UNIVERSITY OF CAPE COAST

PUBLIC PRIVATE PARTNERSHIP IN SOLID WASTE MANAGEMENT IN SUNYANI MUNICIPALITY, GHANA

BY

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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 in the University or elsewhere.

Candidate's Signature ……..

Name:…….. Date……

Supervisors' declaration

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

Principal Supervisor's Signature…….

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Co-Supervisor's Signature…….

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ABSTRACT

Solid waste managementis one of the major issues facing most countries globally. Solid waste was already a problem long before water and air pollution issues attracted public attention. Solid waste managementrepresents a major economic and environmental issue throughout the world. Governments have adopted public private partnership (PPP) as a solution for solid waste management because of the herculean nature of the waste management task in terms of finance and technical expertise.The study focused on public private partnership in solid waste management in the Sunyani Municipality. The main objective of the study was to interrogate the institutional arrangement put in place for public private partnership in the Sunyani Municipality. To achieve the objective the study adopted the qualitative approach and interviewed 32 respondents using semi-structured interviewing and non-participant observation. Data collected were analysed and presented under themes. The study found that the institutional arrangement for PPP in the Sunyani Municipality was weak. However, it was established that solid waste management in the municipality was guided by national laws on environmental health and bye-laws of the Assembly. With respect to resources in the implementation of PPP, the study found that, even though the private partner had some resources, they were not enough for the proper management of solid waste in the Sunyani Municipality under a PPP arrangement. The study recommends the strengthening of institutional arrangement such as monitoring, sanctioning of poor performance and the formulation of bye-laws by the Assembly to guide the PPP arrangement.

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DEDICATION

To my late parents, Mr Richard Ohene-Siaw and Madam Janet Agyapomah.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AMA	Accra Metropolitan Assembly
BOO	Build-Operate-Own
BOT	Build-Operate-Transfer
BOOT	Build-Operate-Own-Transfer
CBO	Community Based Organisation
CCWL	City and Country Waste Limited
CWSP	Community Water and Sanitation Policy
DBFO	Design-Build-Finance-Operate
DBO	Design-Build-Operate
EPA	Environmental Protection Agency
IMF	International Monetary Fund
ISWM	Integrated Solid Waste Management
KMA	Kumasi Metropolitan Assembly
LI	Legislative Instrument
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MOFEP	Ministry of Finance and Economic Planning
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
NESP	National Environmental Sanitation Policy
NGO	Non-Governmental Organisation
PHMD	Public Health Management Directorate

PNDC	Provisional National Defence Council
PPP	Public Private Partnership
SAP	Structural Adjustment Programme
SDG	Sustainable Development Goals
SMA	Sunyani Municipal Assembly
STWSP	Small Towns Water and Sanitation Policy
SWM	Solid Waste Management
UK	United Kingdom
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
USEPA	United States Environmental Protection Agency
WM	Waste Management
WMD	Waste Management Department
ZL	Zoomlion Ghana Limited

CHAPTER ONE

INTRODUCTION

Background to the Study

Solid waste disposal is one of the major issues faced by most countries in the world (Majani, 2000). Chandrappa (2012) admits that solid waste was already a problem long before water and air pollution issues attracted public attention. The management of solid waste represents a major economic and environmental issue throughout the world. It is estimated that in 2006, the total volume of Municipal Solid Waste (MSW) generated globally reached 2.02 billion metric tons, representing a 7 percent annual increase since 2003. However, global averages are broad estimates only, as rates vary considerably by region, country, city, and even within cities (Schubeler, Wehrle& Christen, 2006).

Despite major efforts made by some countries in recent decades to improve solid waste management practices, most municipalities in developing countries still face major challenges in properly handling the increasing volumes of waste generated by residents (Kaseva&Mbuligwe, 2003; Kitbuah, Asase, Yusif, Mensah& Fischer, 2009). According to Zerbock (2003), metropolises in developing countries spend 20 – 50 percent of their available budget on solid waste management.Zerbock (2003) argued that despite the fact that developing countries do spend about 20 to 50 percent of metropolitan revenues on solid waste management, they are unable to keep pace with the scope of the problem. Between 40 and 70 percent of all the urban solid waste remain uncollected and less than 50 percent of the population is served (UNEP, 2014).

Beyond urbanisation and increasing population, a key concern in the management of solid waste has been unavailability of dumping grounds (Kaosol, 2009). Most local authorities find it very difficult to locate permanent grounds where waste can be dumped. The issue of availability of dumping grounds for solid waste disposal has become a common problem faced by all developing countries.

Abul (2010) explained that the effects of ineffective waste collection and poor waste management is countless. Boadi and Markku (2005) revealed that high incidence of diarrhea in children under six years is related to food contamination by flies which had fed on waste. Other health impacts of poor solid waste management include respiratory symptoms; irritation of the skin, nose, and eyes; gastrointestinal problems; psychological disorders; and allergies. Cholera outbreak and malaria epidemic are also products of poor solid waste management (Cointreau-Levine, 1994).

In the views of Buse, and Walt (2002 cited in Mutandwa, 2015), the public choice theory expects government to institute policies that help to provide public services that maximise the wellbeing of the citizenry. The failure of government in this direction will lead to many undesirable outcomes including poor management of waste (Anazodo, Okoye&Ezenwile, 2012). The public choice theory is attached to the market notion of trading and competition. The agencies in charge of public service delivery are vital in the management of waste in the state or local community. The agencies are responsible for the formulation of

goals, and priorities, determination of roles and jurisdiction and legal and regulatory framework (Schubeler et al., 1996).

Until the late 1980s, solid waste management policies and programmes in Ghanaian cities were formulated and implemented by government agencies without significant private participation (Dinye, 2006). There are many problems in the overall management schemes for solid waste policies. The most often encountered problem is the poorly decentralised responsibility for various activities of solid waste management in the Municipalities. Where there is a poor definition of roles to be performed by the respective agencies, efficient service delivery is compromised because individuals, agencies and the citizenry require clear roles in the management of solid waste. This has not been the case especially in most developing nations including Ghana (UNEP, 2000). For instance, in the past, many cities and local governments in Ghana adopted a management system whereby waste collection was administered under the department of health.One central concern regarding the challenges faced in solid waste management has been the technical and financial deficiencies. Managing solid waste has been found to be very costly which most developing nations with outstretched budgets are unable to bear. According to UNEP (2000), the presence of a large informal sector that remains un-integrated into the formal waste management system coupled with inadequate mechanisation owing to the poor financial health of the local bodies has made the management and delivery of a well-structured Municipal Solid Waste (MSW) system a difficult task.

Public private partnership (PPP) as a tool for the delivery of public service is a product of Neoliberalism advanced by the International Financial Institutions. It is worthy

to note that the International Financial Institutions pushed the need for the involvement of the private entities in the provision of public services because of efficiency.Since 1983, private sector participation in public utilities and service delivery has vigorously been advocated as a means of attaining greater efficiency in their production and distribution in developing nations (Gutierrez, 2001) by the International Finance Institutions and other development partners. Da Zhu et al. (2008) argue that institutional framework is important for public private partnership due to the complexity of the partnership and the involvement of many actors. For example, institutional setting, governance and regulatory structures, resources, participation, monitoring of performance and market linkages are key to the successful management of solid waste under PPP arrangements (Schubeler et al. 1996).

Hartman (1995) noted that the provision of solid waste management via the private sector promotes high efficiency, equity and accountability to users and financiers. In that, the private sector is motivated by the profit it makes in carrying out this mandate unlike the state which carries out such mandate as part of its welfare policy. Neoliberal theorists argue that limited government intervention in the economy and the superior economic performance of the private sector lead to competition and efficiency (Nellis&Kikeri, 1989 cited in Ayee, 1998). In the past, private sector involvement in waste management was in the form of short term contracts managed by the Assemblies (Asare&Frimpong, 2013).

Solid waste management was administered under the Department of Health (Ministry of Local Government, 1999) before private sector participation.Asare and Frimpong (2013) noted that, today the engagement of the

private sector in managing waste has moved from short-term contracts to long-term partnerships. According to Asare and Frimpong (2013), although private sector participation in sanitation services is not an entirely new idea, it gained currency and widespread application in Ghana in pursuance of the Structural Adjustment Programme (SAP) in the 1980s for continued Bretton Woods Institutions' financial support.Proponents of the neoliberal theory of development claim that, the private sector involvement in solid waste management brings improvement and efficiency. This is because they bring resources to the partnership. Notwithstanding, Hartman (1995) argues that the issue of partnership between public and private entities is critical in the management of solid waste. Therefore, it is suggested that, for PPPs to be successful, there must be strong institutional arrangements where roles of various actors are spelt out.

The importance of PPP to Ghana led to the formulation of a National Policy on public private partnerships in 2011 (MOFEP, 2011). Ghana continues to use PPP in service delivery because the idea of public private partnership continues to be promoted by international agencies and donors as the most effective vehicle for service delivery.However, Onyanta (2012) states that there is growing concern regarding the inclusion of private entities amongst many African nations. According to Hodge and Grave (2011) evaluations of PPP in service delivery so far clearly point to contradictory assessments of their performance. Onyanta (2012) is of the view that private sector participation in service delivery remains just an idea because it has not yielded any positive results as expected.

It is argued that involving private enterprises in the provision of solid waste management services should not be seen as a panacea or a cure for all problems even though it has often resulted in very significant improvements in many situations (Coad, 2005). Coad (2005) explained that, experiences show that if a local government body has not been able to provide satisfactory solid waste management service using its own resources; it will not be able to engage a private enterprise to provide the service in a satisfactory way. According to him (Coad, 2005) involving the private sector in service delivery results in increased corruption and misappropriation of public funds where institutional arrangements for waste management are weak. Despite the perception that the private sector is the engine of growth and that the involvement of the private sector in the provision of waste management services promote efficiency, PPPs in Ghana before Zoomlion Ghana Limited failed (Awortwi, 2004).

Awortwi (2004) observed that previous PPPs failure to resolve Ghana's sanitation problem was attributable to the lack of strategic communication (participation). Being a top-down in approach, neither the local people nor their representatives, that is, assembly members were involved in the waste management contractual arrangements and implementation. For example, waste collection contract to City and Country Waste Limited (CCWL)in the Accra Metropolis was undertaken without any consultation with the Waste Management Department (WMD) ofthe Accra Metropolitan Assembly (AMA). However, Coad(2005) suggested that most arguments are in favour of private sector participation because of positive experience, some because of their political

standpoint, and some out of desperation nurtured by the failure of the public sector to deliver public service.

The precondition for a successful implementation of public private partnershipdepends largely on institutional setting, monitoring, governance and regulatory structures and market linkages. Da Zhu et al. (2008), argues that institutional framework is important for Solid Waste Management (SWM) due to the complexity of the partnership and the involvement of many actors. Successful PPPs therefore depend on strong institutional arrangements where roles of various actors are spelt out (Hartman, 1995).

From the discussions above, though the public sector failed in the provision of solid waste services, municipalities still face challenges in managing waste despite the involvement of the private sector. The complexity in providing the required level of service commensurate with the increasing demand for sanitation service is characteristically attributed to institutional arrangements at the various levels of governance: national and local levels, as well as the private sector (Amoah&Kosoe, 2014). Private sector involvement does not, in itself, guarantee effectiveness and low costs, especially in serving the urban poor (Schubeler et al, 1996). For efficiency to occur, monitoring, reporting and sanctioning in service delivery, whether by the bureau or through the market or through collaborative action cannot be compromised (Awortwi, 2004). This is underlined in the Principal Agent Theory.The challenges associated with service delivery by both the public and private sector bring to our attention institutional arrangements necessary for effective PPP in solid waste management.

From the perspective of institutional theory, the relations within a human service sector are determined by rules and regulations rather than by market exchanges (Hasenfeld&Garrow, 2009). Da Zhu et al. (2008) argue that institutional framework is important for solid waste management due to the complexity of the waste management (WM) system and the involvement of many actors. That is, if institutional arrangements are not looked at thoroughly, the successful management of solid waste remains a besetting task. The institutional setting, governance and regulatory structures and monitoring of performance are crucial for the success of solid waste management. However, in most cities and villages, poor institutional and regulatory frameworks have characterised waste management efforts (Da Zhu et al., 2008).

Despite the increasing focus on Municipal Solid Waste Management (MSWM) by state and local governments, providing affordable and sustainable waste management services is among the largest municipal challenges in Ghana. In Ghana, the Metropolitan/Municipal/District Assemblies (MMDAs) are responsible for various operational aspects of waste management under the supervision of the Ministry of Local Government andRural Development.This includes the collection, transportation, treatment and final disposal of waste as stipulated in the Local Government Act, 1993 (Act 462). According to the Act, assemblies should initiate programmes for the development of basic infrastructure and provide municipal works and services in the district; be responsible for the development, improvement and management of human settlements and the environments in the districts (Ministry of Local Government and Rural

Development, MLGRD, 2004). Therefore, the assemblies must establish, install, build, maintain and control public latrines, lavatories, urinals and wash places and also manage waste in communities properly. The various Waste Management and Environmental Health and Sanitation Departments at the Metropolitan, Municipal and District Assemblies (MMDAs) are in charge of the final collection and disposal of solid waste. However, regulatory authority is vested in the Environmental Protection Agency (EPA), which is entrusted with the responsibility for setting environmental quality standards and ensuring their enforcement (MLGRD, 2004).

