are required in Ghana to deal effectively with waste generated in Ghana.	5	4	3	2	1
15	General sanitation in Ghana is bad and the situation will be worst in the coming years if current Government policies are not reviewed.	5	4	3	2	1

### C. INTERVIEW GUIDE

1. What are some of the key challenges waste management companies face in Ghana?

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2. In your opinion, do you think Government of Ghana’s commitment in dealing with waste is encouraging enough to solve the country’s poor sanitation situation in the country?

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3. In your opinion, what do you think should be done in order that Ghana is rid off current bad name as one of the filthiest countries in Africa?

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4. What is Ghana's waste generation (in tones) as per your estimate and do you think Zoomlion has the technical expertise and capacity to deal effectively with it if given all political support?

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5. Do you think current laws are enough to deal with sanitation related issues in Ghana, especially, solid waste management?

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6. What specific support does Zoomlion Ghana require of Government to be able to deal effectively with current waste in Ghana?

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7. What specific roles should civil society play in the management of waste in general in Ghana?

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