UNIVERSITY OF CAPE COAST

IMPROVING REFUSE COLLECTION IN DISTRICT ASSEMBLIES THROUGH PRIVATE CONTRACTS: A CASE OF AHAFO ANO SOUTH DISTRICT ASSEMBLY

DORCAS BAIDOO

2018

UNIVERSITY OF CAPE COAST

IMPROVING REFUSE COLLECTION IN DISTRICT ASSEMBLIES THROUGH PRIVATE CONTRACTS: A CASE OF AHAFO ANO SOUTH DISTRICT ASSEMBLY

BY

DORCAS BAIDOO

Dissertation submitted to the Department of Management of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfillment of the requirements for the award of Masters of Business Administration in General Management

JANUARY 2019

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:..... Date:.....

Candidate's Name: Dorcas Baidoo

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature:..... Date:.....

Supervisor's Name: Zangina Isshaq (PHD)

ABSTRACT

The study seeks to find out how refuse management in the AASDA can improve through outsourcing to private companies. The researcher will reveal the current solid waste management practices of households in the study area so that the inappropriate practices adopted by the households could be corrected and mitigation measures would be undertaken in order to avoid a possible outbreak of disease and other related health concerns. This study, by its nature was a descriptive research technique. Both quantitative and qualitative data were used to find out how waste management in the AASDA can improve through outsourcing to private companies using both structured and semi-structured interviews, questionnaires as well as informal discussions. The study concludes that, the district is already involved in the outsourcing of waste management to a private company. It went on to reveal that refuse collection and waste management is well handled when outsourced to a private agency than being run by the district assembly or the government. Outsourcing of waste management could be sustained when the district Assembly perform their financial obligations and when the private agents do an efficient and effective work in waste management. Although other options as alternatives to outsourcing could be considered in the long run, outsourcing is the best option for the time being. From the study it is recommended that the district assembly in charge of waste management should continually have an educating system for people in the districts about the importance and necessity of effective waste management.

ACKNOWLEDGMENTS

My greatest thanks and appreciation goes to the almighty God for his guidance throughout my education and for always being within reach when I needed him most. I wish to extend special thanks to my supervisor and my parents whose counsel, guidance and encouragement were indispensable from the onset of this project to its conclusion.

DEDICATION

To God and my family especially my brother, Christopher Baidoo.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AASDA	Ahafo Ano South District Assembly
BPO	Business Process Outsourcing
ISWM	Integrated Sustainable Waste Management
IT	Information Technology
KPO	Knowledge Process Outsourcing
LPO	Legal Process Outsourcing
MDGs	Millennium Development Goals
MSW	Municipal solid waste
PHC	Population and Housing Census
PPP	Public-Private Partnerships
UCC	University of Cape Coast
ZL	Zoom Lion

CHAPTER ONE

INTRODUCTION

This is the introductory chapter of the study. It includes the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope of the study, limitations of the study and organization of the study.

Background to the Study

Increasing quantity and volume of solid wastes are generated at a faster pace globally (Yasmin & Rahman, 2017). A waste management review by the World Bank (2014) reveals that the global solid waste generation levels are approximately 1.3 billion tonnes per year, and are expected to increase to approximately 2.2 billion tonnes per year by 2025. This represents a significant increase in per capita waste generation rates, from 1.2 to 1.42 kg per person per day in the next fifteen years. According to same report, solid waste generation in sub-Saharan Africa is approximately 62 million tonnes per year (World Bank, 2014). Per capita waste generation is generally low in this region, but spans a wide range, from 0.09 to 3.0 kg per person per day, with an average of 0.65 kg/capita/day (World Bank, 2014; Yasmin & Rahman, 2017).

According to Koyachew (2016), the current solid waste management do not match its corresponding waste generation. Amoah and Kosoe (2014) reiterated that a daunting challenge of governments is solid waste management. Shafiul and Mansoor (2003) defined waste management as the collection,

transport, processing or disposal, managing and monitoring of waste materials. Waste management does not only involve rational decision making about whether to bury, burn, recycle, or produce less waste, but it also considers impacts to health, society, and the environment (Dryczek, 2001). The challenge is not about the quantity and volume of waste generated but also its composition and having the ability to design and accomplish its management in an efficient and sustainable manner (Dahal & Niemelä, 2017).

Poor waste management poses health and environmental hazards and has detrimental effect on life and property (Basel Convention, 2011; Koyachew, 2016). Though developed nations generate the greatest proportion of solid waste, they have used and managed their waste to an acceptable level (Eshun, 2002; Sarker, Sarker Islam &Sharmin, 2012). On the contrary, developing nations are highly faced with the problem of poor waste management (Amoah &Kosoe, 2014; Koyachew, 2016). To solve the problem of poor waste management in both developed and developing countries, Shan (1989) recommended for privatization and award of contracts. Thus, the involvement of external agencies or private companies in carrying out waste management services is not farfetched.

In response to states or developing countries' incapacity and lack of resources to effectively deliver public services alone, Public-Private Partnerships (PPPs) have been implemented by both local and central governments in Ghana in the provision of otherwise traditional public services including sanitation in recent years (Asare & Frimpong, 2013). Accordingly, the government has partnered private vendors to provide sanitation services. One such arrangement is the

partnership between the government and Zoom Lion (ZL) since January 2006 to manage waste.

Statement of the Problem

Information gathered from the Ahafo Ano South District Assembly (AASDA) indicated that, though the volume of waste generated annually is unknown, about 2000 to 3000 tonnes of solid waste from the district is hauled to the dumpsite at Kunsu every fortnight (AASDA Annual Progress Report, 2017). Besides, the AASDA over the years has invested much effort in managing the solid waste. Waste containers are sited at strategic places to collect all the waste that is generated in the district. In addition, Zoom Lion Company workers have worked tremendously to keep the district clean by de-silting choked gutters, sweeping the streets and also embarking on household collection of wastes (AASDA, 2017). Despite all these efforts, the collection and disposal of solid waste is a big problem.

However, according to 2010 Population and Housing Census (PHC), 43.3% of wastes were thrown onto the streets by households in the district (Ghana Statistical Service, 2014). This improper disposal is causing an eyesore and more importantly creating breeding grounds for disease vectors and pathogens. The result is the general unsanitary conditions created within the district with the subsequent breeding of mosquitoes and other flies which cause diarrhoea diseases. Statistics from the Ahafo Ano South District Health Directorate in 2017 indicate vividly the high rate of diarrhoea diseases for the past five year period. Furthermore, the poor waste management could lead to extra cost spent in treating

preventable diseases. Also illness may result in loss of human resource and work-time hours. Statistics from the Ahafo Ano South District Health Directorate shows high rate of mortality from the district health directorate from diarrhoea diseases.

In their quest to improve the sanitation issue, the Ahafo Ano South District Assembly outsourced their waste collection and disposal to Zoom Lion in 2010. This had led to a marked improvement in sanitation practices and its attendant reduction in diarrhoea diseases. Though the concept is a laudable idea, the Assembly in considering that the cost of pursuing this venture could be high and far beyond its financial capabilities, need to explore any alternative in a more pragmatic and cost-effective manner.

However, from rigorous search of extant literature and report in the District, to the best of the researcher's knowledge, there is no study available in the study area that had assessed how waste management in the AASDA can improve through outsourcing to private companies. In view of this, the study seeks to find out how waste management in the AASDA can improve through outsourcing to private companies. This is one of the surest ways of coming up with proposed strategies to assure all stakeholders of a better approach or technique of managing revenue and waste in the district.

Objectives of the Study

The main objective of the study was to find out how refuse management in the AASDA can improve through outsourcing to private companies.

The specific objectives of the study are:

1. To identify the existing refuse management practices in the Ahafo Ano South District.
2. To assess the willingness of households in the Ahafo Ano South District to pay for refuse collection.
3. To establish the extent to which the AASDA is already involved in outsourcing their mandate of maintaining good sanitation in the district.
4. To determine the sustainability of outsourcing as an option for improving refuse collection in the district.
5. To examine other options of refuse management to outsourcing as an alternative.

Research Questions

1. What are the existing refuse management practices in the Ahafo Ano South District?
2. Are households in the Ahafo Ano South District willing to pay for refuse collection?
3. To what extent is the AASDA already involved in outsourcing their refuse collection to private companies?
4. How sustainable is outsourcing as an option for improving refuse collection in the district?
5. What other alternatives of refuse management aside outsourcing are available?

Significance of the Study

The researcher hopes to reveal the current solid waste management practices of households in the study area so that the inappropriate practices adopted by the households could be corrected and mitigation measures would be undertaken in order to avoid a possible outbreak of disease and other related health concerns. It would reveal the willingness of households to pay for solid waste collection which would help the District Assembly to draw policies and implementation strategies regarding the financing and management of waste.

Furthermore, the work seeks to provide an intellectual framework of outsourcing as a business practice of acceptance to handle refuse collection and good sanitation maintenance in the AASDA and other cities of the country with the assemblies as the focal point of consideration. This work will afford the reader to have an insight into the extensive literature on the key areas of consideration and scope of the research. In effect, the District Assembly and its sanitation management department could ensure greater improvement if the adoption of outsourcing as a strategic tool is given due consideration in this direction.

Incidentally, the District Assemblies have been also noted for poor record keeping and lack of a repository of research books and materials useful for intellectual considerations and references. The study when completed would provide a comprehensive analysis of findings and draw objective conclusions so that future studies could be conducted based on the results and findings from this research or used as a reference material for future decisions or policy initiation ventures. It will also help other academicians to gain easy access to information in

this field directly from the AASDA since a copy of the work will be reserved at the Assembly Library.

Scope of the Study

The study was conducted having in mind that resources and time were limited. The scope of the study covers the Ahafo Ano South District of the Ashanti Region, outsourcing as a business concept, refuse collection improvement and effective waste management. The district in question was chosen because it was easily accessible to the researcher since she lives and work there. The topic was carefully selected and trimmed to narrow the scope of the research in accordance to the requirements and demands of the programme.

Limitations of Study

Limitations that was faced by the study lies in two folds. First is access to reliable and accurate information as most government organizations are known to have poor record keeping skills. Similarly, others also consider such information as sensitive and therefore was reluctant in releasing such information. Time is also another contributing factor that the researcher faced, in making time off studies on campus to collect both primary and secondary data for the study. These limitations created some problems for the smooth conduct of the study. It was difficult getting in touch with people especially those at decision making levels for interviews. Notwithstanding the above limitations, the study was conducted. The limitation was not in any way a setback to the overall success of the study.

Organization of the Study

This study is organized into five chapters. The Introduction, which is chapter one, consist of the background to the study, statement of the problem, the main and specific objectives of the study, research questions, significance of the study, scope of the study, limitations of the study and how the study was organized. Chapter two discussed relevant literature related to the study while research methodology is discussed in chapter three. The fourth chapter presented the data and analysis based on the objectives and research questions. Chapter five presented the summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter focuses on literature on waste management mostly solid. It first discusses some basic concepts related to waste management, it will draw from history the drivers in solid waste management with particular interest on climate change as a driver. It also dwells on Integrated Solid Waste Management (ISWM) a modern way of managing waste around cities in the world and how sustainable waste management can be possible. The historical antecedent of solid waste management in Ghana will be mentioned. The concept of privatization, private sector involvement in managing urban solid waste, the origin of private sector and its relevance on solid waste management as well as the challenges confronting the efficient and effective operations of the private sector was reviewed. Outsourcing is discussed, mentioning the types, its advantages and disadvantages and lastly whether private or outsourced companies were efficient in the provision of good waste management.

Municipal Solid Waste and Waste Management

Cointreau (2006) defined municipal solid waste (MSW) as a non-useful solid substance from households. It is termed municipal solid waste because of its similar nature or composition to waste from households. Despite this definition, municipal solid waste is generated from different sectors of a society such as households, educational, health and commercial institutions, public places either directly or indirectly by the municipal or local authorities (Williams, 2005).MSW

is often generated in urban areas and has contents that are organic and inorganic nature; the former being often found more in developing countries than the latter. The reverse is mostly the case in the developed part of the world and this is regarded as a significantly distinctive feature from the waste generated in their developing counterpart (Oteng- Ababio, 2011; UNEP, 2005a).

Waste and waste management waste can be generally described as any item or material that is generated and disposed of or intended to be disposed of by a person that has custody of it. However, in addition to considerations of legal nature and geographical location of generation, different definitions of waste exist based on conditions under which they occur (Williams, 2005). The Basel Convention (2010) defined solid waste management as the collection, transport and disposal of solid waste or other wastes, including after-care of disposal sites. According to Igbinomwanhia (2011), waste management is a process whereby strategic combination of methods are employed to efficiently regulate waste from source of generation up to the final disposal point. The essence of waste management is to maintain a perpetually safe and healthy environment at minimal cost.

Additionally, Rouse (2008) indicated that the basic concept of waste management involves the collection, storage, transportation, processing, treatment, recycling, and final disposal of waste. He also noted that, the management system should be simple, affordable, sustainable, economical efficient, environmentally sound and socially acceptable and providing the service for both the poor and wealthy households. However, waste management has been

identified as a challenge in many countries all over the world, much more so in developing countries (Narayana, 2009; United Nations Environment Programme [UNEP], 2005a).

In a descriptive study conducted in Ghana by Puopiel (2010) to examine the factors of effective solid waste management in the Tamale Metropolis using 156 randomly selected samples, he found that that inadequate skip supply for storing wastes, lack of routine collection of wastes, poor methods of waste management, and inadequate resources for waste management institutions to effectively collect the waste generated were the main factors that affected the effectiveness of solid waste management in the area. In other words, he found more of institutional factors. To effectively tackle the problems enumerated, some measures such as provision of adequate skips and dustbins, regular collection of waste, use of integrated solid waste management model, proper management of landfill, and adequate resources of waste management institutions were recommended by the researcher.

Approaches to Municipal Solid Waste Management

There are alternative systems how the solid wastes, which are generated at household level, can be disposed without scarifying the quality of the environment and the safety of human health. Under the Conventional Approach to Solid Waste Management, wastes generated in the home separate at sources based on their nature and stored until a small amount is accumulated. In this approach, the generator of households is responsible to transport these stored wastes to the nearest dustbin or container, which is provided by the assembly (UNEP, 2005a).

Then, the municipality is responsible for the remaining activity of waste management, which transferring the collected wastes from the containers to the final disposal sites. Thus, the direct involvement of private waste collectors, as far as this approach is concerned, is rare (World Bank, 2000; Rahman *et al.,* 2005).

World Bank (2000) also stated that, problems in this system are often observed due to the failure of involved stakeholders, which are explain as follows: most of the time, the city administration fail to provide adequate number of containers or even the provided dustbin may not be positioned in convenient locations. Due to such reasons, the households may motivate to dispose their wastes on road, in sewerage, inside the villages or other illegal places. Moreover, poor motivation for appropriate disposal, lack of awareness or social factors are the other forces which make the environment unacceptable for certain members of households, who are interested to transport their wastes to the containers. Rahman *et al.* (2005) also noted that in conventional system of collection and disposal of wastes, the municipality truck visits the transfer station point at a regular interval and collect and hauls the stored wastes to the final disposal place.