Statement of the Problem

Solid waste generation in the Sunyani Municipal Assembly (SMA) is estimated at a rate of 0.38 kilograms per person per day (SMA, 2006). The Assembly has contracted Zoomlion Ghana Limited, a private waste management company to collect, dispose and manage waste in the municipal Area. Despite the fact that Sunyani Municipal is adjudged the cleanest city in Ghana, managing solid waste holistically has been the main challenge. According to Anane (2012) solid waste in the city is burnt at final disposal site and little is recycled. Anane (2012) admits that the sustenance of such approaches in managing waste in the city by the local authorities is a challenge. For example, Anane (2012) revealed that, Sunyani has one final disposal site only about 1000 meters from residential buildings. The final disposal site is a non-engineered site with limited supervision. Due to ashes in the garbage, there are numerous fires in the waste with smoke heading towards the nearest and largest neighbour. This situation is also a

challenge to the effectiveness of PPP as a tool in managing solid waste. One wonders whether or not there are effective systems and structures put in place to address issues of solid waste management in the municipality

In Ghana, the Local Government Law (1988), PNDC Law 207 and the Local Government Act 262 (1993) empower the Metropolitan, Municipal and District Assemblies (MMDAs) to undertake waste management and enact bye-laws to regulate the effective management of waste in their respective jurisdictions. Despite the mandate given to the MMDAs to enact bye-laws to deal with waste management there are still huge heaps of garbage and refuse, as well as the unsanitary conditions in Ghanaian cities are an indication that the responsible public sector bodies have not lived up to the task (Dinye, 2006). These heaps of waste undermine people's right to a safe life. The garbage on streets facilitate the spread of diseases like malaria, cholera, making a significant dent on a country's prospects of achieving the Sustainable Development Goals (SDGs) three and six (UNEP, 2014).

The involvement of the private sector which was pushed by the World Bank and the International Monetary Fund as part of the conditionalities in the Structural Adjustment Programme started as a short term contracts (Asare&Frimong, 2013). However, in recent times in Ghana, the engagement of private sector in waste management has increased from short-term contracts to long-term partnerships. In fact, the cooperation and collaboration between private and public sector actors who share certain core principles are expected to have a long-term solution to the problem of solid waste management (Grossman, 2012).

However, despite the implementation of PPP in the management and delivery of solid waste services, Ghana is still confronted with waste management problems (Asare&Frimpong, 2013)which have led to the institution of National Sanitation Day by government**.**

In an attempt to understand the issues, Da Zhu et al. (2008) argued that institutional and regulatory frameworks are vital for the successful implementation of PPPs. Thus the evolution of the MSW sector in Ghana and the potential role municipal assemblies could play in PPPs, given the local institutional, legal framework and market dynamics, demand closer attention because the private sector involvement in solid waste management has not produced the results anticipated.

Sunyani is adjudged the cleanest city in Ghana but collection and disposal of waste, managing the disposal site and the solid waste have been the main challenge. Anane (2012) stated that solid waste in the city is burnt at final disposal site and little is recycled in the city which is unhelpful for the health of the citizens. One would expect the private entities involved in solid waste management in the municipality to have fashioned out more sustainable ways of addressing the issues. However, this has not been the case thus, challenging the institutional arrangements that exist for the implementation of PPP in solid waste management.

The situation at the Sunyani Municipality compels researchers to be curious about how the city could be viewed as the cleanest in Ghana given the obvious difficulties associated with managing solid waste. There is therefore the

need to interrogate the institutional arrangements put in place to manage solid waste. That is to examine the monitoring, sanctioning, competition, governance and regulatory structures and market linkages put in place by the assembly to ensure efficient solid waste management under the PPP arrangement.

Objectives of the Study

The main objective of the study was to interrogate the institutional arrangements put in place for the implementation of PPP as a strategy for solid waste management in the Sunyani Municipality.

Specifically, the research sought to:

1. Examine the structure of organisations involved in PPP in solid waste management in the Sunyani Municipality;
2. Evaluate the contracting, monitoring and sanctioning systems for PPP in solid waste management in the Sunyani Municipality;
3. Investigate the relationship between actors of PPP in solid waste management;

Research Questions

1. What is the structure of organisations involved in PPP in solid waste management in the Sunyani Municipal Assembly?
2. How does the systems for contracting, monitoring and sanctioning of performance insolid waste management work in the Sunyani Municipality?
3. What relationship exists between the public and private actors in solid waste managementin the Sunyani Municipality?

Significance of the Study

Sanitation is a major threat to the livelihood of individuals and countries in the world. Most cities in Ghana face challenges in solid waste management for many reasons. This has led to the institution of National Sanitation Day by the government. Notwithstanding the Sunyani Municipal Assembly emerging as the cleanest city in Ghana since independence, the municipality still faces issues of solid waste management. The study seeks to interrogate the various institutional arrangements put in place for the successful implementation of PPP as a strategy for solid waste management in the Municipality. The findings will help us to replicate good practices in other regions to ensure a clean environment by government and its private partners. Again, the results of the research may help to improve the quality of service delivery in solid waste collection. It will also help to establish whether PPP is a good strategy for solid waste management or otherwise for the Sunyani Municipality and Ghana at large. The study investigates the effectiveness of PPP in service contracts and recommends criteria for ensuring quality and efficiency in solid waste collection and management in Ghana. Finally, the study examines how the findings would inform decisions pertaining to effective solid waste management practices in Ghana.

Scope of the Study

Public private partnership in solid waste management comes in various forms. These are utility restructuring, corporatisation and decentralisation, civil works and service, contractsmanagement and operating agreements, leases / affermage, concessions, build-operate-transfer (BOT), design-build-operate (DBO), joint ventures and partial divestiture of public assets, full divestiture and contract plans and performance contracts. However, the study is focusing on using PPP as a tool in managing solid waste in the Sunyani Municipal Assembly. Attention will be paid to issues including institutional setting, monitoring, and regulatory structures and market linkages**.** The scope of the study will focus on the conceptual issues of PPP in solid waste management.

Organisation of the Study

The study consists of five chapters. Chapter one presents the introduction, whichfocuses on the background, statement of the problem, study objectives, research questions, scope of the study, significance of the study and organisationof the study. Chapter two deals with review of related literature on theories and concepts on PPP, waste, solid waste, solid wastemanagement and the conceptual framework. Chapter three covers the study methodology. It involves the study area, study design, sources of data, target population, sample size, sampling procedure, instrumentation and limitations to the study. The fourth chapter presents the results and discusses thedata collected. Chapter five discusses the summary, conclusions and recommendations of the study as well as areas for further study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter reviews relevant literature on the issues in this study. It looks at the theories, definition of key concepts and empirical review as well as the conceptual framework for the study. The neo-liberal theory (public choice theory), and the institutional theory are examined. Concepts including waste, solid waste, solid waste management, PPP and models of PPP are looked at. Other issues such as significance of PPP, conditions for successful PPP, history of PPP in Ghana, actors and their relationship in PPP, the role of various actors and the role of municipalities in the PPP arealso considered.

Theoretical Framework

Essentially, neo-liberal theory is a revival and reformulation of classical liberalism (Roskin, Cord, Medeiros & Jones, 2013). Proponents of classical liberal theory including Adam Smith, postulated that government supervision of, and interference in the economy with monopolies, subsidies, tariffs, and other restrains impede competition, efficiency, growth, and prosperity (Roskin et. al, 2013). The neo-liberal theory perceives the private sector to be superior to the public sector in the delivery of services. Neo-liberal theorists posit that limited government intervention in the economy and the superior economic performance of the private sector lead to competition and efficiency (Ayee, 1998).

Harvey (2005) sees the neoliberal theory as a theory of political and economic practices that proposes that human well-being can best be advanced by

liberating individual entrepreneurial freedoms and skills within an institutional framework characterised by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence, police and legal structures and functions required to secure private property rights and to guarantee, by force if need be, the proper functioning of markets. Again, if markets do not exist in areas such as water, education, health care, social security or environment, then they must be created by state action if necessary. But beyond these tasks the state should not venture. State interventions in markets, once created, must be kept to a bare minimum because, according to the theory, the state cannot possibly possess enough information to second guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions for their own benefit (Harvey, 2005).

In effect, governments must let the economy alone, that is, free competition unsupervised by government (laissez faire). In this case, efficient producers will prosper, inefficient ones will die out. Their goal is that the public will benefit from the competition offered by the players in the private sector (Asare&Frimpong, 2013). The advocates of the theory contend that in the implementation of business-friendly policies, fewer government restrictions and private initiatives will ultimately improve the welfare of the entire society (Asare&Frimpong, 2013).

The neo-liberal theory continues that, in general, governments lack capacity to run large industrial and commercial enterprises. Hence, except for core missions of income distribution, public-good infrastructure, administration of justice and a few others, governments should shrink and privatise (Roskin et. al, 2013). Neoliberal standard goal, therefore, is to roll back the frontiers of the state, while its central pillars are the market and the individual (Heywood, 1997 cited in Asare&Frimpong, 2013). The neoliberal agenda advocates for the market and the individual because it sees public officials as rent seekers (Asare&Frimpong, 2013). This is underlined in the public choice theory which describes the management of public services.

The Public Choice Theory

Public choice theory has been used to describe management of public services. Like the neoliberal theory, public choice theory advocates a shift from the public to the private sector in the management of public services to achieve efficiency through the competition the market offers.Both the neoliberal theory and the public choice theory advocate for a minimal state intervention because of the rent seeking attitude of politicians (Buchanan &Tullock, 1977). The study adopted the public choice theory to explain why developing nations have turned their attention to the private sector (public private partnership) for the management and provision of public services. Buchanan and Tullock (1977), as cited in Asare and Frimpong (2013), argued that governments need to be constrained by strict rules while property rights and market transactions are upheld. On the basis of individual preferences, market solutions should be

employed wherever possible (Hepple, 1989 cited in Asare&Frimpong, 2013). Politicians and civil servants are capable of setting agenda, manipulating budgets and expanding their own public sector empires (Hepple, 1989 cited in Asare&Frimpong, 2013). The private sector is more dynamic, resilient, creative, innovative and vibrant than the public one (Mutandwa, 2015). Hence, the introduction of market mechanisms will substantially enhance the supply of public services.

The public choice theory regards the existing democratic arrangements as very poor predictors of citizens' preferences such as good government policies. Thus, the theory proposes the application of the market notions in public management. This theory is attached to the market notion of trading and competition. In the views of Green and Shapiro (1994), public choice theory is often used to explain how political decision making results in outcomes that conflict with the preferences of the general public. Buchanan and Tullock (1977) have recommended that, government must allow several bureaus to supply the same service on the grounds that the resulting competition will improve efficiency. Government therefore regulates the private sector to avoid public/consumers' exploitation through overpricing because waste management services is a public good that everyone ought to have in the interest of equity or social justice (Anazodo, Okoye&Ezenwile, 2012).

The state's regulatory frameworks should be in accordance with the existing wider waste management policy framework, which must be consultative among all the stakeholders, and the citizens involved in decision making. Due to

the high cost of investment in waste management services, the government is bound to involve various development partners with different interests (Anazodo, Okoye&Ezenwile, 2012). Public choice theory assumes that good government policies in a democratic dispensation are an underprovided public good, because voters lack the incentive to effectively monitor government (Green & Shapiro, 1994). While good government tends to be a pure public good for the mass of voters, there may be many interest groups that have strong incentives for lobbying the government to implement specific inefficient policies that would benefit them at the expense of the general public (Gwartney&Stroup, 1992). The main objective could be to access opportunities for businesses in a patron client network. The costs of such inefficient policy practices are dispersed over all citizens, and therefore unnoticeable to each individual. The benefits however, are shared by a small special interest group with a strong incentive to perpetuate the policy by further lobbying. Proponents of this theory expect that numerous special interests within the state will lead to various inefficient policies leading to government failure (Green & Shapiro, 1994).

In reference to this study, the public choice theory holds that a regulatory policy of the government that takes cognisance of the public good characteristics of waste management services shall enhance an effective public private partnership between waste management service providers as one partner and the public as the other partner. The quality of services will therefore be enhanced in terms of affordability, quality, accessibility and good customer service. The production of public goods results in positive externalities which may not be

directly compensated. Private organisationsare for profit. If they do not reap the benefits of a public good which they have produced, their incentives to produce it might be insufficient, thereby failure of the PPP implementation. According toSchubeler et al. (1996), institutional arrangements are key to the success of PPP implementation because the agencies in charge of public service delivery are vital in the management of waste in the state or local community. The agencies are responsible for the formulation of goals, and priorities, determination of roles and jurisdiction and legal and regulatory framework (Schubeler et al. 1996). The public choice theory mainly looks at private sector involvement in the provision of services and the competition thereon which they claim will cure the rent seeking attitudes of government officials. On the other hand, they failed to look at institutional arrangements which is critical in the delivery of public services by the private sector. This inherent weakness associated with the public choice theory brings to the fore the need to properly look at the institutional arrangements, hence the institutional theory. The institutional arrangements define the roles and responsibilities of various stakeholders in the partnership. Proper definition of roles and responsibilities of stakeholders in waste service delivery ensures that, each partner reaps benefits of the partnership (Schubeler et al., 1996).

Principal Agent Theory

The Principal Agent theory is used in this study to address the technical design of PPP service contracts. Under this theory, we have two actors, the principal and the agent. The principal is the contracting public partner which

enters into a contract with the private sector. The agent refers to the contracted private partner in the PPP. Agency theory suggests that it is imperative to separate the identity of the principal from the agent. This enables the development of arms length relations between the two. This means that the principal and the agent should both be seen as independent partners and nothing in their relationship should be construed as creating a merger. Therefore, in PPPs, there should be a greater separation between the role of public as a regulator or purchaser and contractors as suppliers or service providers (Awortwi, 2004).