Another approach is the community/participation based approach, which explains the way stakeholders are involved in discharging their responsibility (Narayana, 2009). As stated above, in conventional approach, there are various reasons which lead the approach to fail or the households to dispose their wastes inappropriately. Similarly, this approach also has its own problems that can create difficulty while managing the solid wastes. However, in the community based approach, unlike conventional based approach, involves the primary collectors; it

may be paid door to door collectors, community based organization (CBOs) or NGOs (Tilaye & Dijk, 2013). Due to this reason, in this system, at least the difficulties which emanate from the institution financial point of view can be minimized. The households are responsible to store their waste in plastic bags or other available materials by sorting in terms of their nature and hand over to the door to door or primary collectors.

According to Tsiboe and Marbel (2004), there are basically three methods of municipal waste collection in Ghana namely: 1) Waste Management Department (WMD) curbside collection by trucks directly outside each house; 2) WMD collected from communal containers to which people must bring their own waste; and 3) door-to-door collection services in middle-income areas. Tsiboe and Marbel (2004) indicated that in Accra, the WMD curbside collection method was provided weekly in the high-income residential areas like Roman Ridge, Airport and Cantonment by compactor trucks.

LEARNING FROM HISTORY

The Role of Development Drivers in Solid Waste Modernization

Scholars believe that there are the main driving forces or drivers that pushes for the development and modernization of waste management in history. These drivers are related to improvement of public health, protection of the environment and the resource value of the waste.(Wilson, 2007)

■ **Driver 1: Public Health**

Starting in the middle of the 19th century, as cholera and other infectious diseases reached the cities of Europe and North America, legislation was gradually introduced to address the problem of poor sanitation conditions. This legislation both established strong municipal authorities and charged them with increasing responsibility for removing solid waste and keeping streets clean and litter free. (Wilson, 2007, UN-HABITAT, 2010)

■ **Driver 2: Environment**

The focus of solid waste management remained on waste collection, getting waste out of the city, for a century – right up to the emergence of the environmental movement during the 1960s and 1970s. New laws were introduced, first, on water pollution, and from the 1970s on solid waste management, prompted by crises of contamination of water, air and land and their impacts upon the health of those living close to abandoned hazardous waste dumps. The initial response focused on phasing out uncontrolled disposal, both on land and by burning. Subsequent legislation gradually tightened environmental standards – for example, to minimize the formation of contaminated water ('leachate') and to prevent its release into groundwater and surface water from 'sanitary landfills'; and to reduce still further urban air pollution related to the incineration of solid waste in cities. (Wilson, 2007, UN-HABITAT, 2010).

■ Driver 3: The Resource Value of the Waste

In pre-industrial times, resources were relatively scarce, so household goods were repaired and reused, (Strasser, 1999). Food and garden waste entered the agricultural supply chain as animal feed or fertilizer. As cities grew from the 19th century with industrialization, large numbers of people found an economic niche as 'rag-pickers' or 'street buyers', collecting and using or selling materials recovered from waste; in many cases, this activity was done by peddlers who collected rags and bones from the people to whom they sold. (Strasser, 1999) This activity continues today virtually unchanged in many developing and transitional country cities, where informal-sector activities in solid waste management and recycling secure the livelihood of millions of people.

■ Emerging driver 4: Climate Change

Since the early 1990s, climate change has directed attention in the West on the need to keep biodegradable municipal waste, such as kitchen and garden wastes and paper, out of landfills in order to reduce emissions of methane (a powerful greenhouse gas). Methane forms when organic materials decompose in the absence of air, a process called anaerobic decomposition. (Brooksbank, 2018) This provides a new reason for city officials to focus on diverting biodegradable municipal waste from landfills. Partly as a result, recycling and organic diversion rates, which had declined to single figure percentages as municipal authorities focused on waste collection, began to rise in cities modernizing their waste systems, in some cases dramatically. Policy measures – including laws with targets for diversion from landfill, extended producer responsibility, landfill bans

for recyclable waste materials, and recycling and composting goals – pushed the recovery rates up to 50 per cent and beyond. One could argue that history has come 'full circle' now that waste management is beginning to evolve into a mixed system for sustainable resource management. (UN-HABITAT, 2010).

Modernization of Solid Waste Management Systems in Developed Countries

For most developed countries, the most recent wave of what is termed here as 'modernization' of solid waste management began around the 1970s, (UN-HABITAT, 2010) when there was a crisis of contamination from waste, either in the city, at the disposal site, or in groundwater or surface water. More important than the crisis itself, the political and media discussion around it has usually provided the immediate stimulus for change.

Public opposition to new sites, (Wolf, 1980) based at least in part on bad experiences with previous uncontrolled sites (not in my backyard, or NIMBY) is a compounding factor, so that the regional landfills tend to be relatively distant from the main population centres. The geographical, logistical and institutional regionalization associated with upgrading disposal sets in motion a series of rapid changes in how the waste system functions and how much it costs. A study by UN in 2010 on waste management in the world's cities showed that the combination of higher technology, more management and longer distance to the new landfill creates a rapid upward spiral in costs for cities and their contractors:

• The newly introduced landfill gate fees, based on weighing the waste, are much higher than the costs of local (largely uncontrolled) disposal.

• Collection and transport costs are much higher, as the longer distances imply increased time on the road and increased fuel consumption, and possibly the need for local transfer stations.

• There are also increased (and often unbudgeted) administration costs involved in organizing 3, 15 or even 50 separate cities and towns together to agree on where the landfill should be, which community should host it, and how the laws, regulations and administration should work.

• Political NIMBY opposition to siting introduces legal battles that cost the local authority time and money to answer challenges in court – and in the political arena.

In many developed countries, this upward spiral of costs triggered a search for less expensive ways to be modern and environmentally responsible. Some part of the strong interest in recycling and composting came about because, when compared to regional disposal, these activities began to appear to be less expensive, as well as environmentally preferable. During the period of active modernization in the US, for example, recycling goals in many states increased from 15 per cent of total waste to more than 50 per cent in a relatively short period of time at the end of the 1980s. (Scheinberg, 2003)

According to JPMORGAN Chase and Co., in their brief history of household recycling mentioned that modern municipal recycling, as it has been reintroduced in Europe and North America since the 1970s, depends on households segregating materials at the source. This means that waste system

users, the households, need to change their habitual behaviour and to separate their waste into several categories, which they store separately, rather than mixing it all together in one basket, bag or bin. Collecting several source separated waste streams without greatly increasing collection costs is a similar challenge to the waste collection providers and operators: they also have to change the way in which they think and behave. This has led, in some instances, to a reduction in collection frequency for the residual waste.

Moving Towards Sustainable Solutions

Solid Waste and the Millennium Development Goals (MDGs)

The Millennium Development Goals (MDGs) were ratified by 189 heads of state at the United Nations Millennium Summit in September 2000, with the overall objective of halving world poverty by 2015. (WHO, 2003) Improving solid waste management systems will contribute to achieving many of them, in spite of the fact that solid waste is never explicitly mentioned in the MDGs. There are several places where the MDGs and the modernization of waste management come together.

• MDGs 1 and 7, on livelihoods and poverty, on the one hand, and on environment, on the other, point to the urgency of inclusive policies in waste management so that the role of the informal waste sector in cleaning up cities and recovering resources is recognized, while working conditions and livelihoods are improved. Recent work suggests that the informal sector both contributes to a city's recycling rates and substantially reduces its costs for managing solid waste. (GTZ/CWG, 2007)

• Improving the coverage of waste collection services contributes to the health-related MDGs 4, 5 and 6, and will reduce both child diseases and mortality.

• MDG 8, on global partnerships, is a blueprint for cities to work with private formal and informal actors, on the one hand, and to join with communities in participatory planning and problem solving, on the other. Partnerships can improve governance, bring about financial sustainability and support proactive policy formulation. (WHO, 2003) Modernization of solid waste management in the West started when recycling rates had declined to a very low level, and has included a drive to rebuild recycling through the municipal waste system. Most developing and transitional country cities still retain their informal recycling systems, which provide a source of livelihood to vast numbers of the urban poor. Building on this existing system makes good sense.

The Integrated Sustainable Waste Management (ISWM) Framework

When the current modernization process started in developed countries during the 1970s, solid waste management was seen largely as a technical problem with engineering solutions. That changed during the 1980s and 1990s when it became clear that municipalities could not successfully collect and remove waste without active cooperation from the service users. Cities also learned that technologies depend on institutional, governance and policy frameworks, which are highly varied and complex, and directly related to local conditions. There is now broad international consensus for what has come to be known as ISWM: integrated sustainable (solid) waste management. ISWM identifies three important dimensions that all need to be addressed when

developing or changing a solid waste management system namely, the stakeholders, the elements and the sustainability aspects. (Anschütz*et al*, 2004) ISWM is designed to improve the performance of solid waste system and to support sound decision-making. It does this by framing the solid waste process, and balancing short-term crisis management and long-term vision.

It helps municipal officials and other stakeholders to understand how the different parts of the system relate to each other. Examples from countries like Denmark or Japan – which some countries regard as world icons of good waste management practice – suggest that a sustainable, affordable waste management system consists of a stable mixture of technologies and institutions, which function flexibly under a clear policy umbrella. (UN HABITAT, 2010) Such systems mimic an ecosystem, which is robust and resilient when there is a mix of unique niches and competition for resources. If one species falls out, others move in to take its place.

In low- and middle-income countries, there is often a variety of formal and informal, public and private systems already operating, so the basis for a stable mixed system is already in place. What most low and middle-income cities miss is organization specifically, a clear and functioning institutional framework, a sustainable financial system, and a clear process for pushing the modernization agenda and improving the system's performance. As long as there is no umbrella framework, the mixture remains a cluster of separate parts that do not function well together or at all. (UN HABITAT, 2010)

Sustainability in Solid Waste Management is Possible

An important concept of waste management is sustainable waste management which is an integral part of sustainable development (WCED, 1987). Thus, in keeping with the objectives of sustainable development, sustainable waste management can be regarded as an approach to waste management that, in addition to protecting human health and the environment, ensures that the scarce resources of the earth are conserved for both present and future generations of humanity. It therefore becomes important to minimize natural resource extraction and consumption by recycling waste materials, and conduct waste management efficiently to curtail the environmental impacts of waste disposal and protect ecosystem services for both current and future generations (Millennium Assessment Report, 2005). In line with the waste hierarchy, the best way to achieve sustainable waste management is to reduce the amounts of waste we produce (Girling, 2005).

Where waste is unavoidable a sustainable approach is to encourage re-use and recycling of products to prevent them from getting into the waste stream. Finally, where waste prevention/reduction, re-use and recycling are economically impossible, waste is processed to recover their intrinsic values such as energy. Sustainable waste management also seeks to increase co-ordination between the producers of goods, retailers, manufacturers, the public, local authorities and all concerned with the management of waste and reusable materials and equipment (London Waste Action, 2007).

WASTE MANAGEMENT WITH GHANA IN PERSPECTIVE

Some Historical Milestones

Historically, the impression that the responsibility of proper waste management services (considered as a public good) is the duty of a public institution (i.e. MMDAs) has its antecedents in how local governance of our towns and cities has evolved (Oteng Ababio, 2011). While the Municipal Ordinance of 1859 established municipalities in the coastal towns of the Gold Coast, the 'new' Ordinance established in 1943 elected town councils beyond the coastal towns to include Accra, Kumasi, Sekondi-Takoradi and Cape Coast. The 'new' Municipal Ordinance of 1943 established municipalities as Public Health Boards with the establishment of the first one in Cape Coast, followed by Accra and then Kumasi. The mandates of the Public Health Boards were mainly to ensure hygienic living conditions within settlements. The main operational tool was enforcement management with diligent premises inspections and sanctions (Acquah, 1958).

There was however, a paradigm shifts after independence with the passage of the Local Government Act 54 of 1961. The Act empowered the State to provide all public services for the benefit of all citizens (World Bank, 1999). These included education, health, water, environmental sanitation, energy, telecommunication, roads, transport, railways, markets, lorry parks, public toilets and bathhouses, stadia and other recreational infrastructure managed by one entity – the Public Works Department. Though the Act expanded the powers of the central government, the local government bodies were still responsible for the

provision of municipal services and amenities in their localities without regard to whether or not they had the personnel with the requisite skills and professional expertise to deliver (Oteng Ababio, 2011). The reasons were that the provision of those basic services had elements of externality, excludability and non-rivalry problems (public good characteristics) and thus should be the responsibility of the state to ensure the welfare of its citizens (Awortwi, 2003).

The role of the central government in the provision of basic services including solid waste management continued till the 1970s when the general economic downturn began. From the mid- seventies, Ghana's economic fortunes started declining; the economy started stagnating, general tax revenue dwindled and therefore, the policy of tax-based sanitation services could not be supported. The economic downturn led to general decline in agricultural productivity as well as exports. There were also increased inflationary pressures and a gradual buildup of unemployment. With the economy literally on the verge of bankruptcy, environmental sanitation services collapsed with the local government agencies suffering from lack of central-government transfer of funds and provision of machinery and equipment (ISSER, 2012).

The period of general economic decline also coincided with a period of rapid urbanization, with the rate of urbanization increasing from 23.1 percent in the 1960s to 32.0 percent by 1984 (Owusu and Oteng-Ababio, 2014), a situation which was partly blamed on the large scale deportation of Ghanaian migrants from Nigeria and the rate of natural increase in the population. The high rate of urbanization had two implications; there was a massive increase in solid waste

generation and free land for waste disposal became less available. As a result, existing waste disposal sites (including communal containers at sanitary sites) became engulfed with refuse. Incinerators (masonry brick-furnaces for burning refuse) which were introduced in 1929 (see Oteng-Ababio, 2013) also broke down in the 1970s due to the increasing quantity of waste leading to crude dumping into quarry pits. By the 1980s, the state of environmental sanitation services had dipped to a point that it needed radical reforms to put it back on track.

The first major radical reforms towards improved sanitation service in Ghana started with the implementation of the Accra Waste Management Project from 1985 to 1994 with support from the German Technical Cooperation, GTZ. This project saw the re-tooling of the waste management department with the introduction of compaction trucks to replace side-loading trucks (side-loader) that was being used by the environmental health units of the various municipalities. As part of the GTZ support, the first Waste Management Department (WMD) was established in Accra. This era also saw the coming into being of the informal sector in the form of micro and small-scale enterprises whose main area of concentration was the inaccessible communities that were difficult to reach by the waste trucks (MLGRD, 2001). These informal waste collectors mainly relied on carts drawn by horses, donkeys, bicycles, or tri-motors (Katusiimeh, Oteng-Ababio, 2013).

In the early 1990s, there was a policy shift towards private sector-led involvement in solid waste management as part of the extension of the market mechanisms of the New Public Management (NPM) and decentralization of local

service delivery to the local governments (Awortwi, 2004). As observed by Oduro-Kwarteng and van Dijk (2013), the private sector involvement in public service provision was intentioned to tackle market and government failures. With this arrangement, the public sector (government) plays a leading role of purchaser (buyer) on behalf of citizens through subsidies and/or user charges, while the private sector plays the role as provider (seller) of public services, who is being regulated by the public sector to correct the abuse and exploitation that may be associated with the public good nature of solid waste service.

In this case, the government plays dual roles-as a purchaser and as a regulator. It is believed that private sector involvement is a way to maintain market discipline and to bring management and technical expertise and private finance into public service to achieve cost efficiency and better service provision (improve service quality) (Cointreau, 1994; van Dijk, 2010). At present, the environmental sanitation policy, which was revised in 2010 is the major document guiding solid waste management in Ghana. The policy is focused on seven key areas: Capacity development; Information, Education and Communication; Legislation and regulation; Levels of Service; Monitoring and Evaluation; Policy on Financing and Cost Recovery. The Policy outlines the following four distinct functions to be carried out by the Assemblies with regard to environmental sanitation. These functions are the provision of waste management services, public health management services, environmental monitoring services as well as planning, monitoring and public relations. The policy tends to reflect the current

thinking of solid waste management and provide a general assessment of the prevailing situation and strategies in the country.

Concept of Privatization of Waste Disposal

Origin of Private Sector

Privatization is a policy that has been implemented all over the world in recent decades. In regions such as Europe and Latin America privatization has been characterized primarily by the sale to the private sector of government-owned firms and assets. In other regions where public ownership of firms was not as common, such as North America, privatization has mainly taken the form of contracting out services previously delivered by the government to the private sector.

Most Economics and Public Policy scholars consider the privatizations in Chile (1970s- early 1980s) and the United Kingdom (1980s-early 1990s) as the first privatization policies in modern history. Others argue that the first privatization operation was the denationalization of steel in the UK in 1953, and a few scholars identify the partial sales of state-owned enterprises in Germany under Adenauer's government (late 1950s-early 1960s) as the first large-scale privatization program. However, recently published works document and analyze a large-scale privatization policy in 1930s Germany, under Hitler's government. Indeed, between 1934 and 1937, the Nazi regime privatized almost all the firms that had been taken over by the Weimar government in the early 1930s during the Great Depression (Wiafe, 2014).

The formal private sector is here understood to refer to private sector corporations, institutions, firms and individuals, operating registered and/or incorporated businesses with official business licenses, an organized labour force governed by labour laws, some degree of capital investment, and generally modern technology (Furedy, 1991). In general, the defining characteristic of the formal private sector is that its main objective is to generate a profit on investments.

Why Private Sector Involvement in Municipal Solid Waste Management

Private agencies engaged in waste management have higher operating efficiency because, firstly they are free from bureaucratic hurdles and the upkeep of their equipment is excellent. Good condition of vehicles and equipment ensure not only trouble-free operation but also result in higher output and profitability. According to Boorsman (1994), private sector is endowed with qualities such as political independence, economic rationality, efficiency, dynamism and innovation; qualities which make it measure up favourably to public sector enterprise. The motives of privatization have primarily been that the private sector works more efficiently than the public sector; it is hence concluded that economic benefits will arise from privatizing public sectors where there is no natural monopoly (Prasad, 1998).

Another important aspect of the involvement of the private sector in Low and Middle Income Countries (LMIC) is the debt issue. Most LMIC public budgets depend on external financial aid. Many international credit organizations impose the concept of privatization to obtain less demand for loans. The World

Bank Group is the leading institution in the preparation and support of privatization programmes, providing advice and loans to cover costs associated with privatization, and also providing investment loans to cover costs associated with privatization as well as ones to help restructure private enterprises. Privatization is consequently assimilated into the "corpus conditionality" of the donor community (Grimshaw and Willmott, 2002). Taking into consideration that 90% of municipal investments in LMIC today come from external aid (World Bank, 1997), the issue of privatization is becoming inevitable for LMIC. In reality, the donor community imposes the principles of privatization. It is a "conditio sine qua non" for the continuation of external aid flows. Simply put, efficient SWM and privatization are linked to LMIC.

Private Sector Involvement in Solid Waste Market

The delivery of public services has traditionally been carried out by the public sector. The increasing financial burden on the local governments and the inefficiency of the public sector (government failure) in developing countries necessitate the use of markets for public service delivery. However, markets where there is perfect competition with willing buyers and sellers do not work for public services that have externalities and information asymmetry. Solid waste collection service as a public good has externalities (negative environmental impacts) if people are excluded from the service. Solid waste collection cannot be provided through the market without regulation (legislation and incentives). The private sector is involved in solid waste collection due to market and government failures. There is also non-governmental organization failure, due to the over

reliance on donor support to cover investment, operation, and maintenance costs. This means that the private sector failure (inefficiency) – under performance and inability to deliver the expected service quality – could occur if the needed policies, legislation, incentives, and government support are not given to it (Wiafe, 2014).

The extension of the market mechanisms of the New Public Management (NPM) to private sector involvement in solid waste collection services is still an emerging issue, especially in developing countries. Contracting out solid waste services to the private sector and charging for services rendered by the private sector are still faced with difficulties. Public services delivery such as water supply, sanitation and solid waste services have been failing in developing countries for a long time despite the NPM and decentralization of local service delivery to the local governments. The expected improvements in service delivery have often not been achieved (van Dijk, 2006). Obviously, decentralization alone was not enough to bring about improvements in service delivery, and therefore private sector involvement in public service delivery was introduced. The paradigm shift from public sector delivery of public services (solid waste service delivery) in developing countries to private sector provision began in the past two decades. Governments vigorously began to promote the private sector as a provider of services to improve service efficiency and effectiveness (Roth, 1987; Cointreau-Levine and Coad, 2000; Batley and Larbi, 2004), but the needed private finance and expertise to bring about the improvement are still issues, especially in developing countries.

In developing countries, different forms of Private Sector Involvement (PSI) have been suggested for achieving greater efficiency and effectiveness, to overcome the government failures in public direct service delivery – too many workers, not enough supervisors, few incentives for better performance and limited finance (Cointreau-Levine, 1994; Cointreau-Levine and Coad, 2000; Post *et al*., 2003). Private Sector Involvement (PSI) in solid waste collection in developed countries emerged in the 1970s, and since then there has been increasing private sector involvement in solid waste collection service in many parts of the world (Eggerth, 2005). By 1994, there were more than 10,000 private firms engaged in urban solid waste collection service in the United States, where more than 80 percent of solid waste was collected by the private firms (Cointreau, 1994). There is now PSI in all the elements of integrated solid waste management from collection, sanitary landfilling, recycling to resource recovery in the developed countries.

Private Sector Involvement in all sectors in developing countries has been slow especially in the Sub-Saharan Africa countries, although there is increasing private sector involvement (PSI) uptake in French-Speaking Africa (Li and Akintoye, 2003). By 1989, there was private sector involvement in solid waste collection in Latin American cities (Santiago, Buenos Aires, Sao Paulo and Caracas) with populations of 3.6 to 12 million (Bar-tone, 1991). The companies in these cities operated under service contract arrangements with the municipalities. The involvement of private sector in solid waste collection in most developing countries started gaining momentum in the 1990s. The World Bank advocated

Private Sector Involvement in the 1994 World Development Report. Since then, the development partners have supported the drive for PSI in solid waste collection and management through capacity building and loans for provision of equipment. The number of private companies involved in solid waste collection keeps on increasing in developing countries, as in the case of Ghana and there is growing interest of the private sector in many developing countries. However, the presence of PSI in urban solid waste collection in developing countries has not been felt in terms of better service quality and total service coverage, and this may be due to a number of issues such as policy, capacity, regulation, legislation, and investment risk.

Advantages of Privatization

One of the most frequently cited advantages of the private sector over government is its management flexibility (Savas, 2000). Private sector management has greater ease in firing personnel for non-performance and in providing upward mobility for workers with good performance. Regarding LMIC, Private Sector Participation (PSP) advocates argue that, privatization results in more competition, better service, economic growth, reduction of national debt, and benefiting from more Foreign Direct Investment (FDI) (Savas, 2000). Privatization means less pressure on municipal budgets, and therefore provides more flexibility. It is also perceived as a way of reducing overall public deficits by increasing short-run revenues.

Cointreau-Levine also observes that the main reasons for this enhancement are that private sector service providers are accountable to their

customers and are obliged to react to customer dissatisfaction. Competition between the private and public sectors is effective in improving cost-effectiveness. If thresholds are specified in the contractual agreement, and the private sector operator is monitored effectively, good standards of operation can be achieved (Cointreau Levine, 2000).

She also argued that, the Private sector management has more flexibility to hire qualified staff, to pay staff according to their performance, to terminate the employment of unsatisfactory workers, and to adjust working hours according to service demand. The private sector can optimize the size of the work force and the ratio of professional to operational staff, and to concentrate its resources on the service for which they are intended, without staff or equipment being requisitioned for other purposes (Cointreau-Levine, 2000). In her opinion, private sector companies are both less restricted by bureaucratic procedures and more able to concentrate resources where they are needed.

According to Cointreau-Levine (2000), some reasons for this increasing focus by municipalities on alternative arrangements include: Many requirements of the MSW rules have not been fulfilled by municipalities in the past – such as primary door-to-door collection or sanitary land filling – and therefore, there are very limited skills and knowledge within municipalities to handle these activities; Most municipalities lack the finance to expand operations into new geographic areas or into new activities; The increased need to focus on efficiency improvements to reduce cost and reallocate expenses within the waste management chain to activities like treatment and disposal.

Limitations of Privatization

Kessides (2005), and others argue that privatization is oversimplified, oversold, and ultimately somewhat disappointing. Kessides (2005) remarks that privatization has proved to be more difficult to implement effectively; it is also less magical in its accomplishments than what was believed or promised beforehand. Privatization, although useful, is easily overworked. It is not an uncontroversial solution to the problem of providing public goods when both costs and benefits are hard to measure. Without sound public management, PSP does little to enhance public value (Kessides, 2005).

On balance, the privatization policy debate has largely amounted to little more than competing anecdotal evidence. Those favouring privatization tell their favourite stories, and those opposed peddle theirs. Hence, the question is not whether privatization and private sector development should occur, but about how it can be done in an optimal way, that is, how to reach social goals through enterprise growth, how to avoid market distortions by supporting enterprises, and how to regulate and enter into dialogue with the business sector.

The decision to privatize a public service should not be based on ideological considerations but rather on economic merits. In Africa as well as Ghana, the main reason why we privatize our solid waste management is economic reasons. The governments of most Africa countries have a lot of pressure on their budgets and as such do not have the commitment in funding solid waste management effectively and as such the management of solid waste by the municipalities has not yielded any fruits and so the only way out is to

privatize, couple with the advantages that go with private companies. One of the most fundamental determinants of the efficiency and effectiveness of any PSP arrangement is competition. That is, the degree of competition that an arrangement permits will, to a major extent, determine how efficiently that arrangement will supply a service.

Willingness of Households to Pay for Solid Waste Management

Privatization depends on fees. In high-income neighborhoods each household pays a fee for the privilege of waste collection (Ian, 2011). Houses are sufficiently spread that if a household determines not to pay the fee and waste accumulates, that action does not immediately offend the aesthetic environment of neighboring households. In low-income neighbourhoods, the opposite is true. Waste is accumulated at central collection points. When payment schemes have been instituted (such as requiring residents to pay a specific fee before the central container units are collected), residents simply free-ride (Ian, 2011).

Also, in a study conducted in the Ojo local government area in Nigeria, Longe *et al.* (2009) applied both quantitative and qualitative methods to assess 60 randomly respondents' perception on household solid waste and found that people are ready to pay for collection service if it delivered regularly. However, in the study area there is lack of accessing the private waste collectors' service. Therefore, the local authority should give attention to performance monitoring and control of the services of private sectors in order to enhance and sustain good service delivery. All in all, they found that inadequate service coverage and lack of timely household waste collection are the main problems in this particular area.

In Ghana, a report by the Kumasi Metropolitan Assembly (2012) revealed that to deal with solid waste collection challenges, the city of Kumasi introduced a house-to-house refuse collection scheme and assigned solid waste collection to the private sector. Kumasi was divided into seven zones, each with its own private contractor, who was responsible for the house-to-house refuse collection in that zone. Households were made to pay for the door-to-door waste collection services provided by those private contractors (Kumasi Metropolitan Assembly, 2012). The willingness to pay for door-to-door waste collection services was influenced by several factors such as age and occupation of respondents.

Furthermore, in a study in Kampala by Banga *et al.* (2011), they found that both the decision to pay and the amount households were willing to pay for improved solid waste collection services were influenced by income, education, age, and home ownership. In a similar study, Amfo-Out *et al*. (2012) stated that in the Akuapem North District in Ghana, the sex of respondents, level of education, income, expenditure level, frequency of payment, frequency of solid waste collection and satisfaction did not have any significant influence on the willingness of the respondents to pay for waste collection. However, variables like mode of collection, occupation and age were seen to have a significant effect on willingness to pay.

Outsourcing

The concept of outsourcing is a business practice in which a company or public institution hires another company mostly a private one or an individual to perform tasks, handle operations or provide services that are either usually

executed or had previously been done by the company's own employees. (WhatIs.com) Padovani and Young (2006) in a comprehensive work on managing high risk outsourcing by municipalities state unambiguously that outsourcing is strategy used by municipalities in an effort to provide high quality services at a low cost. The underlying theory is that by having an external vendor provide a service, a city or town can take advantage of the vendors' considerable experience and economies of scale. The result will be comparable or better quality services than provided by the municipality itself, at a reduced cost to the tax payers, while still allowing the vendor to earn a profit.

Many well-known companies have made a commitment, which is reflected in their mission statements and branding, to use eco-friendly business strategies. One such strategy is waste outsourcing. Okrant (2006) ascertain that waste outsourcing is a concept quite different from traditional waste hauling. A waste outsourcing company will look at and evaluate a client's entire waste stream and create cost effective, customized solutions that reduce waste by using diversion, recycling, and reduction techniques. Cost reduction is a primary goal, and since waste is treated as a recyclable commodity, companies will enjoy the added benefit of new revenue streams.

Header (2002) in his submission opines that significant time and money investment is needed to properly manage waste collection/disposal in-house, and coupled with this are the additional risks to personnel who handle the materials, which opens the company to increased liabilities. However, there are alternatives to managing environmental compliance in-house. Outsourcing waste management

services allows foundries to concentrate on profit-generating activities, such as materials procurement and distribution of products, while trained experts handle environmental waste disposal and the related paperwork.