The Principal Agent theory suggests that monitoring and reporting become a natural corollary, whether the services are delivered by the bureau or through the market or through collaborative action (Awortwi, 2004). The reason for monitoring is that agents are not to be trusted to stick to what they said they would do. If the risk of getting caught is non-existent, then opportunistic agents will have a strong incentive not to make any effort to fulfill their obligations(Awortwi, 2004). There are therefore opportunity and hidden incentives for contractual non-performance if unmonitored. It is therefore imperative to have strong institutional arrangements.

Institutional Theory

Institutional theorists propose that the structure of certain classes of organisations, such as human services, is determined not by technology but by rules emanating from the institutional environment (Hasenfeld&Garrow, 2009). It argues that the relations within a human service sector are determined by rules and regulations other than by market exchanges. According to Harvey (2005)

institutional arrangements cannot be discounted in the delivery of public services by the private sector because the role of the state is to create and preserve an institutional arrangement for the successful implementation of public private partnership. These rules will influence how decisions within a sector about goals, means, and funding are allocated among the constituent parts (Hasenfeld&Garrow, 2009). Thus, sectors will vary in their degree of decentralisation, fragmentation, and federalisation. That is, sectors may vary from how functions, and powers, are dispersed from a central location or authority and how large or small a sector is. Sectors will also vary by how the activities of their constituent organisations are controlled.

Cheema (2003) argues that, while the public sector supports efficiency improvements, the private sector's motivation for profit introduces conflicts of interest with beneficiary governments, which are committed to promoting equity and maximising the well-being of their citizens. However, governments are generally willing to allow their private partners to make a reasonable profit in exchange for improving service and efficiency, leveraging its own financial resources, expediting project implementation (Cheema, 2003). Da Zhu et al. (2008) found that institutional framework is important for SWM due to the complexity of the Waste Management (WM) system and the involvement of many actors. The complexity in providing the required level of service commensurate with the increasing demand for good sanitation service is characteristically attributed to institutional, technical and financial constraints at the various levels of governance: national and local levels, as well as the private

sector (Amoah&Kosoe, 2014). Again, it has been found out that the state is receiving greater attention based on the argument that private sector involvement in service delivery without strong state regulation undermines the entire process (Smith 2004).

Conceptual Issues

The Concepts of Waste, Solid Waste and Solid Waste Management

Waste is more easily recognised than defined. Key issues in the definition of waste are unwanted or surplus substances and that cause environmental and health impacts. Gourlay(1992) cited in Freduah(2004) explains that something can become waste when it is no longer useful to the owner or it is used and fails to perform its purpose.Read (1999), defines waste as any substance, which constitutes scrap material or an effluent, or other unwanted surplus substances arising from the application of a process, or any substance or article, which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled. Waste can be liquid, gaseous or solid.

The composition of solid waste varies from place to place. Factors that influence the composition are the average income level, the sources, the population, social behaviour, climate, industrial production and the market for waste materials (Yadav& Devi, 2009).

Babayemi and Dauda (2009) view solid waste as non-liquid and non-gaseous products of human activities which are regarded as being useless. It could take the form of refuse, garbage and sludge. Solid waste has also been defined as all domestic refuse and non-hazardous wastes including commercial and

industrial wastes, street sweepings and construction debris as well as human wastes (UNEP, 2009).

Similar among all the definitions of solid waste management are that, it is a comprehensive process which involves collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of waste. It includes all administrative, financial, legal, planning and engineering functions.For example, Dhindaw (2004) and Puopiel (2010) defined solid waste management as that discipline associated with the control of generation, storage, collection, transfer and transport, processing and recovery, and final disposal of solid waste. These are done in a manner that is in accordance with the best principles of public health, economics, engineering, urban and regional planning, conservation, aesthetics, and other environmental considerations which are also responsive to public attitudes. Zender (1999)also defined solid waste management as the administration of activities that provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of waste.

According to Puopiel (2010),solid waste management is an important environmental health service, and an integral part of basic urban services. This is because, the health implications of poor waste management can be very damaging to the people exposed to these unsanitary conditions. Diseases such as cholera, typhoid, dysentery and malaria are all related to the practice of poor waste management (Puopiel, 2010).

Schübeler et al., (1996) provides a comprehensive description of solid waste management which summarises the definitions underlined above. In its

scope, solid waste management is a complex task, which depends as much upon organisation and cooperation between numerous public and private sector actors as it does upon appropriate technical solutions. It includes all administrative, financial, legal, planning and engineering functions involved in the whole spectrum of solutions to the problem of solid waste. The solutions often involve complex interdisciplinary relationships among various fields such as planning, geography, economics, health science, engineering and politics (Schübeler et al, 1996).

Solid Waste Management Practices

Tchobanoglous, Theisen, and Vigil (1993) as cited in Puopiel (2010), stated that the most commonly recognised methods for the final disposal of solid wastes were dumping on land, canyons and mining pits**,** water bodies;ploughing into the soil**;**feeding to hogs;reduction and incineration.A study carried out in Ado-Akiti in Nigeria by Momoh and Oladebeye (2010) showed that, the methods of solid waste disposal include dumping of waste in gutters, drains, by roadside, unauthorised dumping sites and stream channels during raining season and burning of wastes on unapproved dumping sites during the dry season.

To Zerbock (2003), the difference between landfills and dumps is the level of engineering, planning, and administration involved. Open dumps are characterised by the lack of engineering measures, no leachate management, no consideration of landfill gas management, and few, if any, operational measures such as registration of users, control of the number of "tipping fronts" or compaction of waste (Zerbock, 2003). Landfills are engineered areas of land

where waste is deposited, compacted and covered (USEPA, 2003). It is a mechanism for effectively treating and disposing solid wastes.

Some of these practices of solid waste management identified during the early disposal practices still exist in cities, towns and villages in developing countries. In Ghana, indiscriminate dumping on open land and in gutters particularly are clearly evident in towns and cities, while dumping in water bodies especially by people living in coastal towns is common. Burning of dumps is also common in peri-urban and rural communities in Ghana and in many other less developed countries.

In contemporary times, the methods of managing solid waste include source reduction, sanitary landfills, composting, recycling, and incineration (Denison and Ruston, 1990). Denison and Ruston (1990) view source reduction as any action that reduces the volume or toxicity of solid waste prior to its processing and disposal in incinerators or landfills. This view is similar to the one given by Kreith (1994). In the view ofKreith (1994), source reduction focuses on reducing the volume and /or toxicity of waste generated. Source reduction includes the switch to reusable products and packaging, the most familiar example being returnable bottles. Kreith (1994) argues that, source separation and resource recovery is an important method in waste management. Tsiboe and Marbel (2004) stated that Austria, the Netherlands, and Denmark developed a waste management process to efficiently resolve the waste disposal problem by essentially coercing their citizens to separate their domestic solid waste into glass, paper, plastic categories; thereby enabling easy collection and consequently reuse.

Sanitary landfilling includes confining the waste, compacting it and covering with soil. It does not only prevent burning of garbage but also helps in reclamation of land for valuable use (Centre for Environment and Development, 2003). The placement of solid waste in landfills is the oldest and definitely the most prevalent form of ultimate waste disposal (Zerbock, 2003). Zerbock (2003) further states that "landfills" are nothing more than open, sometimes controlled dumps.

Furthermore, landfills are one form of waste management that nobody wants but everybody needs (Kreith, 1994). Kreith (1994) adds that there are simply no combinations of waste management techniques that do not require landfilling to make them work. Among the basic management options of solid waste management, landfills are the only management technique that is both necessary and sufficient. Kreith (1994) explains that some wastes are simply not recyclable. Recycling itself produces residuals. Further, Kreith (1994) highlighted that the technology and operation of modern landfill can assure the protection of human health and the environment.

The difficulty in using landfill however is that landfill in itself has some disadvantages as it is costly to construct and maintain, can pollute ground water through leaching, location is a problem in terms of availability of land particularly in the cities. Other critical factors such as gas recovery, composting, waste to energy recovery, storm water control, distance to any settlement and water body were not clearly spelt out by the authors.

In the views of Momoh and Oladebeye (2010), recycling is a veritable tool in minimising the amount of household solid wastes that enter the dump sites. It also provides the needed raw materials for industries. According to Momoh and Oladebeye (2010), it has been established that, it is the best, efficient and effective method of solid waste management system. The United States Environmental Protection Agency (USEPA, 1999) has recommended recovery for recycling as one of the most effective waste management techniques. USEPA, (1999) explains that recycling turns materials that would otherwise become waste into valuable resources and, it yields environmental, financial, and social returns in natural resource conservation, energy conservation, pollution prevention, and economic expansion and competitiveness. More importantly, a sizeable portion of what is thrown away contains valuable resources—metals, glass, paper, wood, and plastic—that can be reprocessed and used again as raw materials (USEPA, 1999).

Kreith (1994) has also added that, recycling is the most positively perceived and doable of all the waste management options. According to Kreith (1994), recycling will return raw materials to market by separating reusable products from the rest of the municipal waste stream. The benefits of recycling are many, Kreith (1994) added. It saves precious finite resources, lessens the need for mining of virgin materials which lowers the environmental impact for mining and processing. For example, according to the Institute of Waste Management cited by Tsiboe and Marbel (2004), United Kingdom (UK) recycles only 11 percent of its household waste, Italy and Spain only 3 percent, Netherlands 43 percent, Denmark 29 percent, and Austria 50 percent. Having proposed recycling

by different authors as the best option to manage solid waste in modern times; they have forgotten about the cost component which is key to successful implementation of any recycling project and waste management. However, composting is more economical than recycling.

Composting process uses microorganisms to degrade the organic content of the waste. Aerobic composting proceeds at a higher rate and converts the heterogeneous organic waste materials into homogeneous and stable humus (Centre for Environment and Development, 2003). UNEP (2010: 28) has also defined composting as "a biological decomposition of biodegradable solid waste under controlled predominantly aerobic conditions to a state that is sufficiently stable for nuisance-free storage and handling and is satisfactorily matured for safe use in agriculture". According to UNEP (2010), composting is the option that, with few exceptions, best fits within the limited resources available in developing countries. A characteristic that renders composting especially suitable is its adaptability to a broad range of situations.Zerbock (2003) explains that a low-technology approach to waste reduction is composting. Zerbock (2003) further stated that, in developing countries, the average city's municipal waste stream is over 50 percent organic material and thus must be incinerated.

The Centre for Environment and Development (2003: 9) defines incineration as "a controlled combustion process for burning combustible waste to gases and reducing it to a residue of non-combustible ingredients". Centre for Environment and Development (2003, argues that, during incineration, moisture in the solid waste gets vapourised and the combustible portion gets oxidised and

vapourised. Carbon dioxide, water vapour, ash and non-combustible residue are the end products of incineration. Incinerators have the capacity to reduce the volume of waste drastically, up to nine fold than any other method (Kreith, 1994). Kreith (1994) argues that incineration can also recover useful energy either in the form of steam or electricity. However, Kreith (1994) recognised that the main constraints of incineration are high cost of operation, relatively high degree of sophistication needed to operate them safely and economically as well as the tendency to pollute the environment through emissions of carbon dioxide.

Although considerable efforts are being made by many governments and other entities in tackling waste-related problems, there are still major gaps to be filled in this area (UNEP, 2009). According to UNEP (2009), the World Bank estimates that in developing countries, it is common for municipalities to spend 20 to 50 percent of their available budget on solid waste management. UNEP (2009) suggested that if most of the waste could be diverted for material and resource recovery, then a substantial reduction in final volumes of waste could be achieved and the recovered material and resources could be utilised to generate revenue to fund waste management. This forms the premise for the Integrated Solid Waste Management (ISWM) system based on 3Rs (reduce, reuse and recycle) principle. It has been shown that with appropriate segregation and recycling systems, significant quantities of waste can be diverted from landfills and converted into resource (UNEP, 2010). Similarly, USEPA (1999) has said that if a state or local government wants to plan for and implement ISWM, they

have to consider a hierarchy of methods which are reduce, recycle, and incinerate/landfill.

In Africa, rapid urbanisation is being followed by a corresponding increase in demand for solid waste services. In large part, governments are unable to maintain or improve the level of service delivery (Myers, 2005). The problems span many issues, from institutional constraints to limited financial and human resources. Under PPP, the state transfers some or all aspects of service delivery to the private sector. PPP became the mode of service delivery following the introduction of the Structural Adjustment Programme (SAP) in the 1980s largely championed by the World Bank. This adjustment was part of a neoliberal offensive that advocated a minimalist state and viewed the private sector as more efficient (Stein 2000).

Policy Framework

Several policies related to waste management is available at international, national and local levels. For example, International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters (29th December 1972) and Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes (22nd March 1989). In Ghana, there are laws to protect the environment. These laws include the Local Government Act (1993), Act 462, the Environmental Protection Agency Act (1994), Act 490, the Pesticides Control and Management Act (1996), Act 528, the Environmental Assessment Regulations 1999, (LI 1652), the Environmental Sanitation Policy of Ghana (2010) among others.

Mariwah (2012) indicated that Ghana has almost all the institutions, agencies and policies for waste management at all levels of government; from central government down to the very local level of unit committees. Waste management is the responsibility of the Ministry of Local Government and Rural Development, which supervises the Metropolitan, Municipal and District Assemblies. However, regulatory authority is vested in the Environmental Protection Agency (EPA) under the auspices of the Ministry of Environment, Science, Technology and Innovations. The Metropolitan, Municipal and District Assemblies are responsible for the collection and final disposal of solid waste through their Waste Management Departments and their Environmental Health and Sanitation Departments (Mariwah, 2012).

The policy framework guiding the management of hazardous, solid waste and radioactive substances include the Local Government Act (1993), Act 462, the Environmental Protection Agency Act (1994), Act 490, the Pesticides Control and Management Act (1996), Act 528, the Environmental Assessment Regulations 1999, (LI1652), the Environmental Sanitation Policy of Ghana (1999), the Guidelines for the Development and Management of Landfills in Ghana, the Guidelines for Bio-medical Waste (2000) and Environmental Sanitation Policy of Ghana (2010). All these Acts and Regulations emanate from the National Environmental Action Plan. The only guidelines, which indirectly discourage unsustainable practices and promote sustainable consumption and production, are those of Environmental Impact Assessment. Environmental Impact Assessment is a requirement under legislation (Act 528) and guidelines

have been prepared through the Environmental Protection Agency with private sector collaboration (SMA, 2006). Even though Ghana has all these policies to guide waste management, enforcement of these laws has been a problem. This coupled with poor institutional arrangement and funding present challenges to the implementation of solid waste management in Ghana.

Concept of Public Private Partnership

The 1990s saw the establishment of PPP as a key mechanism of public policy across the world. PPP was imposed by international development agencies as a key strategy for delivering services to cities of the third world who were highly indebted (Fiszbein& Lowden, 1999).Most of the definitions reveal PPP as a co-operative scheme between the public and private sectors (Akintoye, Beck &Hardcastle, 2003). Key among the definitions of PPP are; agreement between the public and private sector, provision of a public good by the private sector and the involvement of at least two actors aimed at improving quality service delivery.

In the views of Dube and Chigumira (2010), PPP as a concept entails contracts between a public sector authority and private party, in which the private party provides a public service and assumes substantial financial, technical and operational risks in the project.Altenburg (2005) defined PPPs as a form of alliance in which members share resources, risks and rewards in pursuit of a development objective that can be better achieved working together. An alliance achieves its development objective by leveraging significant resources, applying proven development expertise, and working jointly with new and existing

partners, often using innovative approaches. To ensure success, alliance members collaborate throughout design, implementation, and monitoring and evaluation.

Hemming (2006) also defined PPP as the transfer to the private sector of investment projects that traditionally have been executed or financed by the public sector. In addition to private execution and financing of public investment, PPPs have three other important characteristics: there is an emphasis on service provision, as well as investment by the private sector; and significant risk is transferred from the government to the private sector.

Gentry and Fernandez (1999 cited in Muneera, 2012) mentioned that usually PPP starts when a crisis is identified. For example, privatisation of the 1980s and 1990s were as a result of indebtedness of most Third World nations. Crisis can occur when a service is not delivered, the need is high and the government cannot do it anymore. Also, when there is a long term planning, driven by a clear understanding of and respect for the needs of various actors and when there is an individual, who pushes for change called the 'champion' that is very influential and can make a huge difference (Gentry & Fernandez, 1999 cited in Muneera, 2012).

In Ghana, the Ministry of Finance and Economic Planning (MOFEP, 2011:2) defines PPP as "a contractual arrangement between a public entity and a private sector party, with clear agreement on shared objectives for the provision of public infrastructure and services traditionally provided by the public sector". Usually, in a PPP arrangement, the private sector party performs part or all of a government's service delivery functions, and assumes the associated risks for a

significant period of time (MOFEP, 2011). The private sector partner receives a financial remuneration from the public sector partner. The financial remuneration may be derived entirely from service tariffs or user charges, and government budgets, which may be fixed. It can also be derived partially from fixed, periodic payments (annuities) and contingent; or a combination of the fixed, annuities and contingent.

The definition of PPP offered by MOFEP (2011) is very comprehensive in describing PPP arrangement and highlights definitions presented by various authors in this study. MOFEP (2011) seespublic private partnership as a government service of government and one or more private sector companies. PPP involves a contract between a public sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical and operational risk in the project. Government contributions to a PPP may also be in kind notably the transfer of existing assets. In all cases, the partnerships include a transfer of significant risks to the private sector, generally in an integrated and holistic way, minimising interfaces for the public entity. An optimal risk allocation is the main value generator for this model of delivering public service.

Even though, the definition of MOFEP is clear on funding for PPP projects, it failed to define the type of private partner that is ideal for the successful implementation of PPP projects. This is important because apart from institutional arrangements, the successful implementation of PPP projects depend

largely on financial and technical resources. Notwithstanding, like other definitions, it has the following issues:

- cooperation between public and private partner
- clear agreement on goals
- combination and agreement on sharing of public and private resources and tasks
- distribution of risks between the public and private sector.

The definition of MOFEP (2011) suggests that overall PPPs seem to unite at least two dimensions. The first dimension refers to finance and defines the arrangements for engaging public and private actors financially in PPPs. The second dimension is organisational and defines the roles and responsibilities for dovetailing public and private actors in a single coordinated executive framework. Both dimensions interact tightly in such a way that the mobilisation of resources should satisfy the individual objectives of each agent and provides sufficient incentives for enhancing their durable cooperation.

Unlike privatisation, where ownership of the service or enterprise is handed over to the private sector, in PPPs, the goal is to introduce investment and efficiency into the system by the private partner while the government still retains ownership (MOFEP, 2011). This position is no different from the views of Hemming (2006),Altenburg (2005), Gentry and Fernandez(1999cited in Muneera, 2012) who suggested that PPPs goal is to transfer to the private sector of investment projects that traditionally have been executed or financed by the public sector.

Many of the services where government retains ownership are usually considered to be public or merit goods because of externality and excludability problems. In PPPs, while the public sector has ultimate responsibility for providing service, actual delivery becomes the responsibility of the private sector under contractual arrangements. Partnerships in this form are not philanthropic relationships in which the public sector simply donates funds (Awortwi, 2004). Strategic partnership is a 'win-win' relationship based on mutual gain to the partners in areas of their strategic interests (Waddell, 2000).

To Liebenberg (2007), it is worthy to note that, PPP as a partnership is a contractual arrangement and not a normal contract (a contract where there is no negotiation with a preferred bidder) between a client and a service provider. Liebenberg (2007) argues that because the contract is not a normal contract and due to the fact that the final contract is negotiated with a preferred bidder, it is important that the municipality's procurement regulations allow for this different type of procurement. It must however be noted that PPP solutions are not necessarily always the best solution and must only be used when you are sure that the organisation can actually benefit from a financial and technical point of view from the private partner's involvement (Liebenberg, 2007).

The definition of Obiri-Opareh (2003:56) which states that "effective development requires partnerships at different levels of government, the private sector, donor groups and the civil society" will be adopted for this study. Obiri-Opareh (2003) continued to state that the core objectives of partnerships in basic urban settings is to deliver services in a more effective and efficient way. In

partnerships, each of the partners bring something which includes the transfer of resources that can be material or immaterial.Again, there is a shared responsibility of the outcomes, without assuming the equality between actors. Partnerships are mutually beneficial and also "partnerships can only function if there is trust between partners, mutual accountability and leadership" (Obiri-Opareh, 2003:57).

Models of PPPs

There are many forms or models of PPP. They are distinguishable by the degree of involvement of the private sector and the duration of the contract. Some of the options outlined by Stottman (2000) include; management contract, service contract, concession, lease and affermage contracts, Build-Operate-Transfer, and Joint venture.

The term "management contract" according to Stottman (2000), has been applied to cover a range of contracts from technical assistance contracts through to full-blown operation and maintenance agreements and so it is difficult to generalise about them. The main common features are that the awarding authority (public) engages the contractor (private) to manage a range of activities for a relatively short time period (2 to 5 years). Management contracts tend to be task specific and input rather than output focused. The simplest management contracts involve the private operator being paid a fixed fee by the awarding authority for performing specific tasks. The remuneration does not depend on collection of tariffs and the private operator does not typically take on the risk of asset condition. Where the management contracts become more performance-based,

they may involve the operator taking on more risk, even risk of asset condition and replacement of more minor components and equipment.

Concession: A concession makes the private sector operator (concessionaire) responsible for the full delivery of services in a specified area, including operation, maintenance, collection, management, and construction and rehabilitation of the system. The operator is responsible for all capital investment. The public sector is responsible for establishing performance standards and ensuring that the concessionaire meets them. A concession contract is typically valid for 25–30 years. The concessionaire collects the tariff directly from the system users.

Lease and affermage contracts: these are similar to management contracts, but the private operator takes responsibility for all operation and maintenance functions, including billing and revenue collection. In both cases, the operator collects the tariff revenue but, under an affermage, the contractor is paid an agreed-upon fee for each unit of service produced and distributed. Under a lease, the operator pays a lease fee to the public sector and retains the remainder.

Build-Operate-Transfer (BOT) and similar arrangements including Build-Transfer-Operate (BTO), Build-Operate-Own (BOO), Build-Operate-Own-Transfer (BOOT), Design-Build-Operate (DBO), Design-Build-Finance-Operate (DBFO). Under a BOT and similar arrangements, a private firm or consortium finances and develops a new infrastructure project or a major component according to performance standards set by the government. The private partner

provides the capital required to build the new facility. At the end of the contract, the ownership is transferred to the public sector.

Significance of PPP in Waste Management

There are different views on the benefits of PPP. Hemming (2006) argued that, governments seeking to introduce PPPs need to pay attention to various aspects of the supporting institutional framework. Institutional aspects concern the distribution of functions and responsibilities and correspond to organisational structures, procedures, methods, institutional capacities and private sector involvement (Schübeler et al., 1996).

Klundert and Lardinois (1995) noted that the private sector can correct the management failures encountered in a state-run system and provide the technical skills often lacking in the public sector. In best-case scenarios, private operators have qualified staff and appropriate production resources, while still being flexibly organised. Since costs cannot be fully covered by the fees collected from users, calling on specific service providers (for collecting waste, operating a waste transfer plant, or technical landfill site) is more widespread than the appointment of a large-scale private operator covering the entire sector. Moreover, the private sector brings in new ideas, technologies and skills which are supposed to improve the SWM services (Klundert&Lardinois, 1995).

With PPP, local government may be able to realise cost savings for the construction of capital projects as well as the operation and maintenance of services. For example, construction cost savings can often be realised by combining design and construction in the same contract. The close interaction of

designers and contractors in a team can result in more innovative and less costly designs. The design and construction activity can be carried out more efficiently, thereby decreasing the construction time and allowing the facility to be put to use more quickly (Kwan, 1999). Kwan (1999) adds "the local government would only enter into aPPP if the price of providing a given service was lower than if provided by the local government, or if a higher level of service could be provided for the same price by the private partner" (p.18). Overall costs for professional services can be reduced for inspections and contract management activities. As well, the risks of project overruns can be reduced by design-build contracts. Cost savings can also be realised by local government in the operation and maintenance of facilities and service systems. Private partners may be able to reduce the cost of operating or maintaining facilities by applying economies of scale, innovative technologies, more flexible procurement and compensation arrangements, or by reducing overhead (Kwan, 1999).

Again, with PPP local government can share the risks with a private partner. Risks could include cost overruns, inability to meet schedules for service delivery, difficulty in complying with environmental and other regulations, or the risk that revenues may not be sufficient to pay operating and capital costs (Kwan, 1999).

Another reason is improved levels of service or maintaining existing levels of service. PPP can introduce innovation in how service delivery is organised and carried out. It can also introduce new technologies and economies of scale that often reduce the cost or improve the quality and level of services (Kwan,

1999).Efficiencies may be realised through combining various activities such as design and construction, and through more flexible contracting and procurement, quicker approvals for capital financing and a more efficient decision-making process. More efficient service delivery not only allows quicker provision of services, but also reduces costs (Kwan, 1999).

Enhancement of revenues is another benefit of PPP. PPPsmay set user fees that reflect the true cost of delivering a particular service. PPPs also offer the opportunity to introduce more innovative revenue sources that would not be possible under conventional methods of service delivery (Kwan, 1999).

Increased involvement of local government in PPPs canaccording to Kwan (1999) help to stimulate the private sector and contribute to increased employment and economic growth. Local private firms that become proficient in working in public private partnerships can "export" their expertise and earn income outside of the region (Kwan, 1999). For example, to Shediac, Abouchakra, Hammami and Najjar (2008) evidence suggests that the more PPP projects launched in a nation, the higher the rate of GDP growth. Notably, countries with 70 or more PPP infrastructure projects demonstrated a 25 percent GDP growth rate between 1990 and 2003. This is because such projects tend to be large undertakings that bring capital into the market while creating long-term employment. Job growth drives more consumption, generating more wealth and fueling a stronger economy. Private investment of this nature also attracts other private investors to the market, creating a sustainable model for economic growth (Shediac et al., 2008).

Again, Liebenberg (2007) also argued that, involving the private sector in service delivery is an option that local governments should take into consideration if they want to improve cost-effectiveness, quality and coverage. Private sector involvement in the delivery of public service is aimed at achieving a more efficient waste management. This is often seen as a strategic element for solid waste management.

Notwithstanding the benefits enumerated in this study, Kwan (1999) argued that, a PPP may not be the best option for delivering a public service or project. Local government should undertake a cautious approach and examine all relevant factors and issues when considering this type of arrangement because of equity issues. The different forms of PPP vary in terms of how risks and responsibilities are allocated. They also vary in complexity and the degree of expertise required to successfully negotiate required contracts. Local governments should not assume that PPPs provide solutions to difficult servicing issues (Kwan, 1999) such as efficient waste management. They should expect that increased transfer of risk will result in higher expectations for reward by the private sector and that the negotiation of contracts may require a high degree of expertise.

The above discussions suggest that a good PPP arrangement presents many benefits such as efficient and quality service delivery. These benefits may not be achieved under the traditional way of service delivery by the public sector because of lack of competition and inadequate resources.