A research by Clegg, Burdon and Nikolava (2009) conclude that many organisations in the current environment in Australia look at outsourcing not only as a method of increasing efficiency but also as gaining competitive advantage through harnessing the superior specialist skills and experience of the outsourcing provider who takes someone's back office function and transforms them into their front office. Further they are of the conviction that a number of the organisations thought their skills in managing outsourcing had improved considerably such that they were in a position to move from a client/server relationship to a partnership model (i.e. an alliance).

Types of Outsourcing

Gautam (2009) and Wankhade (2009) share the opinion that outsourcing is of multiple types, Business Process Outsourcing (BPO), Knowledge Process Outsourcing (KPO), Medical Outsourcing, Accounts Process Outsourcing, Legal Process Outsourcing (LPO) etc. However (roseindia.net) differ in opinion and affirm that outsourcing can be divided into two broad categories. They are BPO and KPO.

Business Process Outsourcing (BPO)

Wankhade (2009) posits that in BPO, a particular process task is outsourced. An example would be payroll. BPO work could be either back office

related or front office work. Front office functions include customer oriented work like marketing, answering calls, technical support and so on, whereas internal work like billing and purchase come in the back office category. Roseindia.net cite Multimedia/ animation, book keeping, business consultancy, CAD/ CAM, call center, DTP, data entry, proof reading and editing, typesetting, handwriting services, marketing, medical billing and transcription, web design and development etc as services that could be put under the BPO category.

Knowledge Process Outsourcing (KPO)

As is evident from the description, Anthony (2009) illustrate that BPO activities involve carrying out standardized processes for the client. KPO or typically calls for work that needs higher levels of involvement from the worker. The worker has to employ advanced levels of research, analytical and technical skills and has to make decisions of a higher order than BPO work. Examples are pharmaceutical research and development, patent/ intellectual property research, animation and simulation. Gautam (2009) outline data research and analysis, legal services, content writing and development and database development services as some examples. KPO industry is less old and mature than the BPO sector. However apart from BPO and KPO, ITO or Information Technology Outsourcing is another major category. It includes IT services, technical support, software testing, and website management outsourcing (Roseindia.net, Gautam 2009 and Anthony 2009).

Benefits of Outsourcing

For many companies, the need to have a proper waste disposal and transport system is important especially if they are manufacturing products which creates hazardous waste in the process. Proper waste management is essential to avoid harming the people or the environment in the area. Waste management is complex; thus, outsourcing it to the experts is an ideal choice because it saves you money and time, as well as helping to reduce liability. A waste management service provider has the proper equipment and vehicle to ensure the safe transport of waste to the disposal area.

Haakiran (2010) also believes outsourced service saves you money because discounted pricing is provided especially when transporting huge volumes of waste. In addition, since service providers have their own specialised vehicles, you do not have to spend for your own special transport or to even create a costly department for waste management tasks. In addition, you save time because you do not have to hassle your employees with the administrative and operating tasks of handling the waste management procedures. In this way, your workers become more productive because they can just focus on the core procedures that will turn your business into a success.

Risk sharing is also seen as one of the key benefits of outsourcing utility services. (flatworldsolutions.com) Combined with the trend of divesting non-core functions, cost efficiencies are encouraging the European industrial sector to outsource on-site utility management. Such outsourcing agreements are, moreover, being increasingly associated with risk management benefits. Kärki, an

industry analyst states, “Critical factors for attracting industrial customers to externalise their on-site utilities are operating cost savings, accelerated re-engineering benefits, long term stability from integrated services, proactive support in managing exposure to legislation and full or partial risk transfer”

Disadvantages of Outsourcing

The advantages and the importance of outsourcing these days are simply obvious. There are many reasons why businesses, notwithstanding their size and budgets, consider outsourcing. Some businesses, especially small ones, very often simply have no choice but have to outsource some of their business processes. However, it has been established that there are some risks and disadvantages of offshoring that have to be considered. It is however worth noting that much depends on the company you’re dealing with. As a rule, the better the reputation of an outsourcing company, the fewer risks you may face during the collaboration with them (Damoah, 2011).

Though outsourcing is known to bring about a lot of benefits to companies not all and sundry believe in the benefits of outsourcing as outlined above. While the city of Philadelphia boasts that outsourcing would save millions, quell environmental concerns and eliminate noxious odors, employees of a biosolids processing facility in Philadelphia counter that it would cost taxpayers more money, hurt the environment and address a harmless odor (Damoah, 2011). A heated debate has been raging in Europe and America over the issue of offshore outsourcing. The argument of the critics is that it is causing unemployment. Jobs are being outsourced to countries like India, which would otherwise be done by

employees within the shores. This is being looked upon as grave threat to the economies of U.K and U.S (Damoah, 2011).

Steps to Effective Waste Management

According to an online articles directory (Damoah, 2011), waste Management flows in a cycle: Monitoring, Collection, Transportation, Processing, Disposal / Recycle. Through these steps a company can effectively and responsibly manage waste output to bring positive effect on the environment. Monitoring is identifying the waste management needs, identifying recycling opportunities and ways to minimize waste output, and reviewing how waste minimization is progressing. Through keeping records of the different waste streams, a customer can see the results of their efforts in becoming more environmentally friendly. Collection involves the logistical organization to guarantee that bin containers will not overfill and waste sit time does not become too long. The correct bin container size and service frequency is a must to prevent overspill or excessive smell and correct bins for different wastes must be available with sticker and bin colour identification. Bins must be accessible to the truck driver at the agreed times (Damoah, 2011).

Transportation is the organizing of waste transport vehicles with the authorization and ability to transport the specified wastes from a customer's work residence to landfill or processing plant. A waste must be transported by the vehicle designed for it. For example, general waste requires a vehicle with thicker compacter walls, to that of a cardboard and paper waste transporting vehicle. Therefore, a customer may require a series of vehicles to meet their waste

management needs. Vehicles, drivers, and companies need licenses and approval in certain Council Areas to transport waste. EPA standards need to be upheld as well as General Public Safety. (UN-HABITAT, 2009)

Safety standards are vital to the transportation of clinical and hazardous wastes. Drivers must undergo training for emergency circumstances that may arise (Damoah, 2011). Processing involves the separation of recyclables for treatment, and then after treatment, packaged as raw materials. These raw materials are sent to factories for production. Non-recyclable wastes by-pass this step and are delivered straight to landfill. Liquid and hazardous wastes are delivered to treatment plants to become less hazardous to the public and environment (Damoah, 2011).

Disposal / Recycling is the disposal of non-recyclables into landfill. Landfill sites must be approved by legal authorities. Legal authorities guarantee that specific wastes are buried at the correct depth to avoid hazardous chemicals entering the soil, water tables, water systems, air, and pipe systems. In this step the raw materials made from recyclables are produced and sold as products on the market. Companies can purchase such products to further sustain the environment and natural resources (articlebase.com).

Does Outsourcing and/or Private Sector Deliver Efficient and Quality Solid Waste Management Service?

The rationale for the Private Sector Involvement (PSI) in solid waste collection is to improve efficiency (reduce cost) and effectiveness of service

delivery (service quality) through competition for the market – where private sector providers compete for a zonal monopoly to render service over a period of time – and to ensure that the environmental aspect of sustainable development is integrated into solid waste management. However, recent case studies of PSI in solid waste management in some developing countries – for example, in Kenya (Karanja, 2002; Mwangi, 2003), in Ghana (Obiri-Opareh, 2002; Awortwi, 2003), in Tanzania (Mbuligwe, 2004; Kassim, 2006) and in India (Post et al., 2003) – showed that there has been an increased coverage in some of the countries, but the service quality, efficiency and sustainability of private sector service delivery are still issues that require further studies to identify drivers for performance. The private sector still faces challenging issues of inefficiency and low service quality due to some factors of the enabling environment, inter organizational arrangements, and how companies are run; and this is what this study seeks to identify.

Studies on performance of service providers often arrive at the conclusion that services delivery by private sector is associated with gains in effectiveness and service efficiency more than by municipal departments (Cointreau-Levine, 1994; Cointreau-Levine and Coad, 2000; Post et al., 2003). Other authors argue that the results of private sector performance (efficiency gains) over public sector delivery showed that efficiency gains are mixed and that the debate on private sector efficiency gain over public sector is inconclusive (Donahue, 1989; Bel and Warner, 2008). The results from these studies showed that their explanatory

factors are inconclusive, and therefore require further studies into other approaches.

Private sector inefficiency in developing countries may be due to a number of factors, and one of them is operational inefficiency due to weak capacity. Zurbrugg (1999) argues that the operational inefficiency of solid waste collection service delivered in developing countries are due to weaknesses in institutional arrangements (policies, legal, and regulations), deficient capacity of the public and private sector institutions involved, and the use of inappropriate technologies. It follows from this that operational efficiency of the service agent among other factors are necessary for private sector efficiency gains and improved performance. There has been increased involvement of the private sector in solid waste management in many cities in developing countries (Post et al., 2003; Cointreau-Levine and Coad, 2000). However, despite the increasing interest in public-private-community partnerships, there is evidence that coverage and the needed improvements in environmental sanitation have not been achieved (Onibokun and Kumuyi, 1999; Oduro-Kwarteng et al., 2006). The solid waste collection coverage has not improved to the desired level in the developing countries, despite the paradigm shift from public delivery of solid waste services to private sector participation.

There is an argument that the private sector does not, in some cases, guarantee higher effectiveness and efficiency gains or reduce cost. Some studies suggest that the efficiency of private sector depends on the capacity of local government institutions to regulate and monitor performance of the private

sector4, and to recover cost (Obirih-Opareh and Post, 2002; Awortwi, 2003; Obirih-Opareh et al., 2004; Oduro-Kwarteng et al., 2006). Apart from regulation and performance monitoring by the public sector, which are external to private sector organization, there are other internal factors which affect private sector performance. The effectiveness and efficiency of service delivery by private sector depends on a number of factors, which may be internal or external to private sector organization.

The performance improvement of solid waste services in developing countries is daunting and one would wonder where things went wrong in the management and provision of the services. Although literature on technical, policy frameworks, implementation strategies, urban governance and institutional dimensions of waste management is large and growing, detailed analysis of internal and external factors to private sector organization is needed to be able to apply measures that will increase efficiency and effectiveness in solid waste service provision in developing countries. The theoretical framework for this study is based on theories of markets and regulation of public services. Market as a process involves market actors (buyers and sellers), exchange mechanisms (transactions), object of ex-change (services), industry demand and supply, and regulators. The market and how it is regulated determines the service coverage, efficiency, and quality.

Privatized Waste Management System

Solid waste management in the city is the responsibility of the cleaning section within the environmental department or ministry of a country or assembly.

They are charged with the collection, transport and disposition of all solid waste, the cleaning of the streets, collection and disposition of dead animals, cleaning of the alleys, and roadside drain and choke clearing. The department is directly responsible for maintaining a clean environment in the city. However, its share of solid waste collection ranges from 20-30% of the total solid waste generated. Private institutions collect and dispose of some of the solid waste, a few individual households use open incineration, and some private companies and individuals buy recyclable solid waste. But the bulk of the urban solid waste (70-80%) is left to decompose where it is dumped (Nyakaana, 2016).

According to the study of Nyakaana (2016), Uganda, Kampala cities KCC is assisted by private companies which collect garbage for disposal from individual households on a private arrangement. Bin-it operates in cities like Najjanankumbi, Makindye, Bunga/Gaba, Bugolobi, Mbuya and Muyenga. They charge a fee for their service depending on the size of the house and use pick-ups to collect the garbage which is kept in polyethylene bags provided by the company. The garbage is not sorted except at the garbage heap before it is going to be burnt. The garbage is then dumped on private lands and the owner is paid a fee. There have been various studies done in most developed countries such as the United States, Canada, and the United Kingdom, which separately surveyed more than 2,000 cities, showed that services provided by public monopolies typically cost 25 to 41 percent more than competitively contracted services. In Malaysia, where many cities engaged multiple collection contractors through well-defined competitive tendering procedures, the cost of contractor services averaged 23

percent lower than the cost of service provided by the local authorities (Anagal, 2014).

Anagal (2014), stated that, obtaining efficiency gains in solid waste management is efficient mostly by the involvement of private sector that is, when the key success factors of competition, transparency and accountability are present. The private sector improves efficiency and lowers costs through establishing principles such as limited and well-focused performance objectives, financial and managerial autonomy, a hard budget constraint, and clear accountability to both customers and providers of capital. The private sector plays other important roles by mobilizing needed investment funds, and by providing new ideas, technologies and skills.

Conclusion

Following the discussion above and all the literature reviewed, it is imperative to note that the concept of waste management need to be further studied to find more permanent ways to sustain waste management. Also most of the advantages outlined under privatization and outsourcing makes it the most appropriate, effective and efficient way to manage waste in the present time and alternative ways to outsourcing or privatization could be considered for a long term solution in the future.

CHAPTER THREE

RESEARCH METHODS

Introduction

The purpose of this study is to find out how waste management in the Ahafo-Ano South District Assembly (AASDA) can improve through outsourcing to private companies. In order to achieve this, the study made use of both primary and secondary sources of data on the Management of Solid Waste Disposal in District Assemblies in Ghana. Hence, the chapter details out the methodology adopted and used for the study. These include the research design, data sources, population, sample size and sampling techniques, data collection procedure, data analysis and profile of the study area. It also includes devices used in presentation and reporting of findings.

Research Design

This study is an analytical cross-sectional study employing a mixed method approach. Mixed methods include the adoption of quantitative and qualitative methods. Mixed methods are seen as effective since the strengths of each method are taken into consideration (Curry, Nembhard & Bradley, 2009). Besides, a combination of quantitative and qualitative methods helps in triangulation of the results (Creswell & Clark, 2007; Curry *et al.,* 2009). Thus, the objectives one and two were assessed using a structured quantitative questionnaire while the qualitative method was used to assess objectives three, four and five.

Source of Data

For this study, both primary and secondary data were used to aid data collection. These sources of data collection were further categorized into qualitative and quantitative data collection methods.

Primary Data

Both qualitative and quantitative data collection techniques were employed. The qualitative data were obtained from structured interviews and informal discussions under different thematic areas and ideas while structured questionnaires were used for the quantitative data collection. This was very successful as the questionnaires brought great information for analysis. In situations where there were incomplete questionnaires, informal discussions and interviews with some heads of households helped to verify data and to also complete them. On the other hand accurate information and data were attained during interview with people in authority concerning waste in the district and where there were differences in figures, reports from the Assembly were relied on for correct figures.

Secondary Data

The secondary data for the study relied on sanitation report from the Assembly, annual health report from the Ahafo Ano South District Health Directorate, published documents, research articles from on the topic, journals, newspapers and reports from the internet.

Population

The target population of this research was basically the few core staff of the Assembly, which is those directly in charge of waste management, 26,930 Household Heads and One District Director of Zoomlion Company Limited. The Core Staff of the AASDA include the District Environmental Health Officer. The 26,930 was the official statistics for heads of household from the Ghana Statistical Service (GSS). The District Director of Zoomlion Company Limited is the only private operator of the waste management collection in the District. This was to provide the research with an in-depth knowledge on the management of waste management collection through outsourcing in the AASDA and therefore different experiences and recommendations were gathered by this study.

Sample Size and Sampling Techniques

Waste management is a problem in all communities in the Ahafo Ano South District. In order to get a sample size, communities were selected. In selecting the communities, all the communities were line listed, a random number was used to select the first community. Then, every fifth community on the list was selected. In all 33 communities were selected, however, Mankranso being the district capital was purposely chosen. A multi-stage sampling method was used to select the respondents. Using the Krejcie and Morgan's table, a sample size of 100 respondents out of target population of 26,930 units was used for the study and the respondents were selected through purposive sampling technique and simple random sampling technique. The population under study consisted of the Assembly Members, Unit Committees and Area Councils members as well as

some residents of the district. They were conveniently selected because they could be easily accessed and provide the relevant information needed for the study. Table 1 and Table 2 show the summary and breakdown of the various sample units used for the study respectively.

Table 1: Sampling Units for the Data Collection (Summary)

Level	Sampling Unit	Population	Number of People Interviewed (Sample)
Director of Zoomlion Company Ltd (Purposive Sampling)	Director	1	1
Ahafo-Ano South District Assembly (AASDA) (Purposive Sampling)	District Environmental Health Officer	1	1
Household Heads (Simple Random Sampling)	Household Heads	26,930	100
	Total	**26,932**	**102**

Source: Author's Construct, May, (2016)

Table 2: Sampling Units for Data Collection (Breakdown)

Level	Sampling Unit	Number of People Interviewed (Sample)	Mode of Data Collection
Director of Zoomlion Company Ltd (Purposive Sampling)	Director	1	Interview Guide
Ahafo-Ano South District Assembly (AASDA) (Purposive Sampling)	District Environmental Health Officer	1	Interview Guide
Household Heads (Simple Random Sampling)	Heads of Household	100	Questionnaire
	Grand Total	**102**	

Source: Author's Construct, May, (2016)

Research Data Collection Method

Both quantitative and qualitative data were used to find out how waste management in the AASDA can improve through outsourcing to private companies using both structured and semi-structured interviews. A mixed method was used for the collection of data so that one could counter the shortfall of the other. Also using the mixed method help the researcher to gain access to more information. Primary data was gathered from the Core Staff of the AASDA, District Director of Zoomlion Company Limited and Household Heads through the administration of questionnaires and interview guides. The 102 respondents (sample size) were selected using convenient sampling techniques.

Questions were framed on the basis of the objective of the study. Care was taken to ensure that the questions were not ambiguous. All the questionnaires were pretested to identify any deficiencies before it was administered to the respondents. The questionnaires were self-administered since they were stated in a simple and an easy to understand way, and face-to-face key informant interview were carried out. The interview guides were used to obtain data from the District Director of Zoomlion Company Limited and the District Environmental Health Officer. The interview guide entailed open ended questions which enabled the researcher to obtain in-depth information on the topic from respondents. The questionnaires were used to obtain data from the 100 Household Heads.

All the questionnaires administered sought information on the extent to which the AASDA is already involved in outsourcing their mandate of maintaining good sanitation, the sustainability of outsourcing as an option for improving refuse collection in the district and the other options of refuse management to outsourcing as an alternative and the way forward for sanitation management in the District.

Data Analysis

Responses from the field were edited, rationalized and collated to avoid discrepancies. In analysing the collected data both quantitative and qualitative methods of analysis were used. With the quantitative method, the collected data was coded and entered into the Statistical Package for Social Scientists (SPSS) software for the analyses. The software was used to categorize, tabulate and recombine data in the form of frequency tables to address the purpose of the study

according to the research questions. The results of the study, which were largely quantitative, were presented in the form of frequency tables, graphs and diagrams. The data was grouped according to the similarity of responses and discussed. The qualitative data from interviews conducted with all other categories of respondents was analysed manually by making summaries of the views of the respondents and supporting these with relevant quotations that captured those views, supported with data from documentary sources and my own field observations of the waste situations in the case-study city. The analysis was organised under themes derived from the data and the research questions that guided the entire investigation.

Validity and Reliability

Polit, Beck and Hungle (2001) defined validity as the degree to which an instrument measures what it is supposed to measure. According to Polit *et al.* (2001), three aspects of validity are important namely: content, criterion-referenced and construct validity. Content-related validity is defined by Burns and Grove (2001) as the extent to which the method of measurement includes all the major elements relevant to the concept being measured. In this study, the questionnaire would be subjected to critical scrutiny to ensure its appropriateness. It would be given to the supervisor for his perusal and comments with the view to establishing content, criterion-referenced and construct validity. This would enable the researcher to remove items that would be considered irrelevant to the subject under consideration. New ideas and relevant items to be derived from the exercise would be included in the final draft of the instrument.

Polit *et al.* (2001) defined reliability as the consistency with which an instrument measures the attribute. An instrument is said to be reliable if its measures accurately reflect the true score of the attribute under investigation. To reinforce and assess the reliability of the instrument in this research, the study questionnaire would be pre-tested among 20 respondents in Ahafo Ano North District. Feedbacks from the pre-test would be noted and the necessary modifications would be made to the questionnaire for readability and comprehension. Besides, the purpose of this pilot test is to help determine the extent to which the research questionnaire would be effective in collecting data from respondents for the actual study.

Ethical Consideration

Ethical approval was by the University of Cape Coast Committee on Human Research, Ethics and Publications. Besides, an introductory letter from the Ahafo Ano South District Assembly was received by the researcher that enabled her to seek permission for the study. The purpose of the research was explained so as to assure respondents that the study is for academic purpose and served their general interests. An explicit informed consent was obtained from the participants before interviewing, reviewing of records and questionnaires administered. Potential risk or benefits was explained to respondents taking part in the study. Participation in the study was voluntary. To guarantee the privacy of the respondents, they were made to understand that their names would not be included in the report. All the information that were gathered from respondents

were kept strictly confidential. Anonymity for all records reviewed were maintained.

Chapter Summary

In summary, this chapter gave an overview of the design used for the research as well as the data collection methods. The study used data from both primary and secondary source. It also used qualitative and quantitative methods in sourcing for the information. The validity and reliability of the work was assured and ethical issues relating to respondents and their privacy were also addressed.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

Introduction

This chapter deals with an analysis and interpretation of the data gathered from the field. A total of 102 respondents sampled from the District Private Operator of Waste Management, District Environmental Health Officer and Households from the AASDA were involved in the study. It shows the discussions and findings of the study which seek to answer the research questions vis-à-vis the research objectives. This chapter plays a vital role in the entire study as it relates empirical data to secondary data reviewed in the previous chapters.

Socio-Demographic Characteristics of Respondents

The socio-demographic characteristic of respondents is vital in any data analysis as it provides the background information of interviewees to be assessed. This section therefore captures data on the respondents' designations, sex, age, status/position, and years of experience and level of education toward improving waste management in the AASDA.

Designations

The designation of the respondents was to crosscheck if the target population of the study was met. Table 1 presents the various respondents and their designations of the study.

Table 3: Designations of Respondents

Designation	Frequency	Percentage
District Director, Zoomlion Company Limited	1	1.0
District Environmental Health Officer	1	1.0
Household-Staff	10	9.8
Household-Assembly Members	10	9.8
Household-Others	80	78.4
Total	**102**	**100**

Source: Author's Field Survey, Dorcas Baidoo May, (2016)

From Table 3, Other Households (78.4%) recorded the highest respondents followed by Household-Staff (9.2%) and Household-Assembly Members (9.8%). This implies that the grassroots (Other Households and Assembly Members), who are the main beneficiaries of the improving waste management, were more than four-fifth (88.2%) of the respondents making it a good platform for assessing the outsourcing of waste management to private operators in the AASD.

Age of Respondents

Age, which regulates one stage of life, is one of the major determinants in socio-demographic data collection. This is to identify the age groupings of respondents in the improvement of waste management in the AASDA as depicted in Figure 1.

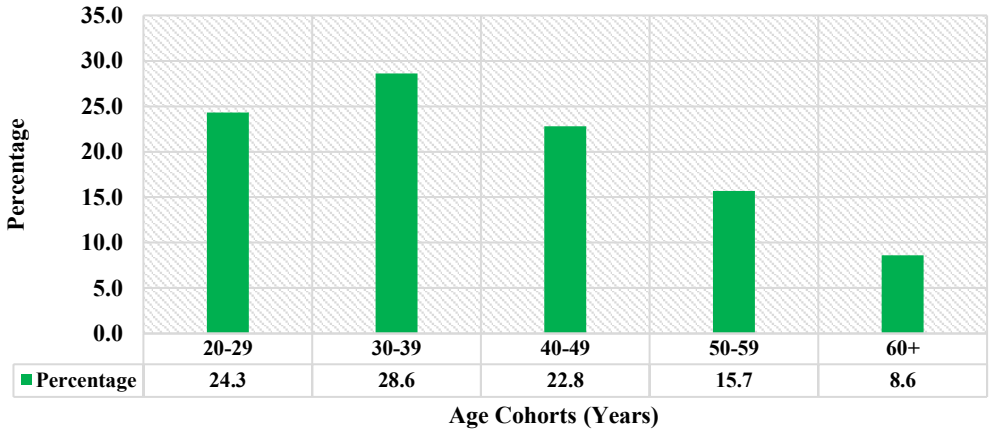

Figure 1: Age of Respondents

Source: Author's Construct, May, 2016

From Figure 2, most respondents ranged between 30 to 39 years (28.6%) followed by 20 to 29 years (24.3%) and 60+ (8.6%) recorded the least. This means that a little more than three-quarters (75.7%) aged between 20 to 49 years of the respondents are in their youthful age. Henceforth, it would be prudent to involve majority of the youth in the planning and development of waste management in the District.

However, the directors used as respondents were in the ages of 50-59 years been in the bracket of the 15.7% of the total respondents.

Sex of Respondents

Sex plays a vital role in the improvement of waste management as it has great tendency of creating enabling environment for cleanliness as reviewed from the literature. Therefore, Table 2 shows the sex of the respondents interviewed.

Table 4: Sex of Respondents

Sex	Frequency	Percentage (%)
Male	71	69.6
Female	31	30.4
Total	**102**	**100**

Source: Author's Field Survey, May, (2016)

Table 4 indicates that the male respondents were 69.6 percent whilst the female respondents were 30.4 percent. This clearly shows that the males outnumber the females more than two-times in the District with respect to waste management. This means that gender inequality persists in the improvement of waste management in the District which is dominated by more males than females. This is however not surprising as most households are headed by males and according to the 2010 Population and Housing Census (PHC) conducted by the Ghana Statistical Service (GSS) male population dominates that of females in the District.

Working Experience of Respondents

The number of years worked in organisation determines one's level of knowledge, experience and familiarity with the activities as far as waste generation and disposal is concerned. This was done in order to give more credence to the respondent's ideas and submissions. Figure 3 illustrates the working experience of the respondents in the District with respect to waste management.

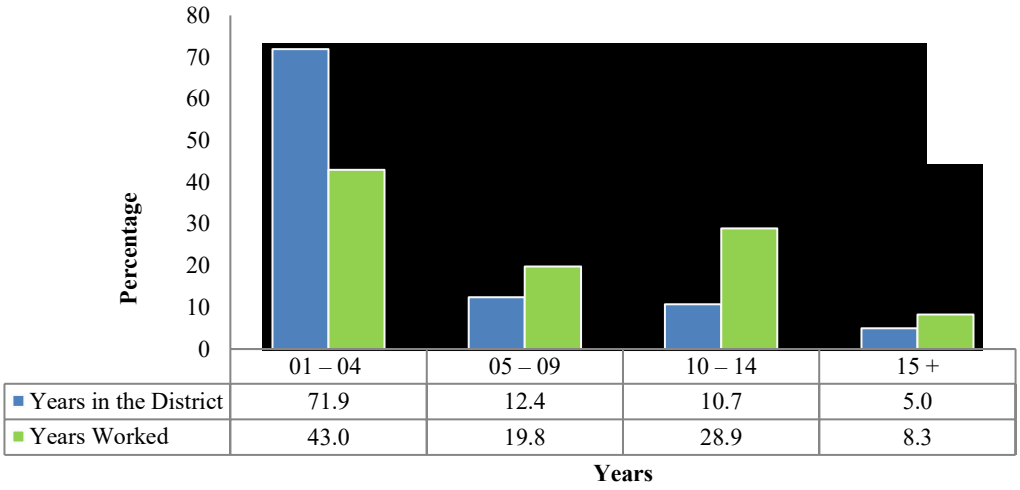

Figure 2: Working Experience of Respondents

Source: Author's Construct, May, 2016

From Figure 3, at least all the respondents have some level of working experiences both in the District and elsewhere ranging from one year to 15 years and over. Among the 102 respondents, 71.9 percent have worked in the District between one to four years indicating that the respondents have great experience in the management of waste both in their homes and in the District. Moreover, more than halve of the respondents (57.0%) have working experience more than four years in the District. Hence, both the heads (45.5%) and the subordinates (54.5%) were knowledgeable enough to share their experiences (see Table 4.3). This implies that the respondents have the required knowledge in the improvement of waste management in the District.

Level of Education of Respondents

Education, as the lifeblood of every organisation, needs to be assessed to know the kind of educational achievements the respondents in the District have in the performance of their duties as executives and members of the

district. In support of this, Table 6 shows the level of education of the respondents.

Table 5: Level of Education of Respondents

Level of Education	Frequency	Percentage (%)
None	2	2.0
Middle/JSS/JHS	5	4.9
Secondary/SSS/SHS	12	11.8
Diploma/Degree	44	43.1
2nd Degree	39	38.2
Total	**102**	**100**

Source: Author's Field Survey, May, (2016)

Among the 102 respondents, most of the respondents (43.1%) were Diploma/Degree holders followed by Second Degree (38.2%) and Middle/JSS/JHS (4.9%) and None (2.0%) recorded the least as figured in Table 6. In computation, 81.3 percent of the respondents have attained tertiary level certificate indicating that the respondents were academically qualified and experienced enough to response to outsourcing of waste management to private contractors in the District.

Means to Dispose of Refuse in the House

This section is to find out how respondents dispose of their refuse in their homes. This was used to measure the improved means of disposing of solid waste in the District. Table 4.5 shows the responses for the means of refuse disposal in the District.