PPPs in Waste Management in Ghana

PPP in waste management is not an entirely new idea in Ghana. According to Asare and Frimpong (2013), before the government's contractual agreement with Zoomlion Ghana Limited in 2006, there had been previous partnership agreements for the same purpose. For example, privatised waste collection became part of Accra Metropolitan Assembly's (AMA) official policy in 1995 even though the first experience with privatised collection of household waste in Accra started in 1977. Obiri-Opareh et al. (2000) mentioned that, local government authorities entered into different forms of waste collection agreements such as franchise, contracting out, sub-contracting and leasing of equipment to private agents in Accra, Kumasi and Tema.

In July 1999, the national government contracted City and Country Waste Limited (CCWL), a Canadian-Ghanaian joint venture partnership, to provide sanitation services in the AMA (Asare&Frimpong, 2013). Despite the perception that the private sector is the engine of growth and that the involvement of the private sector in the provision of waste management services promote efficiency, PPPs before Zoomlion Ghana Limited failed. Awortwi (2004) observed that previous PPPs failure to resolve Ghana's sanitation problem was attributable to the lack of strategic communication (participation). Being a top-down approach, neither the local people nor their representatives, that is, assembly members were involved in the waste management contractual arrangements. For example, waste collection contract to CCWL was undertaken without any consultation with the Waste Management Department (WMD) or even the AMA.

In addition, weak state capacity to monitor and regulate partnership contracts contributed to the failure of earlier PPPs. The 1999 Environmental Sanitation Policy mandated the WMD and the Public Health Management Directorates (PHMDs) of the MMDAs to monitor and regulate the quality of service delivery and sanitary conditions, and sanction offenders (Obiri-Opareh& Post, 2002). However, official monitoring was exceptionally weak owing to lack of logistical capacity, understaffing and lack of monitoring experts, low remuneration and corruption. Notwithstanding the significance of monitoring and regulation in PPPs, only few resources, material transfers and training were given to the WMD and the PHMDs. Even though the AMA and the Kumasi Metropolitan Assembly (KMA) expended huge amounts of money to sign contracts with private vendors, not even a percent of the amount was budgeted for monitoring (Asare&Frimpong, 2013).

Asare and Frimpong, (2013) further noted that, with poor local government remuneration, the private agents easily manipulated the already unmotivated monitoring officers with bribes. The dearth of logistics led to apathy in monitoring among local bureaucrats. It was, therefore, 'sine qua non' for private waste management institutions to get away with bad conducts and sub-standard service delivery. Although private service providers continuously flouted contract specifications and sanitary bye-laws, they were not prosecuted (Asare&Frimpong, 2013).

Furthermore, PPPs for sanitation services delivery before Zoomlion Ghana Limited lacked financial sustainability. On one hand, the house-to-house solid

waste collection seemed most difficult in low-income and more densely populated areas where the costs of service provision were high. User fees were excessively profiteering especially in low income residential areas. High tipping fees encouraged clandestine dumping or free ride. On the other hand, several local companies that operated house-to-house services whined that the fees they received were far less than what was actually agreed to under the franchise arrangement (Asare&Frimpong, 2013).

Additionally, Awortwi, (2004) noted that PPPs were dogged by undue delays in both government release of subventions and donor funding. Worse still, local governments were not able to generate adequate internal revenues to underwrite contracted waste management agents. The inability of MMDAs to internally generate revenues is, in part, attributable to generally narrow tax network, poor financial administration and corruption, and lack of technical expertise at the local level (Ayee, 2007 cited in Asare and Frimpong, 2013). Indeed, local governments in developing countries have not been able to fashion out an effective tariff structure for basic services (like sanitation, water and electricity) and cost recovery (Bagchi, 2001). Despite their lack of capacity to internally mobilise funds in a more effective and efficient manner, both AMA and KMA paid unreasonably high prices for solid waste collection under contracting-out arrangements, which rendered the contracts cost ineffective. The high contract cost in Accra and Kumasi was precipitated by alleged collusion and corruption by politicians, rent-seeking local bureaucrats and private associates (Awortwi, 2004).

Aside from the 1999 National Environmental Sanitation Policy (NESP), there were several scattered sanitation related institutions and policies like the Community Water and Sanitation Policy (CWSP), Small Towns Water and Sanitation Policy (STWSP), (Water Aid Ghana Program 2004 cited in Dinye, 2006), the 1992 Republican Constitution of Ghana, the Local Government Act, 1993 (Act 462) as well as sanitation bye-laws of the MMDAs.

Institutional Framework for PPP

Schübeler et al., (1996) mentioned that, the institutional conditions for successful solid waste management include the institutional structures and arrangements and also organisational procedures and the capacity of responsible institutions. First of all,decentralisationof responsibility for SWM requires a corresponding distribution of powers and capacities. It normally calls for revised organisational structures, staffing plans and job descriptions of the local agencies concerned. Secondly, capacity-building measures for MSWM should give primary attention to strategic planning and financial management. Discrepancies often exist between MSWM job requirements and the actual staff qualifications; training and human resource developments are thus important components.

Finally, private sector involvement in MSWM implies a shift in the role of government institutions from service provision to regulation. Essential conditions for successful private sector involvement include competitive bidding, technical and organisational capacity, regulatory instruments and monitoring and control systems. The contribution of informal waste collection workers may be significantly improved through appropriate organisational measures.

PPP involves an agreement between two or more parties. That is, the public sector partner and one or more private partner(s). Due to the nature of PPPs, it requires a legal framework or policy to govern the successful implementation of the agreement. Asare and Frimpong (2013) found that weak state capacity to monitor, co-ordinate and regulate partnership contracts contributed to the failure of earlier PPPs in Ghana. The problem of institutional failure in the PPP arrangement for waste management calls for a closer look at the legal and regulatory framework that governs the partnership.

Schübeler et al., (1996) noted that, the instrumental basis for implementing the strategic plan comprises a legal and regulatory framework which is elaborated in the form of bye-laws, ordinances and regulations concerning solid waste management, and includes corresponding inspection and enforcement responsibilities. Trade-offs between alternative MSWM goals and objectives are inevitable. The strategic plan provides a basis for operationalising the roles of authorities' concerned. The absence of clear jurisdiction may undermine political sustainability. Again, Schübeler et al. (1996) mentioned that, the regulations should be few in number, transparent, unambiguous, easily understood and equitable. Furthermore, they should be conceived with regard to their contribution to the physical and economic development.

PPP actors in Solid Waste Management

The public actor is the principal actor in the PPP. It is either the Central Government, or Decentralised Government/Agencies. The public actor plays key roles in solid waste management. Public actors face problems of funding,

competencies, infrastructure/resources and political interference to manage MSW. Due to these special reasons they fail to manage SW in entire cities or have limitation in meeting public demand (Ahmed & Ali, 2004). Accordingly, governments enter into partnership with the private sector in order to reduce costs in waste management, introduce efficiency and effectiveness in the management of MSW (Oduro-Kwarteng, 2011). The public actor in Ghana is responsible for monitoring, sanctioning of poor performance and the management of the final disposal site (Oduro-Kwarteng, 2011).

Private sector is profit oriented and does not face problems with budget. Contracting-out service delivery to the private sector helps the government to reduce costs (Kettl, 1993; Helmsing, 1997). To get back returns from their investment, private investors most of the time provide capital, management and organisational capacity, labour and technical skills to the public sector (Schübeler et al, 1996). Also neo-liberalists view the private sector to have ability for good management with controlling costs by using technology and skilled workers (Massoudet al. 2003). Oduro-Kwarteng (2011) observed that, the private actor in Ghana's PPP is in charge of waste collection. It provides waste service for a fee. Also, some private companies enter into direct contracts with households to collect wastes from their homes.

Generally, formal private agents collect reusable or recyclable itemsfrom waste for reuse or recycling (Post & Baud, 2003). This activity creates a chance to recover valuable materials and to generate more income. Under partnership, each

of the actors think about benefits, but this does not mean equality among them (Post & Baud, 2003).

Addo-Yobo and Ali (2003) argued that, generally in most cities in developing nations, municipal solid waste management is the responsibility of the public sector or municipalities. Therefore, municipalities are the main responsible agencies for collection, transportation and disposal of solid waste (Baud, Post &Furedy, 2004). For example in Accra, the AMA concentrates on supervision of waste collection, monitoring of the public private partnership, and management of final disposal points. The private local firms are the ones in charge of actual collection and provide their services for a fee according to specific contractual agreements that each company makes with the Ministry of Local Government and Rural Development (Thompson, undated).

Empirical Evidence on PPP in Solid Waste Management

A number of studies show that a number of factors influence the successful implementation of PPP in solid waste management. Ahmed and Ali (2004) noted that, PPPs are alternatives to full privatisation, offering a hybrid of the private sector's 'dynamism, finance, knowledge of technologies, managerial efficiency, and entrepreneurial spirit' with the social responsibility, environmental awareness, local knowledge and job creation concerns of the public sector. Ahmed and Ali (2004) outlined a number of conditions for successful PPPs. First, a positive culture that encourages leadership and citizen participation that is related to the long-term development concerns of a community. Second, a realistic commonly accepted vision among the public, private, and community

members that is based on the area's strengths and weaknesses, as well as a good understanding of the potential for the community. Third, a participatory ethic in concerned organisations such as Non-Governmental Organisations and Community Based Organisations that can blend the self-interests of private sector, with broader interests of the community. Finally, continuity of policy with the ability to adapt to changing circumstances, while at the same time reducing uncertainty for businesses is critical for the successful implementation of PPP in solid waste management.

Evidence suggests that institutional and legal framework is important for any PPP arrangement. In a study conducted in Tanzania byMuneera (2012) it was observed that some legal acceptance or trusted environment is needed to achieve the PPP goals. The main objective of the study was to identify how PPP work in SWM in different developing countries. Using qualitative research approach, the study revealed that due to weaknesses in the public sector such as inefficiencies, wastefulness, carelessness, weakness in service delivery and provision of low quality goods for high rates, developing nations face problems to manage the waste properly. So, governments in developing nations have increased the involvement of the private sector to provide SWM services. Thus developing countries have introduced PPP as an alternative solution to manage waste. Also the study found that the governments alone could not deliver effective and valuable services. With the introduction of PPP, the partner could supply SWM services more effectively and cheaply. However, it has been found that, if there is

no good supportive environment, then the partner has difficulty to manage the waste leading to failure in the project.

On the contrary, PPPs in Portugal failed because of weak public sector capacity which was evident in risk transfer to the private sector and delays in giving government approvals on essential land and environmental aspects (World Bank, 2008). Again, Akaateba and Yakubu (2013) study revealed that the effectiveness of solid waste collection in the Wa Municipality to a large extent hampered by weak monitoring and sanctioning by the Municipal Assembly. The study used quantitative research approach; simple random sampling was used to draw a sample size of 193 respondents for the study. The main objective was to assess householders' satisfaction towards the solid waste collection services provided by Zoomlion Ghana Limited in Wa Municipality of Ghana.

Akaateba and Yakubu (2013) found that transferring waste collection services in the municipality to the private partner without the Assembly having the capacity to ensure contract enforcement, monitoring and sanctioning of contract terms, resulted in poor quality of service delivery to the greater dissatisfaction of householders.

Neo-liberal theorists argue that, the private sector also has the ability for effective management with controlling costs by using technology and skilled workers (Massoud, Fadel&Malak, 2003). For example, World Bank (2014) study revealed that Russia's PPPs successes was as a result of efforts to encourage PPPs. They started with the creation of the Investment Fund, providing grants for strategic PPP projects to make them financially viable. This arrangement is

similar to India's viability gap fund and the UKs PFI credits for PPP projects (World Bank, 2014). The private sector needs more money to handle waste. According to a study by Henry (2006), in Nairobi, 47 percent of the city dwellers pay US$ 1.25 per month for good waste management services. If the private sector does not have money to invest and hikes prices, people will not cooperate. It becomes very difficult to manage the garbage well and the private sector cannot ensure clean environment.

In developing countries, municipalities or the private sector use different kind of technical resources to collect waste such as tractor, compactor trucks, tricycles, waste containers, etc. Most of the municipalities do not have enough vehicles to collect the waste in the entire city. It can be observed in some areas that there still remains uncollected waste on road sides and in open places. Neoliberal theorists argue that the private sector can support by providing vehicles to collect waste and they prefer to use vehicles which are in good condition. Levine and Coad (2010) noted that if the vehicles break down, the private sector is able to repair them immediately because they are able to take decisions fast and do not have to wait for permissions from a higher level manager.

Lack of physical infrastructure creates problems for the private partners particularly in collection of waste in a whole city. A study by Oduro-Kwarteng (2011) showed that there were variations in productivity, technical efficiency and servicequality of private companies within and across five cities studied. The main objective of the study was to examine the evolving involvement of private

sector in urban solid waste collection, and the factors explaining differences in performance of private sector companies. The study involved the useof both quantitative and qualitative data collection using survey methods. Results show that 17 out of 25 companies had technical efficiency values below 50%. Whereas 7 companies in Accra, Kumasi and Tema performed above average, all the companies in Takoradi and Tamale performed below average. The reasons for the low productivity and inefficiencies are attributed to inefficient operations, low utilisation of vehicles and sub-optimal scale of operation of the companies. Companies with vehicle productivity above average had higher average daily quantity of waste collected (in tonnes per vehicle) for collection methods than those companies with productivity below average.

In conclusion, the empirical evidence on PPP revealed that, regulatory framework, institutional arrangements, and political support are vital for the implementation of PPP in waste management. The implementation of PPP projects depend on the interest of politicians and the laws that are in place. Again, the role of financial resources in the success of PPPs cannot be overemphasised. In that, there are challenges in the provision of solid waste services by the public sector because of inadequate funds and lack of technical skills. It is worthy of note that, the public sector failed to provide efficient waste services not only because of inadequate funding but lack of institutional arrangements. Proper institutional arrangements set the rules to influence how decision rights within the waste sector about goals, means, and funding are allocated among the constituent parts.

Conceptual Framework

Schübeler et al, (1996) argued thatfor successful solid waste management, there is the need for institutional and legal framework, a clear definition of roles and responsibilities, and a consideration of the factors that influence its operations as well as the awareness of the challenges faced in the implementation of PPPs in waste management.

To begin with, Schübeler et al.(1996) and Da Zhu et al. (2008) stressthe need for clear and well-defined institutional and legal framework for solid waste management due to the complexity of the waste management system and the involvement of many actors. Policy makers have to put in place appropriate institutional structures to handle solid waste. Such institutional and legal frameworks will allow for some policies, rules and regulations to protect the people and the environment. Schübeler et al., (1996) explain that since the private sector is profit oriented, there is the tendency to over-rate their interest to the neglect of the public good.

Earlier discussions have explained that the success of PPPs in solid waste management depends on clearly spell out roles and responsibilities between the public and private entities involved in the arrangements. Clear definition and good performance of the roles by the various actors in the PPP arrangements are very relevant. To effectively achieve the goals of PPPs in waste management, the local authorities alone cannot shoulder these responsibilities. The roles and responsibilities of all actors are important and so must be defined explicitly to avoid conflict. This also helps to ensure co-operation from all involved partners in

the PPP arrangements. The assemblies are in charge of agencies for collection, transportation and disposal of solid waste. The private local firms are the ones in charge of actual collection and provide their services for a fee according to specific contractual agreements that each company makes with the city authority.

Transparency helps to ensure that a project is fair and that the planned costs are open for public scrutiny. There must be a disclosure of PPP contract agreements to all key stakeholders. Information regarding PPP arrangements must also be accessible. Therefore, to ensure successful implementation of public policy, it is therefore prudent to ensure that there is much information to all stakeholders. Stakeholders are well informed when they are involved in both the planning and implementation stages.

One key reason why the definition of roles of the public and private actors is important is that a well-defined role of actors in the PPP arrangement ensures that, monitoring and sanctioning of performance become a natural corollary. According to the Principal Agent theory, both the public and the private actor will perform its role if monitoring and sanctioning of performance are effective hence the success of PPP.

Beyond the institutional frameworks and role definition, other issues which are critical in PPPs in waste management include capital, management andorganisational capacity. Labour and technical skills in the provision of waste management are also vital. Since managing waste is costly, there is the need to appreciate the ability of the various actors for good financial, managerial and organisational strengths with controlling costs by using technology and skilled

workers. Adequate skilled labour will enable the private entities to get expensive technologies, develop new ideas and innovations to manage waste. The private sector must have skilled workers who are aware about the problem and knowledgeable about high technologies to handle the waste as shown in Figure 1.

Public ⟵ Investment (Responsibility/Risk) ⟶ Private

Original framework by Ndandiko, 2006

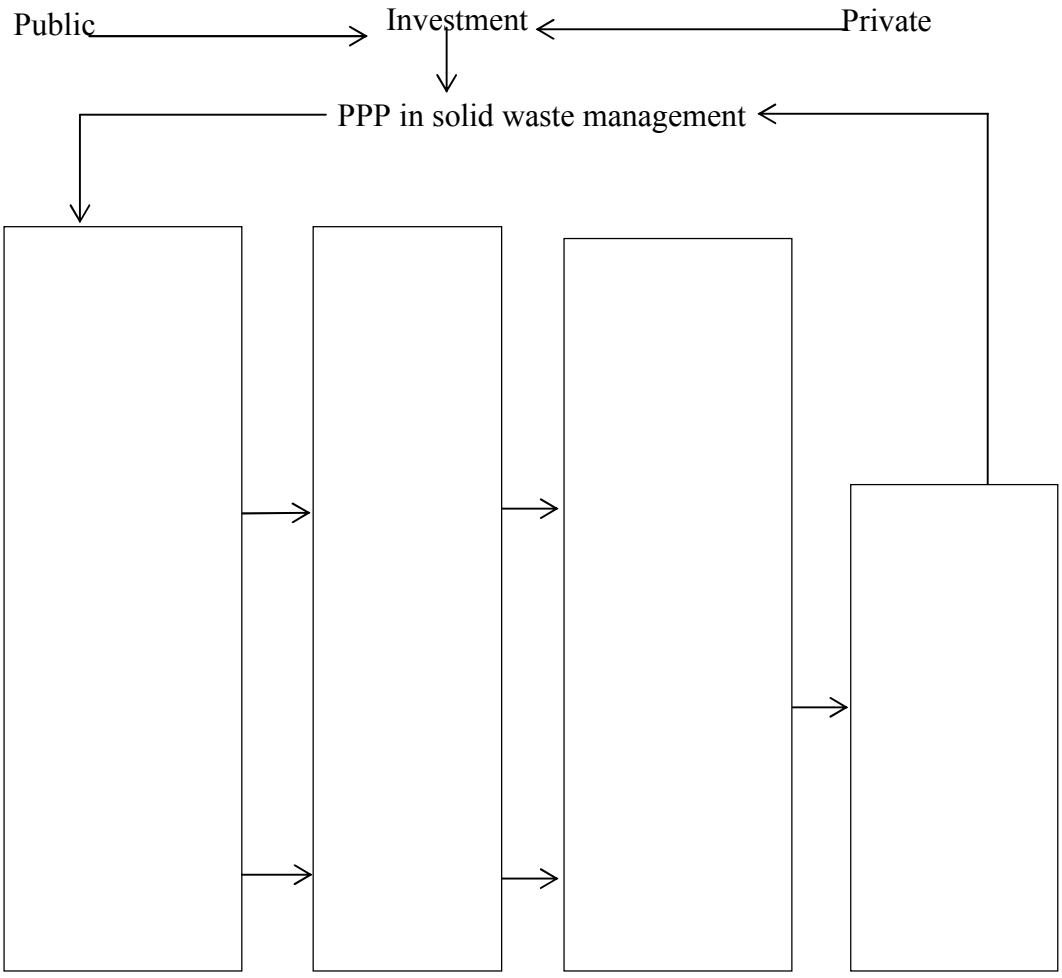

***Figure 1*: Conceptual Framework for Ensuring Effective PPPs in Solid Waste Management**

Source: Adapted from Ndandiko (2006)

Conclusion

A number of observations were made based on the review of related literature. First, effective policies, rules and regulations to protect the people and

the environment are crucial in successful PPPs in solid waste management. Second, clear definition and performance of the roles by the various actors in the PPP arrangements are very relevant in solid waste management. Clear definition of roles prevents conflict and ensures that each partner perform its role. Thirdly, measures for supervision of solid waste collection, monitoring of the public private partnership, and management of final disposal points are vital for the successful implementation of public private partnership in solid waste management.

Finally, it was revealed that since the private entities are profit oriented, they normally do not face problems with budget. Thus, contracting-out service delivery to the private sector helps the government to reduce costs. This is because the private contractors are able to avoid waste of financial resources. Besides, because the private sector wants to get back returns from their investment, they usually provide capital, management and organisational and technical capacities to ensure effective service delivery.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

The study sought to examine the PPP in the management of solid waste in the SunyaniMunicipality. This chapter looks at how the study was conducted. The chapter has been sub-divided into study setting, research design, study population, sample and sampling procedure, and sources of data. It also considers the research instruments, ethical issues, data collection procedure as well as data processing and analysis and limitations of the study.

The Study Setting

Sunyani Municipality is one of the twenty-seven districts in the BrongAhafo Region. The municipality was established on 10th March, 1989 by a legislative instrument (LI, 1473). This was the period Ghana adopted the decentralisationconcept. The Sunyani Municipality shares boundaries with Sunyani West District to the North, Dormaa East District to the West, Asutifi District to the South and Tano North District to the East (see Figure 2 for map). The Sunyani West District was carved from this municipality in November 2007. The Sunyani Municipal Assembly is responsible for the administration and development of the municipality. The Assembly has three councils, namely; Sunyani Urban Council, Abesim Town Council and Atronie Area Council.

The Assembly's mandate is enshrined in the 1992 Constitution of Ghana and other key legislations such as the Local Government Act 1993 (Act 462). The municipality has 50 assembly members. This consists of the Municipal Chief Executive, the Member of Parliament, 34 elected and 14 government appointees. These members meet periodically to formulate policies, make bye-laws, and approve decisions for the governance of the Assembly.

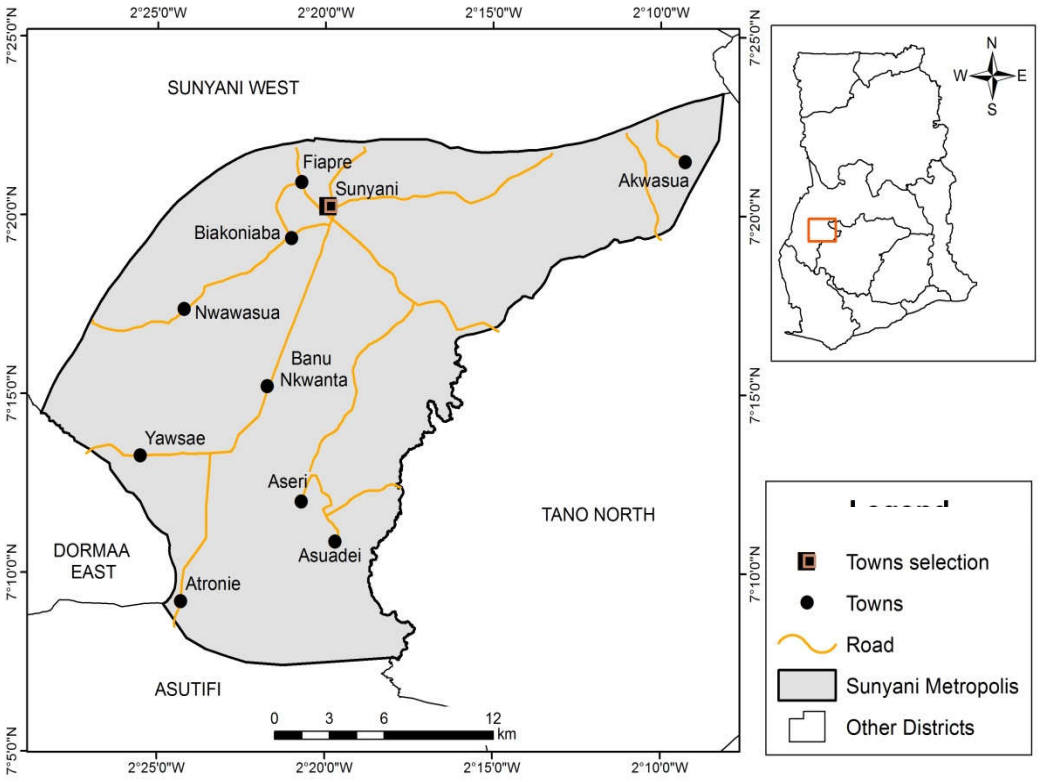

***Figure 2*: Map of Sunyani Municipality showing settlements**

Source: University of Cape Coast Cartographic Unit, 2016

There are 7 sub-committees, 13decentralised departments and 67 unit committees which provide technical support to the assembly. The three largest localities in the municipality namely Sunyani, Abesim and New

Dormaaaccommodate 74.3 percent of the total municipal population. The Municipal capital, Sunyani accommodates approximately 60 percent of the total population. The municipality has a total land area of 829.3 Square Kilometres (320.1square miles). Sunyani is growing rapidly in terms of size and business to engulf suburbs of Fiapre and Odomase in the Sunyani West district. It is also a clean and well maintained city with a thriving economy.

In the year 2000, the population of Sunyani Municipality was 101,145. However, the population of the municipality increased to 123,224 in 2010 with a growth rate of 3.8 percent (Ghana Statistical Service, 2010). The 2016 population is thus estimated at 151,319. This indicates that social services delivery such as education, health, water, sanitation facilities among others need to be expanded to accommodate the increase population.

Over half of households (52.5%) in the municipality disposedoff their solid waste through public dump of which 59 percent of the households were in urban and 16.9 percent in ruralsettlements (Ghana Statistical Service (2010). About 17.4 percent of households in therural area used public dump as a method of disposing waste whiles less than 10 percent of households (8.5 %) had their solid waste collected. More rural households (16.9%) burnt their solid waste compared to 9.6 percent of urban households. The proportion of rural households (12.2 percent) that burried their solid waste is more than the proportion of urban households (3.2 percent) (Ghana Statistical Service (2010). The use of public dump in disposing solid waste affects waste management in the Sunyani Municipality because these dumps were not properly maintained. The

SunyaniMunicipal Assembly has three different dwellings. These are urban (Sunyani Urban Council), peri-urban (Abesim Town Council) and rural (Atronie Area Council).

Research Design

The study usedthe qualitative research approach. Qualitative methodological approach is based on diverse theoretical principles such as phenomenology, hermeneutics and social interactionism, employing methods of data collection and analysis that are non-quantitative, and aiming towards exploration of social relations, and describes reality as experienced by the respondents (Sarantakos, 2005). Yin (2003) argues that, qualitative research approach has recently become a pleasing, if not the mainstream, kind of research in both academic and professional fields of operation. Higgs and Cherry (2009), admitted that notwithstanding its reservations by some researchers, it has been incrementally regarded as a powerful and reliable tool for highlighting and appreciating the human world.

To Yauch and Steudel (2003), the major drawbacks associated with qualitative research are that, the process is time-consuming, a particular important issue could be overlooked and researchers' interpretations are limited. Yauch and Steudel (2003) insist that in qualitative research, personal experience and knowledge influence the observations and conclusions of the study.