Table 6: Means to Dispose Of Refuse in the House

Response	Frequency	Percentage (%)
Collections Bins	63	63.0
Burying	11	11.0
Burning	9	9.0
Backyard Disposal	10	10.0
Others	9	9.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

Collection bins principally are the means by which respondents dispose of refuse in the house recording a whopping 63.0 percent response. It is clear from the results in Table 7 that more households are accepting bins as the conventional means of collecting waste together in the house for collection and disposal by the Zoomlion Company Limited. However, burying in trenches, burning, backyard disposal and other methods like the open refuse sites in neighborhood are no longer good options for disposing refuse considering the percentage responses they all generated as figured in Table 5. This means that the provision of more collection bins will help to improve refuse collection in the District.

Payment of Fees for Collection of Refuse

In the process of improving waste management collection, the payment of user fee plays a critical role in the maintenance and sustainability of waste management. The views of respondents as captured in Table 8 were sought to find out if they are willing to pay for collection of refuse generated in their various homes.

Table 7: Payment of Fees for Collection of Refuse

Response	Frequency	Percentage (%)
Yes	77	77.0
No	23	23.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

Out of the 100 respondents, 77.0 percent are willing to pay for collection of refuse in their homes as compared to 23.0 percent who are not willing to pay as presented in Table 8. This means that more than three-quarters (77.0%) of the respondents were willing to pay for the collection of refuse in their homes of which the District could capitalize on it, to improve collection of refuse in the District.

Mode of Payment of Fees for Collection of Refuse

From Section 4, as respondents accepted the responsibility to pay for the collection of refuse, the mode of payment was quizzed to know the easiest way of paying for the fees. Table 7 shows the responses of the mode of payment of fees for collection of refuse in the District.

Table 8: Mode of Payment of Fees for Collection of Refuse

Response	Frequency	Percentage (%)
Pay-As-You Dump (Daily)	10	13.0
Office Collection (Monthly)	15	19.5
House-To-House Collection (Monthly)	52	67.5
Total	**77**	**100**

Source: Author's Field Survey, May, (2016)

It was revealed from Table 7 that more than two-thirds (67.5%) of the 77 respondents preferred House-To-House Collection (Monthly) followed by Office Collection (Monthly) (19.5%) and Pay-As-You Dump (Daily) (13.0%).

From the analysis, one could conclude that most of the respondents preferred paying the fees through monthly House-To-House Collection.

Present AASDA Approach Used for Waste Management

Under this section, the focus is to find out if the respondents have any knowledge in the present policies used by the AASDA in the management of waste in the District. Table 14 shows the AASDA known policies to waste management in the District by respondents.

Table 9: Present AASDA Policy Used for Waste Management

Response	Frequency	Percentage (%)
Outsourcing/Privatisation	67	67.0
Internal Management	20	20.0
High taxation	13	13.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

Statistically, 67.0 percent of the respondents admitted of knowing that the Assembly has engaged in Outsourcing/Privatisation Approach of the waste management in the District with 20.0 percent knowing that is purely done Internal Management of the Assembly as figured in Table 14. However, 13.0 percent of the respondents attested to high taxation and fines as a policy adopted by the District. Hence, from the analysis, one could conclude that the Assembly is engaged in Outsourcing/Privatisation of managing waste in the District.

Sustainability of Outsourcing of Refuse Outsourcing Refuse Collection

Sustainability which determines the ability for the district to keep a good agent in solving the refuse collection and management problem over time is vital with respect to outsourcing of waste management in the District. Figure

5 shows the responses to the sustainability of outsourcing waste management in the District.

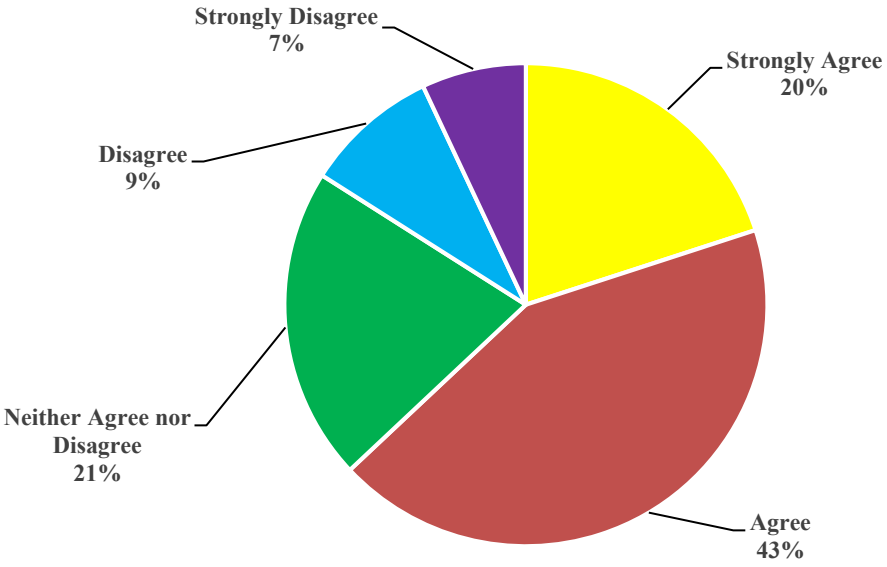

Figure 3: Sustainability of Outsourcing of Refuse Collection

Source: Author's Construct, May, 2016

Then there is a statement of sustainability of outsourcing strategy on the part of the Assembly's capacity if they should be highly engaged in outsourcing in the questionnaires and respondents totally agree with a 43.0 percent response that it is sustainable. 20.0 percent also strongly agreed with 9.0 percent and 7.0 percent disagreeing and strongly disagreeing respectively as illustrated in Figure 5. This suggests that with proper measures in place, outsourcing of waste management in the District can be sustained and maintained.

Improvement in Waste Management through Outsourcing to Private Agents

Table 15 shows the respondents' past experience of outsourcing waste management to private agents in the District. Even though respondents attested to the sustainability of outsourcing, their views on improving the system is

critical in the management of waste in the District.

Table 10: Improvement in Waste Management through Outsourcing to Private Agents

Response	Frequency	Percentage (%)
Yes	79	79.0
No	21	21.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

Since the Assembly has been involved in outsourcing certain types of waste collection over the past years, 79.0 percent of respondents believed there have been some improvements in the sanitation situation in the District as presented in Table 15. However, 21.0 percent see no improvement at all in the outsourcing. This suggests that most respondents have confirmed that outsourcing of waste management to private agents has seen tremendously improvement over the years in the District.

Payment of Sanitation Maintenance Fees

The payment of user fee for maintenance is one of the sustainable means of ensuring consistent improvement in waste management in the District. Table 16 presents the responses of who should pay for sanitation maintenance fees in the District.

Table 11: Payment of Sanitation Maintenance Fees

Response	Frequency	Percentage (%)
Government (Assembly)	13	13.0
Individuals (Households)	16	16.0
Both (Assembly & Households)	71	71.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

If outsourcing is to be sustainable as indicated earlier by respondents, then who was to pay for the cost of maintaining this feat? Here the answer is an emphatic one that is both Government (Assembly) and individuals (Households) must be held responsible. More than two-thirds of the respondents (71.0%) support this idea and hence a laudable idea to propose in this research as shown in Table 16. In support of this, from Table 16, 77.0 percent of the respondents agreed to pay for sanitation user fees which should be collected from house to house every month. Government alone cannot finance this venture on its own so individuals must be made to pay for the waste they generate to help government to take care of it after wards.

Measures Suitable for Managing Waste in the District

Measures are actions taken to resolve or prevent situations or problems in an organisation or within a particular location. Under this section, respondents were asked to provide the appropriate measures needed in managing waste in the District. Table 17 shows the measures suitable for managing waste in the District.

Table 12: Measures Suitable for Managing Waste in the District

Response	Frequency	Percentage (%)
Reactive Measures (Outsourcing)	27	27.0
Recycling	24	24.0
Deterrent Measures (Fines/Prosecutions/Sanctions)	45	25.0
Proactive Measures (Discouraging Inorganic Waste)	4	4.0
Total	**100**	**100**

Source: Author's Field Survey, May, (2016)

From Table 18, all the respondents suggested number of measures that could help to address the challenges facing the waste management in the District. Although, all the measures had different degrees of support, but their effective implementations would have the tendency to reduce drastically the challenges facing waste management in the District. Zooming into the analysis, the respondents ranked deterrent measures that is fines and prosecutions (45.0%) as the most prominent measures in improving waste management in the District followed by reactive measures for example outsourcing or contracting agents to clean up after people have littered (27.0%), recycling (24.0%) and lastly proactive measures like discouraging inorganic waste (4.0%). However, with respect to the implementation of deterrent measures there should be effective collaboration among the parties involved so as not to create social enemies in the management waste in the District.

Interview with Contractor

Currently, the AASDA has signed a contract with one company to assist in refuse collection in the District to help rid the District of filth. The company is called Zoomlion Company Limited. This outsourcing company has been working with the Assembly for past 10 years (that is since 2006). The District Director was interviewed, also informal discussions were done with some of the workers of Zoomlion Company and the findings on issues about outsourcing and their dealings with the Ahafo Ano South District Assembly are presented below.

All the collection of refuse at the vantage points are done by the Zoomlion Company. At the refuse collection points, large refuse containers are

placed for households to dump their refuse from their homes using the collection bins. When the containers are full, they are then disposed of at the final dumping site in the District. This means that the disposals from homes are done by the households whereas the collections at vantage points are done by the company. From the two directors' responses, the District Assembly pays for the collection of refuse from the vantage points and the disposal of refuse to the final dumping site. This implies that households in the District do not pay for refuse collection and disposal.

The District Annual Volume of waste generation is about 100,000 tons of refuse with the District spending averagely GH¢400,000.00 every year for refuse collection. Out of this amount, about GH¢300,000.00 is paid to the Zoomlion Company Limited.

From the survey conducted on the outsourcing company, the directors think it is prudent for the Assembly to outsource refuse collection, and also admitting that they have been able to meet their mandate of refuse collection in the Assembly as covered in the contract agreement. The directors further believed that the Assembly's engagement of the company has been beneficial to the District in the aspect of cutting down cost, as most people respond to payment better to private organizations than government organizations. The efficiency of Zoomlion Company Limited is also seen, as it continually needs to prove they are the right person for the job.

The District Director for Zoomlion Company nevertheless disclosed that the Assembly is able to meet their financial obligations to them as stipulated in the contract agreement. With regards to promptness of payment of fees for the services they render the Assembly, the company admitted that the

Assembly is prompt in the payment of their fees since the deduction is done at source.

Even though, the Zoomlion Company believes that the Assembly could consider other strategic options for proper maintenance of sanitation other than outsourcing, but they admit that the outsourcing strategy is the most suitable and sustainable.

After a sit down with the district officer for sanitation, he asserted that the District Assembly acknowledges that the outsourcing strategy is sustainable because Zoomlion Company limited, which is the private company in charge of waste management for the district at the moment have the equipment and capacity to undertake such projects unlike the Assembly and looking at what is happening in other District Assemblies, the presence of other private companies would further improve the waste management system since there would be competition for customers. However, Zoomlion in fered that the strategy is sustainable for as long as the Assembly is able to meet its financial obligations to the company.

Discussion of Findings

Assemblies Current Approach to Waste Management

From the results of the questionnaire most respondents indicated that the present approach used by the AASDA to manage the sanitation situation in the district is contracting of a private agent (that is Zoomlion). Some others believed that provision of litter bins and collection of refuse from dumping sites by vehicles are the approaches used by the assemblies. Door to door and communal collection was however also mentioned as one of the approaches used by the private agent contracted by the Assembly.

Nevertheless amongst all the responses giving, the most prominent response giving by over 90 per cent of the respondents was pay as you dump (PAYD) and outsourcing. Here households have to pay for every bag or bucket of refuse they dump at the refuse sites before giving the permission to use the site. The assembly then uses the outsourced agents or private company i.e. Zoomlion to cart away the refuse from these sites. The private company even takes on a bigger contract of cleaning up the streets and lorry stations, a venture they have successfully undertaken throughout parts of the country where they have jurisdiction.

Outsourcing will depend on the financial base of the assemblies and the effectiveness performance of the private agent.

Alternative Options

In dealing with waste management in the district, respondents indicated that apart from outsourcing:

1. The assembly should embark on awareness creation and sensitization through massive education of people on the need for cleaner communities. On top of this the assembly can employ task force to ensure people do not litter. Charging individuals the fees fixed for collection of refuse by district was also suggested. The assembly should also enforce its bye laws and use spot fines and punitive sanctions against individuals who litter the streets if necessary was additionally suggested.
2. However majority of respondents (more than 50 per cent) suggested that recycling, re-using and reduction in waste generation was the way forward.
3. Other respondents suggested that the assembly should employ reasonable

number of sanitary labourers for all sub-district with the mother district itself assisting in quarterly clean up exercises and also assisting communal labour once every month at the area council levels.

4. Further suggestions were that empowering the environmental health department to execute their mandate to the people was necessary.
5. Ensuring that waste bins are placed at vantage points in the streets and regularly emptied would help a great deal and also ensuring that waste containers are always available at all refuse sites and also regularly carted away.
6. The District Assembly should introduce modern trends in waste management e.g. solicit for funds from corporate institutions.
7. Good basic personal hygiene should be imbued in home and school upbringing, attitudinal change and commitment to keeping cleaner communities should be a concern for the citizenry.
8. Assembly should adopt its own emergency collection unit to cater for failures of the private company.
9. Waste management practices should not be outsourced completely but should be done in partnership with the assemblies.

Chapter Summary

This chapter revealed the information gathered after getting response from data administered to respondents. The demographic characteristics of respondents were explained. The results from the questionnaire were grouped and interpreted. Also responses from interviews conducted were analysed, which informed conclusions and recommendations made from them. This helped to get alternative options to outsourcing as a means of managing waste.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

Introduction

This chapter indicates the study objectives and the method used in collecting the data for the study objectives. It also gives the summary of findings from the study, conclusion reached from the study, recommendations given and further research that could be done on the study.

The study objectives and data collection methods used

The objectives for the study were as follows:

1. To identify the refuse management practices in the Ahafo Ano South District
2. To assess the willingness of households in the Ahafo Ano south District to pay for door-to-door refuse collection
3. To establish the extent to which the AASDA is already involved in outsourcing their mandate of maintaining good sanitation in the District
4. To determine the sustainability of outsourcing as an option for improving refuse collection in the district
5. To examine other options of refuse management as an alternative to outsourcing

In order to get answers to these objectives, both qualitative and quantitative methods of data collection were applied. Structured questionnaires were administered to household heads to answer, structured interviews were also conducted for the private managers of waste management in the district as well as the District Assembly Officer in charge of sanitation and informal

discussions were had with some workers of the private company contracted by the Assembly as well as individual household heads.