The main rationale for adopting qualitative research design for this study was that, the study aimed at gaining in-depth insight into the partnership between Sunyani Municipal and Zoomlion Ghana Limited. This was done by interrogating

the various institutional arrangements put in place to ensure successful PPP in solid waste management. The qualitative research design was employed by using non-random sampling techniques in key informant interviews.

The specific study approach used was exploratory and descriptive. Exploratory research examines the relevant factors in detail to arrive at an appropriate description of the reality of the existing situation (Altheide& Johnson, 1998). Altheide and Johnson (1998) add that exploratory research attempts to identify new knowledge, new insights, new meanings and the factors related to the issue. Babbie (2004) concedes that the results of exploratory studies provide a better understanding of the sample being examined. Though the work of Anane (2012) has established that measures to manage waste in the municipality have been suspect, research is yet to reveal specifically the state of affairs in the city and the factors that have led to the existing situation. Therefore the use of exploratory research design helped to identify new knowledge and a deep insight into solid waste management in the municipality.

The studyalso used descriptive design because it entails a systematic collection and presentation of data on various issues of PPP in solid waste management in the Sunyani Municipality to give a clearer picture of the prevailing situation.The main idea behind using descriptive design is to better define an opinion, attitude, or behaviour held by a group of people on a given subject (Amedahe, 2002). An exploratory descriptive research design provides an opportunity to examine all aspects of the problem (Sarantakos, 2005). It was appropriate to use the exploratory and descriptive study to interrogate the

institutional arrangements regarding the PPP in solid waste management in the Sunyani Municipality. The study sought to determine the nature of prevailing conditions, practices, attitude, opinions held by persons with regard to the structure of organisations involved in the management of waste in the municipality. Again, it explored and examined all aspects of the contracting, monitoring and sanctioning systems underlying solid waste management in the municipality. The exploratory and descriptive nature of this study provided the researcher the opportunity to also interrogate roles and the relationship between actors of PPP in solid waste management and make appropriate recommendations for arrangements regarding the public private partnership in solid waste management in Sunyani.

Study Population

According to Babbie (2004), population is the group to which the results of the study are intended to apply. It is the population about which the researcher is interested in gaining information and drawing conclusions (Sarantakos, 2005). Key stakeholders in public private partnership in solid waste management formed the study population. These are the Municipal Assembly and Zoomlion Ghana Limited. The memorandum of understanding between the Assembly and Zoomlion Ghana Limited mandates officers from the Assembly to monitorthe service provided by the private partner. Zoomlion Ghana Limited has supervisors who monitor the work of project staff. Project staff are the workers who are responsible for cleaning public spaces and drains. Even though they work with Zoomlion Ghana Limited, they are employees of the Municipal Assembly. The

Environmental Health Analyst according to the PPP arrangement in Sunyani Municipality is the head of the monitoring team in the Assembly. The Municipal Chief Executive, Municipal Coordinating Director and the Planning Officer are other key officers who ensure contract performance.

Sample and Sampling Procedure

The study employed purposive sampling techniques to draw respondents for the study. In his view, Babbie (2004) posits that purposive sampling is a type of sampling technique in which the sample selection is based on judgments about which sections of the population will be the most representative. The underlying assumption behind the use of this technique was that with good judgment and appropriate strategy, the researcher could handpick the cases to be included in the sample and thus develop sample units that are relevant and satisfactory for the study.

Elected Assembly Members in the municipality were purposively selected from the communities for the study because of their respective roles in the solid waste management in the municipality as law makers and representatives of thecommunities in which solid waste is generated. The Planning Officer, Environmental Health Analyst and the Municipal Operations Officer of Zoomlion Ghana Limited were covered due to the critical roles they play in solid waste management in the Sunyani Municipality.

Sources of Data

The study used both primary and secondary data. Primary data was gathered from respondents, while secondary data was derived from documents which had agreements on thepublic private partnership, solid waste and environmental issues in the Municipal Assembly. Also other documents such as the Environmental Sanitation Policy, 2010and the Assembly's bye-laws on solid waste disposal and management were gathered for analysis. Table 1 shows the various categories of respondents used for the study.

Table 1-*Respondents used for the Study*

Category of Respondents	No. of Respondents
Elected Assembly members	28
Male	26
Female	2
Key informants for the study	
Municipal Co-ordinating Director	1
Planning Officer	1
Environmental Health Officer	1
Zoomlion Ghana Limited	1
Total number of respondents	32

Source: Field Survey, Yeboah (2016)

Data Collection Techniques

Primary data collection technique used in this study wassemi-structured interviewing and non-participant observation. Documentary review was used to analyse the existing policies that guide solid waste management and the PPP arrangement in Sunyani.Semi-structured interviews were employed to solicit individual perspectives on public private partnership in solid waste management from officials of the Sunyani Municipal Assembly, Assembly members and private service provider (Zoomlion Ghana Limited). Semi-structured interviews wereusedbecauseofitsknownadvantagesof buildinggoodrapport,creatingarelaxedandhealthyatmosphereinwhich respondentseasilycooperate,answerquestions,andclearmisapprehensionabout anyaspectofastudy (Babbie, 2004).

Observation entails the systematic noting and recording of events, behaviours, and objects in the social setting (Marshal &Rossman, 2011). Non-participant observation was employed to study solid waste management process such as solid waste collection, storage, transportation, and final disposal site. All these processes were observed. The non-participant observation presented an opportunity to validate some responses of the respondents.Equipment and logistics of the private company contracted to manage waste in Sunyani were also observed. Babbie (2005) insists that one advantage of the field research is the presence of an observing researcher at the scene of the action.

Cleaning of public spaces such as streets and markets were observed. Solid waste containers and skip containers and the final disposal site were visited

to observe the process. Equipment used for transporting solid waste were also observed as part of assessing the capacity of Zoomlion Ghana Limited in delivering services. It was also important to observe equipment during their use to understand the maintenance culture of actors of PPP in the Sunyani Municipal Assembly.

Documentary review is an unobstructive data collection method which is non-reactive since documents cannot be influenced by the fact that they are being used (Robson, 2002). According to Bryman (2004), organisations as well as government, and in this case local government produce many documents. The Assembly's bye-laws on waste management, memorandum of understanding between the Assembly and Zoomlion Ghana Limited were subsequently reviewed. Other documents reviewed include National Sanitation Policy (2010). The documentary review offered the opportunity to understand the various institutional arrangements guiding solid waste management in SunyaniMunicipality especially with regards to the PPP arrangement.

Documentary reviews helped in giving insights into contract terms between actors, relationship and roles between actors, monitoring, sanctioning of performance and PPP process in Sunyani Municipal Assembly. Notes were taken and checklist marked during documentary reviews. It must be noted that recorders and cameras cannot capture all the relevant aspects of the social processes. Consequently, in both direct observation and interviewing, full and accurate notes of the interviews and observations were taken. In cases where notes taking could

not be done during direct observation, notes were taken immediately after the observation.

Data Collection Instruments

The main instruments used for the collection were interview guides, observation checklist and documentary review checklist. Interview guides were used to collect data from the Municipal Planning Officer and Environmental Health Analyst while the same instrument was employed to solicit data from the Zoomlion Ghana Limited. The semi-structured interview guide was organised around themes derived from the study objectives. Solid waste generation in the municipality, stakeholders view on the partnership between actors, structure of organisations involved in PPP, contracting, monitoring, and sanctioning, relationship between actors in PPP were the themes in which questions asked during the interviews were derived.

Observation checklist was adopted to ensure systematic recording of events. The observation checklist was structured around solid waste management processes, various infrastructure and logistics of Zoomlion Ghana Limited.Recorders were used during interviews to capture respondents' responses with their permission. A camera was used to capturesome of events the researcher observed.

Fieldwork

Data gathering was carried out in the month of May 2016. The researcher visited Sunyani and met various key stakeholdersto book appointments for the

interviews before the actual data gathering exercise. Between three and six interviews were conducted a day. Key informant interviews lasted an average of 50 minutes. The issues in the interview guides enabled the researcher to translate questions that were not clear to respondents into Twi language which is widely spoken in Sunyani. Permission was sought to record respondents but only few allowed their voices to be taped.

Data Processing and Analysis

According to Amedahe (2002), analysis of data involves ordering and breaking down of data into constituent parts with raw data to provide answers to the questions initiating the research. The collected data from the field was edited for spelling mistakes and inconsistencies. That is data was further cleaned to ensure that all the instructions were followed and checked whether all questions were answered, before entries were made for analysis. This exercise included certifying some figures provided by the officers of the key institutions.The data was further re-organised in a form suitable for qualitative analysis. Qualitative analysis took the form of transcribing recorded tapes, content and documentary analyses. Babbie (2004) and Sarantakos (2005) argued that with data collected by the use of interview guides, researchers ought to be guided by an analytical procedure which creates flexibility for qualitative studies. Documentary and descriptiveanalysis were employed to interrogate the institutional arrangement of public private partnership in solid waste management.

The analysis of data was done manually. Content and thematic analyses were done for the various research objectives.The data was coded after identifying

common trends. These common trends from the data was organised into various thematic areas. Here the various responses provided by the respondents on the structure of organisations involved in PPP in solid waste management were collated, coded, grouped and discussed, with relevant quotations used to enrich the discussion. A similar analytical procedure was used to evaluate the systems put in place for monitoring, sanctioning of performance and public perception on PPP. Qualitative analysis was used to discuss the relationship between actors involved in PPP in solid waste management in the municipality. That is, responses provided by respondents were collated, coded using the conceptual framework as a guide for the discussion. Relevant quotations were used to enrich the discussion. Finally, qualitative contentanalysis was used to analysesecondary data.

Limitations of the Study

Some limitations faced during data gathering exercise emerged from the fact that some Members of Assembly were monitoring the limited voters' registration exercise and were thus difficult to reach. Others were not ready to respond to the interview because they were not comfortable talking about the Assembly and the PPP arrangements. The support of officials of the Sunyani Municipal Assembly who explained the importance of the study to the Assembly members helped to overcome this limitation.Finally, data on resources and contract documents of both the SMA and Zoomlion Ghana Limited were inaccessible. The intervention of the Institute for Development Studies who explained the importance of the study helped to overcome these limitations except data on human resources which were still inaccessible.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

This chapter discusses the data obtained from the field. The analysis and discussions were presented in five main themes namely; structure of organisations involved in PPP, contracting, monitoring, and sanctioning, relationship between actors, solid waste generation in the municipality and stakeholders view on the partnership between the Assembly and Zoomlion Ghana Limited. In all thirty two (32) respondents comprising different stakeholder groups took part in the study. Views of respondents were solicited using interviews. Content and thematic analyses were done for the various research objectives. Here the various responses provided by the respondents on the structure of organisations involved in PPP, monitoring and sanctioning of performance, roles and relationship and public perception on PPP and solid waste management in Sunyani were collated, coded, grouped and discussed.

Structure of Organisations Involved in PPP

The first objective of the study was to examine the structure of organisations involved in PPP in the Sunyani Municipality. The objective was measured under two perspectives namely regulatory and legal frameworkand resources. The structure of organisationswasexamined by policies, rules, regulations and resources of actors. Existing policies, rules and regulations define the kind of regulatory and legal framework of an institution. From the conceptual framework (Figure 1), the availability of resources of an organisation helps us tounderstand the structure of that organisation.

Regulatory framework on PPP in Solid Waste Management

Regulatory and legal framework is important for solid waste management. These include policies, rules and regulations to protect the people, environment and the partnership. Solid waste management in Sunyani was guided by the Local Government Law (1988), PNDC Law 207, Local Government Act (1993), Act 462, the Environmental Protection Agency Act (1994), Act 490, Pesticides Control and Management Act (1996), Act 528. Others included the Environmental Assessment Regulations 1999, (LI 1652), the Environmental Sanitation Policy of Ghana (2010), the Assembly's Bye-laws on Waste Disposal/Management, memorandum of understanding between Sunyani Municipal Assembly and Zoomlion Ghana Limited.

With regards to regulatory and legal framework for PPP in solid waste management in the Sunyani Municipality, the documentary analysis centred on policies, rules and regulations for solid waste management and the PPP. The examination of the existingdocuments revealed that, the Assembly had a contract in the form of memorandum of understanding with Zoomlion Ghana Limited. The memorandum of understanding outlined the roles of various actors in the partnership. For example, the Assembly was responsible for the provision of solid waste disposal site; employment of project staff, payment of contract fees to the private company, monitoring and sanctioningfor non-performance. On the other hand, Zoomlion Ghana Limited was responsible for the collection, storage and transportation of solid waste to the final disposal site. This specification is important because it helped to avoid conflict between partners.

From the existing documents reviewed, it was found that even the memorandum of understanding between the Assembly and Zoomlion Ghana Limited was signed by the Ministry of Local Government and Rural Development in Accra for and on behalf of Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana. The Sunyani Municipal Assembly and Assembly Members who are representatives of the people were not involved in the planning stage.The Ministry of Local Government and Rural Development has thus charged MMDAs to monitor the contract to ensure the success of the PPP arrangement.

The study also revealed that although the Assembly had bye-laws on waste disposal and management in the municipality, the municipality had no policy or legal framework to guide thepublic private partnership in solid waste management. This means that the Assembly only had the National Policy on PPP arrangements as the guidelines for the conduct of activities. However, interviews and discussions with the respondents from the SMA and Zoomlionrevealed that they were not conversant with the National Policy on PPP arrangement which could guide the PPP arrangement in the absence of a policy for the SunyaniMunicipality.

Importantly, interviews with the Assembly members on regulatory and legal framework revealed that most Assembly members were not aware of any policy or legal and regulatory framework even at the national level that guides the PPP arrangement. They indicated that they only knew that the Assembly had a contract with Zoomlion Ghana Limited to collect, store and transport solid waste to the final disposal site. The respondents generally indicated that they did not

know what the contract talks about. Some Assembly members revealed that "sometimes there is a problem with service delivery but because we don't know our role in the contract, we donot say or do anything about it. We have not even seen the contract terms before".