Summary of Findings from the Study

Objective 1: To identify the refuse management practices in the Ahafo Ano South District

From the data, it was identified that collection bins principally are the means by which respondents dispose of refuse in the house recording a whopping 63.0 percent response. The Pay-as-You-Dump policy was being practiced here. Most of the respondent were aware of some measures put in place by the District Assembly in waste management. Although collection bin were largely preferred, some few respondent indicated dumping at refuse site and digging of holes to bury refuse, their reason was not getting money to pay for dumping at the collection bins each day.

Objective 2: To assess the willingness of households in the Ahafo Ano South District to pay for door-to-door refuse collection.

Out of the 100 respondents, 77.0 percent were willing to pay for collection of refuse in their homes. More than two-thirds (67.5%) of the 77 respondents preferred House-To-House Collection (Monthly) indication that they are more willing to make payment for door to door refuse collection on time to prevent them from getting diseases

Objective 3: To establish the extent to which the AASDA is already involved in outsourcing their mandate of maintaining good sanitation in the district

It was indicative that the AASDA was largely involved in outsourcing or privatization of their mandate to maintaining good sanitation in the District since about more than 90% of waste management issues were outsourced to the Zoomlion Company, with the Assembly playing oversight responsibilities to their activities and handling just a few aspect of waste management issues in the district.

Objective 4: To determine the sustainability of outsourcing as an option for improving refuse collection in the district

It was apparent from the findings that outsourcing as an option to refuse collection in the district was quite sustainable and the sustainability was dependent on the Assemblies meeting their financial obligations and on time. Also the efficient and effectiveness of the private agent used in managing the waste is a factor in the sustainability. As long as they both played their part well, outsourcing could be sustained in maintaining good refuse collection in the District.

Objective 5: To examine other options of refuse management to outsourcing as an alternative

Other options of refuse management to outsourcing as an alternative were examined and the findings were that these other options could be achieved and used in the long term period since they were mostly attitudinal and until the attitude of individuals towards waste management were properly

tuned in doing the right thing without stringent measures and supervision, outsourcing would be the best alternative to waste management in the District.

Conclusion

In conclusion, the study has indicated that, refuse collection and management is well handled when outsourced to a private agency than it been run by the district assembly or the government. For the benefits of the people in the community to have people working effectively and the district assembly not facing the challenge of failure of people paying their refuse management fees, a private agent will be in the best position to iron out this teething problem. Also, it is essential to outsourcing to private agents since some of them have the capacity to handle this kind of endeavor with more resource at hand. Some companies like Zoomlion, has proven beyond reasonable doubt that they are more than competent to handle such contracts to help rid the city of filth. It is also conclusive from the survey that outsourcing is sustainable if adopted but the assembly needs to think out of the box and do more than they are currently doing to generate the needed revenue that will finance these ventures to meet their mandate to the people.

Recommendation

From the study it is recommended that the District Assembly should continually have an educating system for people in the districts about the importance and necessity of effective waste management. This will create more awareness and simplicity of the waste management and the Assembly will enjoy cut down of material cost whiles they retain the good work done, as the people using the services will keep using the service, be satisfied, change their

attitude and understand the wealth of paying huge sum of money for a good work to be done.

Also, the District Assembly should not lower the standard of procedures for the waste management, with more flexible payment methods as they build a commitment to the service. A team should continually be on standby to assist with any unplanned filth issues such as when it rains and floods bringing carrying waste materials on its way to a particular place. Also the team should have a system which enforces the laws about waste management and recycling, while helping to bring offenders to book.

The Assembly should not relegate its main responsibility for waste management to companies through concept of outsourcing only but should sustain this through a better partnership mechanism or monitoring role to track quality service delivery.

Since not much extensive studies have been done on waste management systems in our District Assemblies, though much literature can be obtained for cities in the world, it is recommended that further research should be done to help our local government system to better maintain the waste management issues in our country, making it a cleaner country for us.

REFERENCES

Acquah, I. (1958). Accra Survey: A social survey of the capital of Ghana, formerly called the Gold Coast, undertaken for the West African Institute of Social and Economic Research, 1953, 1956, Warwick Square, London: University of London Press

Ahafo-Ano South District Assembly (AASDA) (2010a). *District profile report of Ahafo-Ano South District Assembly*. Mankranso: District Planning Co-ordinating Unit (DPCU). http://ahafoanosouth. ghanadistricts.gov. gh/?arrow=atd&_=29&sa=6569_ retrieved on 20th April, 2014.

Ahafo-Ano South District Assembly (AASDA) (2010b). *Unpublished Ahafo-Ano South District Assembly District Medium Term Development Plan under Ghana Shared Growth and Development Agenda (GSGDA I) 2010-2013*. Mankranso: District Planning Coordinating Unit (DPCU).

Amoako, A. (2010).*Effect of rural urban migration on economic development.*

Amoah, S. T., Kosoe, E. A. (2014). Solid waste management in urban areas of Ghana: Issues and experiences from Wa.*Journal of Environment Pollution and Human Health,* 2(5), 110–117. doi: 10.12691/jephh-2-5-3

Anthony, B. (2009).*"Four types of outsourcing"*, Blog, Retrieved on 8/2/2018 from: http://www.outsourceit2philippines.com/blog/?p=157

Awortwi, N. (2004). Getting the fundamentals wrong: woes of public-private partnerships in solid waste collection in three Ghanaian cities. Public Administration and Development, 24(3), 213-224.

Awortwi N. (2003). Getting the fundamentals wrong: Governance of multiple modalities of basic services delivery in three Ghanaian Cities. PhD Thesis. ISS.

Basel Convention (2011).*Control of Transboundary Movements of Hazardous Wastes and their Disposal*, Designed and Printed by the United Nations, Geneva-GE 11-00459-July 2011-1500-UNEP/SBC/2011/4.

Batley R. and Larbi G., (2004). The changing role of government. The reform of public services in developing countries. Palgrave Macmillan, New York.

Bartone (1991). Private sector participation in municipal solid waste service: experiences in Latin America. Waste Management and Research, 9(6):495-509

Bartone and Bernstein (1993). Improving municipal solid waste management in third world countries. Resources, Conservation and Recycling, No. 8. Elsevier Science Publishers, 1993.

Baud, I.S.A. & Post J. (2002). New partnership in urban solid waste management in the developing world and their contribution to sustainable development: experiences in Accra (Ghana) and Chennai (India). In: Baud I.S.A., Dietz A.J., de Hann L.J. & Post J. (eds) Re-Aligning Government, Civil Society and the Market: New Challenges in Urban and Regional Development, Essays in Honour of G.A. de Bruijne. Amsterdam: AGIDS, 131–150.

Baud, I.S.A., Hordijk M., Grafakos S. & Post J. (2001). Quality of life and alliances in solid waste management: contributions to sustainable development. Cities, 18, 1–10.

Bel, G., and Warner M., (2008). Does privatization of solid waste and water services reduce costs? A review of empirical studies. Resources, Conservation and Recycling, 52 (2008) 1337–1348

Boadi KO, Kuitunen M (2004).*Municipal solid waste management in the Accra metropolitan area, Ghana,* Environmentalist 23:211–218

Boorsman, P.B. (1994). Privatization: Political and economic considerations in privatizations. Experiences in Africa and Asian countries, Eds M.P.Van Dijk and N.G. Schule Northolt, pp 1734. SISWO, Amsterdam.

Burns, R.B. (2000). Introduction to Research Methods. London: Sage Publications

Clegg, S., Burdon, S. and Nikolava, N. (2009). The outsourcing debate; Theories and findings, *Journal of Management and Organisation,* vol/11, issue 2,

Cointreau-Levine, (2000) Guidance Pack: Private sector participation in municipalsolidwastemanagement,‖[http://www.sanicon.net/titles/title.php3?titleno=47, (accessed 2006 February 28).

Cointreau-Levine, S. (2001). Declaration of principles for sustainable and integrated solid waste management. Accessed at: http://web.World bank.org. 17/06/07

Cointreau-Levine, S. (2004) Private sector participation in municipal solid waste management in developing countries, vol. 1: *The Formal Sector. Urban Management programme policy paper No. 13*, World Bank, Washington.

Cointreau-Levine, S. (1994). Private sector participation in municipal solid waste anagement, *Urban Management Programme Paper No 13*, World Bank, [http://www.developmentbookshop.com/detailaspx?ID=1039], (accessed 2006 February 28).

Cointreau-Levine, and Adrian Coad (2000) Guidance Pack: Private sector participation in municipal solid waste management, [http://www. sanicon.net/titles/title.php3?titleno=472], (accessed 2006 February 28).

Cointreau-Levine, S. (1999). Private sector participation in municipal solid waste management. In UNDP Public-private partnerships for the urban environment. UNDP/Yale.

Cointreau Levine, S. (1994). "Private sector participation in municipal solid waste services in developing countries". *Urban Management and the Environment 1 (13).*

Cointreau-Levine, S. (2001). Declaration of principles for sustainable and integrated solid waste management. Accessed at: http://web.world bank.org. 17/06/07.

Cointreau-Levine, S. (2005). Waste collection system in developing countries. Seminar on Solid Waste Primers and Lessons Learned from World Bank Projects. March 7, 2005, Washington.

Creswell, J.W. (2003). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (2nd Edition). Thousand Oaks, Sage

Dahal, K., and NiemeläJ..(2017) ("Cities' Greenhouse Gas Accounting Methods: A Study of Helsinki, Stockholm, and Copenhagen.")*Climate* (MDPI) 5 (2) (2017): 31. doi:10.3390/cli5020031.

Damoah A. (2011) I*mproving refuse collection in district assemblies through outsourcing to private agents: a case study of kumasi metropolitan assembly*, Kwame Nkrumah University of Science and Technology

Donahue J., D. (1989). The privatization decision. Public ends, private means. New York, NY, USA: Basic Books,

Dryczek, L. (2001) *Environmental Health Secrets*, Hanley and Belfus, Inc. p 26.

Eggert (2005). Evolving face of solid waste management, waste management and research, Environment Council, UK (2000). The Waste Guide. The Stakeholders‟ Guide to Sustainable Waste Management. London, Environment Council

Environmental Protection Agency (2002). Ghana's State of the Environment Report EPA, MES, MLGRD, (2002) Ghana Landfill Guidelines: Best Practice Environmental Guidelines. Accra, Ghana.

Eshun, B., A., (2002). Sex differences in attitude of students towards mathematics in secondary schools, *Mathematics Connection* 4:1-13

Frankel, J.R. and Wallen, N.E. (2000).*How to Design and Evaluate Research in Education.* (2nd Edition, McGraw Hill Inc., New York, U.S.A.

Furedy, C (1991). Emerging concepts of citizen participation, cooperation, and education for responsive solid waste management in Asian cities. Resource paper for the conference "Towards Improving Solid Waste Management in Asian Metropolises" Bandung, Indonesia.

Gautam, V. (2009) "Outsourcing types and its benefits." 10 Apr. 2009. EzineArticles.com. 15 Sep 2009<http://ezinearticles.com/?Outsourcing-Types-and-Its-Benefits&id=2207200>.

Ghana Environmental Protection Agency (2002) Newsletter. Vol. 5 no. 2 July-December 2002. Accra. EPA

Ghana Statistical Service, (2012). Final Report on Population and Housing Census, Accra: Sakoa Press Limited. Ghana Statistical Service.

Ghana Statistical Service (GSS) (2010). *Unpublished data from 2010 Population and Housing Census.* Accra: Ghana Statistical Service.

Ghana Statistical Service, 2002. 2000 Housing and Population Census Report. Accra, GSS.

Girling, R. (2005). Rubbish! Dirt on our hands and crisis ahead. Eden Project Books. London, Transworld Publishers Ltd.

Grimshaw and Willmott, (2002). Going privately: partnerships and outsourcing in UK public service. Public administration. 80 (3):475 – 502 GTZ/CWG (Deutsche Gesellschaft fürTechnische Zusammenarbeit/ Collaborative Working Group on Solid Waste Management in Low- and Middle-Income Countries) (2007).*Economic Aspects of the Informal Sector in Solid Waste,* Research report prepared by WASTE, Skat, and city partners (principal authors A. Scheinberg, M. Simpson, Y. Gupt and J. Anschütz), GTZ, Eschborn, Germany

Haakiran, S. (2010).*Outsourcing About KPO*, http://kpooutsourcing.com/About_KPO.html

Hoornweg, D. and Thomas, L. (1999).*What a Waste: Solid Waste Management in Asia,* World Bank, Washington, DC

ISSER. (2012). Institute of Statistical, Social and Economic Research). Ghana Social development outlook, 2012, University of Ghana. Accra.

Jackson, J. (2009).*Waste Management in Accra, Ghana: Three Main Problems Contributing to Environmental Decay*, Suite101.COM Article.

Katusiimeh, M.W., Burger, K., Mol, A. P. J. (2013). Informal waste collection and its coexistence with the formal waste sector: the case of Kampala, Uganda. Habitat International, 38(C), 1-9.

Kaseva, M.E. &Mbiligwe S.E. (2005) Appraisal of solid waste collection following private sector involvement in Dar-es-Salaam city, Tanzania. Habitat International, 29, 353–366.

Kassim, S.M. (2008) Public – Private Partnership Case of Solid Waste Collection in Dar es Salaam Tanzani. A paper Presented to a Technical Forum on Sanitation and Hygiene Towards Achieving Millennium Development Goals Moshi 15th – 18th October, 2008, Tanzania

KassimS .M. (2006). Sustainability of Private Sector in Solid Waste Collection – A Case of Dar es Salaam Tanzania PhD Thesis, Loughborough University UK, 2006

Karanja A., (2002). Solid waste management in Nairobi: actors, institutional arrangements and contribution to sustainable development. PhD Dissertation, ISS.

Kessides, C. (2005). Institutional options for the provision of infrastructure. World Bank, Washington D.

KoyachewEnkuahone Kassie (2016). The problem of solid waste management and people awareness on appropriate solid waste disposal in Bahir Dar City: Amhara region, Ethiopia, *ISABB Journal of Health and Environmental Sciences,* Vol. 3(1),pp.1-8, May, 2016 DOI: 10.5897/ISAAB-JHE2016.0026, ISSN1937-3244

Kumekpor, T.K.B., (2002).*Research Methods and Techniques of Social Research*. Accra: Sonlife Printing Press and services.

London Waste Action, (2007). Promoting Sustainable Waste Management in London. Accessed at: http://www.londonwasteaction.org/. 03/06/08

Li, B., and Akintoye, A., (2003). An overview of public private partnership, In: Akintoye, A., Bek, M., and Hardcastle C., (2003) (ed), PPPs, managing risks and opportunities, Blackwell Science, Oxford, UK.

Mbuligwe S. E., (2004). Assessment of performance of solid waste management contractors: a simple techno-social model and its application. Waste management 24 pp 739–749

Mensah-Kumah, A. (2007) *The Situation of Waste Management in Ghana*; Expository Writing.

MLGRD (2001). Government and Rural Development (MLGRD). Ghana: The Local government system. Accra: Ministry of Local Government and Rural Development.

Millennium Assessment Report, (2005). Living Beyond Our Means: Natural Assets and Human Well-being (Statement of the MA Board). Accessed at: http://www.millenniumassessment.org/ en/Reports.aspx. 02/11/08

Moosa, I. (2007). "Operational Risk: A Survey", Financial Markets, Institutions & Instruments, Vol. 16, No. 4, pp. 167-200

Mwangi, S. W. (2003). Challenges of urban environmental governance. Participation and partnerships in NuKuru Municipality, Kenya. PhD Thesis Amsterdam University.

Obiri-Opareh. N. (2002). Institutional arrangements and stakeholders "perspectives of solid Waste management in Accra". Report to NIRP.

Obiri-Opareh, N. and Post, J. (2002) „Quality Assessment of Public and Private Modes of Solid Waste Collection in Accra", Habitat International 26 (1): 95-112.

Obirih-Opareh, N. (2002). Solid waste collection in Accra. The impact of decentralisation and privatisation on the performance of service delivery. PhD dissertation.

Obirih-Opareh, N., Eran Razin, Sjaak van der Geest and Johan Post (2004). The effects of decentralization and privatization on urban environmental management: waste management in the Accra Metropolitan Area. NIRP Research for Policy Series 22

Oduro-Kwarteng S and Van Dijk MP (2013). The effect of increased private sector involvement in solid waste collection in five cities in Ghana. In: Waste management & research 31(10): 810–93

Okrant, M. (2006). The New Face of Waste, *Today's Facility Manager Journal.*

Onibokum A. G., Kumuyi A. J. (1999). Governance and Waste Management in Africa. In Adepoju G. Onibokun (ed.) Managing the Monster; Urban Waste and Governance in Africa, International Development Research Center Canada.

Oteng-Ababio, M. (2010). Private sector involvement in solid waste management in Ghana: the case of the Greater Accra Metropolitan Area (GAMA). Waste Management and Research, 28, 322-329.

OtengAbabio, M. (2011). Beyond technical details: The stalled Kwabenya Engineered Sanitary Landfill Project in Accra, Ghana. Danish Journal of Geography, 111(2).

Oteng-Ababio, M., Melara Arguello, J. E., Gabbay, O. (2012). Solid waste management in African cities: Sorting the facts from the fads in Accra, Ghana, Habitat International, pp 19http://dx.doi.org/10.1016/j. habitatint.2012.10.010.

Oteng-Ababio, M. (2013). Unscripted (in) justice: unequal exposure to ecological hazards in Metropolitan Accra. Journal of Environment and Planning A, 45. doi: 10.1068/a45256.

Oteng-Ababio, M. (2014). Rethinking waste as a resource: insights from a low-income community in Accra, Ghana, City, Territory and Architecture 1:10.

Owusu-Sekyere, E. (2014). Scavenging for Wealth or Death? Exploring The Health Risk Associated with Waste Scavenging in Kumasi, Ghana Journal of Geography Vol. 6; Pages 63 – 80

Owusu Sekyere, E., OssmanIssaka K and Abdul Yahaya K. (2013). Waste and Wealth Linkages in the Kumasi Metropolitan Area: International Journal of current research.

Padovani, E. and Young, D. W. (2006) Managing High Risk Outsourcing in Municipalities

Post, J. (1999), The problems and potentials of privatizing solid waste management in Kumasi, Ghana, Habitat International, 23(2), pp.201-216.

Post, J. (2002), New partnerships in the collection of urban solid waste in developing world. In: Baud I.S.A., Post, J. &Furedy, C. (eds) Urban Management, Markets and Sustainable Development, Urban Solid

Waste Management in Hyderabad and Nairobi. London: Earthscan Publication, 33–51.

Post, J., Broekema, J., Obirih-Opareh, N. (2003). Trial and error inprivatisation: experiences in urban solid waste collection in Accra and Hyderabad. Urban Studies 40: 837–854.

Prasad N., (1998). Privatization Results: Private Sector Participation in Water Services after 15 Years. Development Policy Review, 2006, 24 (6): 669-692

Roth, G. (1987). The private provision of public services in developing countries. Oxford University Press, New York.

Savas E. S. (2000). On Equity in Providing Public Services, Management Science, Vol. 24, No. 8, pp. 800-808

Sarker, B.C., Sarker, S.K., Islam, M.S. and Sharmin, S., (2012). Public awareness about disposal of solid waste and its impact: A study in Tangail Pourashava, Tangail, *Journal of Environmental Science & Natural Resources*, 5(2): 239 – 244

Saunders, M. N. K., Lewis, P., and Thornhill, A. (2007). *Research Methods for Business Students*, London: Financial Times Pitman Publishing.

Scheinberg, A. (2003). 'The proof of the pudding: Urban recycling in North America as a process of ecological modernisation', *Environmental Politics*, vol 12, no 4, winter, pp49–75

Seelan, G. (2009) *Benefits of Waste Management*, Retrieved on 8/02/2018 from:http://ezinearticles.com/?Benefitsof-Waste-Management&id=2458302

Strasser, S. (1999) *Waste and Want: A Social History of Trash,* Henry Holt and Company, LLC, New York, NY

Sumaryan (2009) *The Importance Of Waste Management*, Article Alley

Suraiya Yasmin, Md Imranur Rahman (2017) A Review of Solid Waste Management Practice in Dhaka City, Bangladesh, *International Journal of Environmental Protection and Policy*, Vol. 5, No. 2, 2017, pp. 19-25. doi: 10.11648/j.ijepp.20170502.11

Shafiul, A.A. and Mansoor, A. (2003). *"Partnerships for solid waste management in developing countries: Linking theories to realities"* Institute of Development Engineering, Water and Development Centre (WEDC), Loughborough University, U.K.

UN-Habitat (2010) *Solid Waste Management in World's Cities,* United Nations Human Settlements Programme, Earthscan Publications, London

UN-HABITAT (2010). Global Report on Human Settlement. 2010: Planning Sustainable Cities. UK Earthscan Publisher.

UN-Habitat (2009) *State of the World's Cities 2008/2009: Harmonious Cities,* Earthscan Publications, London

United Nations Development Programme, (1999). Public Private Partnerships for the Urban Environment: Options and Issues. UNDP. http://www. undp.org/pppue, 05/01/2006.

van Dijk M. P. Van (2006). Managing cities in developing countries. Theory and practice of urban management. Edward Elgar, UK.

Wankhade, M. (2009).*Types of Outsourcing*, Retrived on the 9/02/2018 from: http://www.outsourcingweblog.com/50226711/types_of_outsourcing.php

WCED, 1987. Our Common Future (The Brundtland Report) – Report of the 1987 World Commission on Environment and Development. Oxford, Oxford University Press

Wilson, D.C, Velis, C., Cheeseman, C. (2006). Role of informal sector recycling in wastemanagement in developing countries. Habitat International 30: 797–808.

World Bank (2014).*WHAT A WASTE A Global Review of Solid Waste Management*

World Bank (undated) *Urban Development, Urban Solid Waste Management,* http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTURBANDEVELOPMENT/EXTUSWM/0,,menuPK:463847~pagePK:149018~piPK:149093~theSitePK:463841,00.html

World Bank (1997). World development report 1997: The state in the changing world. Washington, D.C: World Bank.

World Bank 1999: Decision Makers' Guide to Municipal Solid Waste Incineration. Washington D.C

World Bank (2001). What a Waste! Solid Waste Management in Asia. Accessed at: http://www.bvsde.paho.org/bvsacd/cd48/wasteasia.pdf.

World Bank (2002). World Bank Urban Solid Waste Management: Private Sector Involvement. World Bank. http://www.worldbank.org/urban /uswm/private sector.html, 04/08/05.

World Bank, (2002). Sustainable Sanitation. [http://www.NETSSAF.net], (accessed 2010 March 11).

World Bank (2004). World Bank Implementation Completion Report. UESPI&II. Accra, Ghana.

Zurbrugg, C., (1999). Solid Waste Management in Developing Countries. SANDEC / EAWAG

APPENDICES

QUESTIONNAIRE FOR IMPROVING REFUSE COLLECTION IN DISTRICT ASSEMBLIES THROUGH PRIVATE CONTRACTS: A CASE STUDY OF AHAFO ANO SOUTH DISTRICT ASSEMBLY

All respondents are assured of absolute confidentiality in this Academic Research.

Please tick appropriate responses or fill in the spaces provided.

APPENDIX A: Interview Guide for District Director of Zoomlion Company Limited

Section I: Respondents' Background

1. Age of Respondents ……..

2. Sex

a. Male b. Female

3. Status

a. Head/Director b. Subordinate

4. Position

a. Management b. Non-Management

5. Number of Years Worked in the District ……

6. Number of Years Worked ……

7. Level of Education

a. None b. Middle School c. Secondary School d. Diploma

e. Degree f. Masters

Section 2: Refuse Collection

8. What is the current model for waste management in the District?

   a. Public [ ] b. Private [ ] c. Both (Public & Private) [ ]

9. Who does the collection?

   ……

10. Who pays for the collection?

    .....

11. What is the volume of waste produced in the district in a year?

    ……

12. How much is spent on waste management in a year?

    ……

Section 3: Challenges of Refuse Collection

13. Do you think it is prudent for the AASDA to outsource refuse collection?

    a. Yes [ ] b. No [ ]

14. Has the engagement with the private firm been beneficial to the AASDA?

    a. Yes [ ] b. No [ ]

15. Is the Assembly able to meet its financial obligations to the private firm as stated in the contract agreement? a. Yes [ ] b. No [ ]

16. Has the Assembly been prompt in their payments to the private firm for the services they have been contracted to provide? a. Yes [ ] b. No [ ]

17. In your opinion how sustainable is this strategy of engaging private firms to aid in refuse collection projects in the AASDA?

    ……

    ……

APPENDIX B

INTERVIEW GUIDE FOR DISTRICT DIRECTOR OF ENVIRONMENTAL HEALTH UNIT

1. Age of Respondents ……..
2. Sex

a. Male b. Female

3. Status

a. Head/Director b. Subordinate

4. Position

a. Management b. Non-Management

5. Number of Years Worked in the District ……
6. Number of Years Worked ……
7. Level of Education

a. None b. Middle School c. Secondary School d. Diploma

e. Degree f. Masters

Section 2: Refuse Collection

8. What is the current model for waste management in the District?

a. Public [ ] b. Private [ ] c. Both (Public & Private) [ ]

9. Who does the collection?

……

10. Who pays for the collection?

.....

11. What is the volume of waste produced in the district in a year?

……

12. How much is spent on waste management in a year?

……

Section 3: Challenges of Refuse Collection

13. Do you think it is prudent for the AASDA to outsource refuse collection?

    a. Yes [ ] b. No [ ]

14. Has the engagement with the private firm been beneficial to the AASDA?

    a. Yes [ ] b. No [ ]

15. Is the Assembly able to meet its financial obligations to the private firm as stated in the contract agreement? a. Yes [ ] b. No [ ]

16. Has the Assembly been prompt in their payments to the private firm for the services they have been contracted to provide? a. Yes [ ] b. No [ ]

17. In your opinion how sustainable is this strategy of engaging private firms to aid in refuse collection projects in the AASDA?

    ……

    ……

APPENDIX C

QUESTIONNAIRE FOR HOUSEHOLDS

Section 1: Respondents' Background

1. Age of Respondents ……..

2. Sex

a. Male b. Female

3. Status

a. Head/Director b. Subordinate

4. Position

a. Management b. Non-Management

5. Number of Years Worked in the District ……

6. Number of Years Worked ……

7. Level of Education

a. None b. Middle School c. Secondary School d. Diploma

e. Degree f. Masters

Section 2: Refuse Collection

8. How do you dispose of refuse in the house?
   a. Collection bins [ ] b. Burying [ ] c. Burning [ ]
   d. Backyard disposal [ ] e. Other (Specify)
   ……

9. Are you willing pay a fee for the collection of refuse?
   a. Yes [ ] b. No [ ]

10. If Yes, How should the payment be done?
    a. Pay-As-You Dump (Daily) [ ] b. Office Collection (Monthly) [ ]
    c. House-To-House Collection (Monthly) [ ] d. Others
    (Specify)……...

11. In your opinion, what is/are cause(s) of poor sanitation in the District?
    a. Attitudinal [ ] b. Cultural [ ]
    c. Poor Sanitation Education [ ] d. Low Assembly Commitment [ ]
    e. Other
    (Specify)……
    ….

12. Do you believe littering the streets of the District is due to the absence of dustbins?
    a. Yes [ ] b. No [ ]

13. What do you think is the problem militating against the provision of dustbins in the District to collect refuse littered on the streets?
    a. Financial Constraints [ ]
    b. Lack of Goodwill of the AASDA to provide Dustbins [ ]
    c. Dustbins are not necessary because people will still liter anyway [ ]
    d. Other (Specify)…….
14. Should the Assembly rather consider stringent waste management measures that will curb or minimize littering in the streets of the District?
    a. Yes [ ] b. No [ ]
15. Who do you think has the responsibility of keeping the District clean?
    a. Local Government (Assembly) [ ] b. Individuals (Households) [ ]
    c. Both (Assembly & Households) [ ] d. Other (Specify)……
16. What do you think is the present approach used by the AASDA in managing waste in the District?
    a. Outsourcing/Privatisation [ ] b. Internal Management [ ]
    c. Other (Specify)……
17. Do you think the Assembly's approach to waste management is good enough?
    a. Yes [ ] b. No [ ]
18. Do you belief Outsourcing is the best option in dealing with waste management in the AASDA? a. Yes [ ] b. No [ ]
19. What should be the level of the Assembly's engagement in Outsourcing of Refuse Collection?
    a. Very High [ ] b. High [ ]
    c. Moderate [ ] d. Low [ ]
    e. Very Low [ ]
20. Is Outsourcing as a strategy for improving refuse collection in the AASDA sustainable?
    a. Strongly Agree [ ] b. Agree [ ]
    c. Neutral [ ] d. Disagree [ ]
    e. Strongly Disagree [ ]
21. The Assembly is already involved in Outsourcing certain type of waste collection to private agents: in your opinion have there been some improvement(s) in the sanitation situation in the District so far? a. Yes [ ]
    b. No [ ]
22. Whom do you think should pay for sanitation maintenance in the District?
    a. Government (Assembly) [ ] b. Individuals/Households [ ]
    c. Both (Assembly & Households) [ ] d. Other (Specify)……

23. Which of the following measures do you think are more suitable for managing waste in the District?
    a. Reactive Measures (Outsourcing) [ ]
    b. Recycling [ ]
    c. Deterrent Measures (Fines/Prosecutions/Sanctions)
    [ ]
    d. Proactive Measures (Discouraging Inorganic Waste)
    [ ]
    e. Other (Specify)……