From the above discussions, it could be seen that the partnership between the Assembly and the Zoomlion Company Limited was largely guided by the memorandum of understanding. It was revealed that, theSunyani Municipal Assembly did not have a policy or regulatory framework on PPP arrangements to regulate the conduct of the operations. Also, the existing bye-laws on solid waste management at the assembly did not have any component for the PPP arrangements to regulate the conduct of the operations. The National Policy Guidelines on PPP in solid waste management which is the only regulatory framework for the assembly was also not fully known to the respondents. This is evident in the lack of understanding of the PPP arrangement by assembly members. The existing situation at the Sunyani Municipal Assembly presents a challenge to the successful implementation of PPP projects. This is because the success of PPP arrangements depends on a clear and well defined regulatory and legal framework.

The results of the regulatory and legal framework aresimilar to the findings of Ahmed and Ali (2004). Ahmed and Ali (2004) explained that laws and regulations are weak in the developing world and inability to handle the problem is also one of the major issues to PPP. According to Awortwi (2004), for a PPP to deliver its expected results, all actors in the partnership arrangement are required

to execute their assigned responsibilities. Otherwise, it may lead to wrong way of doing things or utter failure of the projects. Weaknesses in laws and regulations have become a cost to the success of PPP implementation.From the Conceptual Framework (Figure 1), it is evident that the absence of policies and regulations present a challenge to both the conceptual and practical relevance of PPP in solid waste management.

Resources

Resources are very vital in the successful implementation of any policy.In order to understand the resources of actors, the exploratory study focused on resources of both the public and the private actors. Resources under this study werefinancial and technical resources. Financial resources for the implementation and sustainability of PPPs are crucial. This is because prior to the implementation of PPP, the public partner faced challenges in managing solid waste partly due to inadequate funding. The private partner is seen to be financially sound than the public partner. Under the current PPP arrangement between Sunyani Municipal Assembly and Zoomlion Ghana Limited, the public sector has the responsibility for paying the private company for the services it provides. This model of PPP is called management contract. This model as observed was used because;the provision of solid waste services is a social good and thus the responsibility of government.

Documentary reviews and the results from the interviews revealed that, there was over reliance on the public sector by the private sector for funding because of this arrangement. Funding for the PPP arrangement largely came from

the Assembly which affects the delivery of waste services. This wasbecause Zoomlion Ghana Limited was unable to pay its staff and also maintain their equipment anytime funds from the District Assembly Common Fund were delayed.

There were divergent responses on whether Zoomlion Ghana Limited had the financial resources to ensure the successful implementation of the PPP arrangements. The respondent from ZoomlionGhana Limited believed they had enough finance for solid waste management in Sunyani. On the other hand, respondents from the SMAindicated that, they provided the funding to Zoomlion for waste management. They paidZoomlionfor the service they provided to the Assembly.

Contrary to responses of respondents from the Assembly and Zoomlion, interviews with the Assembly members revealed that, Zoomlion Ghana Limited did not have the requisite financial capacity to ensure successful implementation of PPP in solid waste management. Some of the respondents remarked:

> If Zoomlion had enough money there would not be poor service delivery anytime there was a delay in paying the private partner. Sometimes when we see that solid waste in containers are left uncollected and we ask project staff, they tell us government has not paid them.

Thus, in terms of financial resources, the respondents generally believed whilst the responsibility lies with the Assembly to provide funds, the private partner, Zoomlion Ghana Limited, should also be well financed in order to discharge their duties effectively. The reason attributed to this position by the respondents is that

the company will be able to pay their staff and maintain equipment anytime the Assembly delays in performing its financial responsibility.

Although logic may be on the side of the respondents regarding the need for a financially capable private partner, the theoretical orientations of the management contract model of PPP do not support that. This is because under the management contract, the public partner provides the financial enablement for the arrangements. As indicated earlier on, the government of Ghana could not use any other model because solid waste management is a public good. Therefore it is the obligation of government throughout the world to ensure that their citizens are provided with hygienic disposal of waste. Apart from health reasons, government provides solid waste services as a public good to cater for the poor and vulnerable in the society. The implication of this is that funding for solid waste services only comes from government. This presents a major setback to the PPP arrangement. However, what is vital about the position of the respondents lies in their seeming misunderstanding of the kind of PPP arrangements in solid waste management entered into by the government of Ghana.One problem with the current contractual arrangement is top down in approach which was used without the involvement of all stakeholders. This is because the assembly did not have much control over the process. The provision of public goods calls for participation of all stakeholders. Thus the involvement of key stakeholders in the contractual arrangement cannot be overemphasised.

Managing waste by the private sector requires huge financial investments. For example in Nairobi, 47 percent of the city dwellers pay US$ 1.25 per month

for good waste management services. If the private sector does not have money to invest and hikes prices, people will not cooperate. It is therefore very difficult to manage the garbage well and the private sector cannot ensure clean environment (Henry, 2006). The results of financial resources support Muneera's (2012) observationthat the public sector is financially constrained to provide WM services. Muneera (2012) concludes that any arrangement regarding SWM with the public sector as the sole provider of funds is unsustainable because even if they collect taxes from the people, still that money is not enough to provide good services. Therefore, it is important that the private sector provides funding to support the PPP arrangement. Beyond this, the Conceptual Framework (Figure 1) illustrates that for PPP in solid waste management to be successful there is the need to ensure adequate financial resource as well as increased participation of all stakeholders.

Policies and technical resources combine with financial and human resources to achieve successful implementation of projects. The delivery of solid waste management services cannot be achieved without the use of appropriate and adequate logistics. The study looked at the actors' capacity in solid waste collection systems, transfer and recycling systems. The observation and documentary review looked at solid waste containers, vehicles for waste transfer, provision of protective clothing, temporary waste storage and transfer points, facilities for recycling and the procedures for operating and maintaining facilities.

In responding to technical resources, all the respondents from the Municipal Assembly, Assembly members and Zoomlion Ghana Limited

commented that though the private sector had some trucks, skip containers, containers or waste bins, tricycles and vehicles for the management of solid waste in the municipality, they were inadequate.The respondents generally believed that solid waste management in the municipality had improved since the private waste management company was contracted. They collect, store and dispose waste from skip containers on time. It was revealed that recently Zoomlion Ghana Limited had purchased skip loader trucks, 'roll on-roll off' vehicles, tricycles which were already in use in the municipality. Figures 3 and 4 show the tricycles and skip trucks for solid waste management in the Sunyani Municipality. This confirms responses of respondents that Zoomlion Ghana Limited had secured new solid waste management equipment.

***Figure 3*: Tricycles for Solid Waste Management in SunyaniMunicipaity**

Photo credit: Fieldwork, 2016

***Figure 4*: One of the New Skip Trucks for Solid Waste Management in Sunyani**

Photo credit: Field work, 2016

On the other hand, respondents revealed that the main challenge they had now was recycling of solid waste at the final disposal site. They disclosed that Zoomlion Ghana Limited did not recycle solid waste that was collected in the municipality. One of the respondents stated that solid waste collection was not a major problem in the municipality even before Zoomlion Ghana Limited contracted. The problem the municipal assembly faced was managing the final disposal site. It was expected that Zoomlion Ghana as a private partner will invest in recycling but that has not been the case.

The discussions on resources revealed that even though the Sunyani Municipal Assembly and Zoomlion had joined resources such as vehicles, containers and project staff together to manage solid waste in Sunyani, not all

residents were served. Maintenance of equipment was poor as many vehicles have been left to deteriorate. Observations revealed that both the Sunyani Municipal Assembly and Zoomlion Ghana Limited did not have the needed technical capacity to properly manage the final disposal site. The outmoded push, level and open-burning method were used.

Beyond this, the conceptual framework (Figure 1) illustrates that with adequate technical and other resources; there will be a successful implementation of PPP in solid waste management. The results of this study on technical and financial resources confirm the views of Batley (1996) and Stein (2000) cited in Adam, (2012). The authors argued that, the private sector in waste management in Africa and developing world lacks both technical skill and finance. This jeopardises the successful implementation of PPPs in waste management in Africa and the developing world. Oduro-Kwarteng (2011) found in his study that entities with the necessary technical resources can largely address issues of solid waste management when given the opportunity.

Contracting, Monitoring and Sanctioning Measures

The second objective of the study was to evaluate the contracting, monitoring, and sanctioning measures put in place for the success of PPP taking into consideration the Principal Agent theory. In order to understand the contracting, monitoring and sanctioning measures, the analysis focused on participation/decentralisation, competition, transparency, relationship and roles of actors.

Contracting

Participation/decentralisation

The PPP arrangement between the Sunyani Municipal Assembly and Zoomlion was highly centralised. The agreement was signed between the Local Government Ministry and Zoomlion Ghana Limited in Accra. Metropolitan, Municipal and District Assemblies were mandated to monitor and ensure compliance of the provisions in the contract. This is a top-down policy approach. The Sunyani Municipal Assembly had a memorandum of understanding with Zoomlion Ghana Limited for the provision of solid waste services such as collection, storage and disposal of solid waste. As law makers and community representatives, Assembly Members were required to compliment the Environmental Health Analyst efforts in monitoring the performance of the private partner. Unfortunately, details of the contract were not known to Members of the Assembly.

In responding to the question on the nature of the contract, a key informant revealed:

> You see, the contract with Zoomlion Ghana Limited was signed in Accra and we are required to monitor and ensure contract performance. The Assembly has no control over the contract. Under the current arrangement, Zoomlion Ghana Limited receives its service fee directly from the District Assemblies Common Fund. Sometimes they do not provide us with good service but their monies are paid to them because we donot have a final decision on it. The only thing we can do is to caution them when they default in performing their assigned duty.

The above positions and discussions on participation support the views of Schübeleret al., (1996). According to the authors implementing a proper waste management policy implies a strong involvement from the public authorities running the service. This includes controlling costs, planning investment, negotiating contracts with service providers, monitoring performance, educating users, establishing and enforcing regulations, and involving producers and consumers (Schübeler et al., 1996).

Competition

The conceptual framework (Figure 1) illustrates that competition enhances efficiency in service delivery because each private partner wants to meet targets for future contractual renewal. In responding to whether the Assembly had other partners in waste management apart from Zoomlion Ghana Limited, arespondent from the SMA said:

> Currently, apart from Zoomlion Ghana Limited, we donot have any other private company in the collection, storage and disposal of solid waste but have contracted a waste management company which is responsible for the management of the dumping site only. We do not intend to engage the services of another private company for solid waste management. This is because we donot have much problem in the collection, but managing the final disposal site. Our concentration now is on the final disposal site. We have signed a memorandum of understanding with a private company called HRO ecosystem and they are going to burn solid waste to generate about sixty kilowatt (60KW) of power for the BrongAhafo Region and parts of the Ashanti Region.

Transparency

Transparency promotes participation which is important to the success of a public policy. The Conceptual Framework (Figure 1) shows that to ensure successful implementation of PPP, it is prudent to ensure that there is much information to all stakeholders. On the issue of transparency in the contract between Sunyani Municipal Assembly and Zoomlion Ghana Limited, some of the respondents mentioned that, the bureaucrats (top management members at the SMA) have kept the contractual agreement secret.

When asked whether they want to know the provisions in the contract, most respondents said they indeed wanted to know. They believed that Assembly members must know the details of the contract, and that they werein charge of legislating in themunicipality. It was therefore prudent for them to know the details of the contract. In the words of some of the respondents:

> If we were aware of the contract we can effectively help the Environmental Health Analyst in monitoring. We must not forget that, Zoomlion works in our communities. Sometimes we confront Zoomlion when we see that, some areas of the city are not clean or solid waste containers are left uncollected, because we are not aware of the details of the contract, they tell us that, they are not responsible for those areas. We must have details of the contract so that we can provide information to our electorates too.

The above discussions on participation/decentralisation, competition and transparency, buttress what was discussed earlier that the contract between the SMA and Zoomlion Ghana Limited was signed without the involvement of MMDAs. It was signed by the MLGRD for and on behalf of MMDAs.

ZoomlionGhana Limited was the only private organisation involved in solid waste management and enjoys monopoly in the delivery of solid waste services in Sunyani. Again, the interviews revealed that Assembly members were not privy to the contractual agreement between the Assembly and Zoomlion Ghana Limited. These presenta serious challenge to the successful implementation of the PPP arrangement. Ideally, a bottom up approach to the contractual arrangement ought to have been used. This is because the involvement of key stakeholders in designing, planning and contracting are key for acceptance, monitoring and understanding of the process. Making the memorandum of understanding transparent to all stakeholders was important to ensure checks and balances from key stakeholders especially Assembly members who were representatives of the people. For example, Assembly members revealed that they only knew that the Assembly has a contract with Zoomlion Ghana Limited but did not know the details of the contract.

Participation, competition and transparency are key issues in contracting under any PPP arrangement. Stakeholders in the PPP arrangement must be involved in both the planning and implementation stage. Competition in service delivery must be encouraged to promote efficiency in service delivery. Information regarding PPP arrangements must also be accessible to stakeholders. It is therefore difficultto achieve a successful implementation of PPP in solid waste management. The results on participation confirm the views expressed by Awortwi (2004). According to Awortwi (2004), previous PPPs failure to resolve Ghana's sanitation problem was attributable to the lack of strategic

communication (participation). Being a top-down in approach, neither the local people nor their representatives, that is, assembly members were involved in the waste management contractual arrangements. Addo-Yobo and Ali (2003) also noted that, in developing nations, generally there is poor communication of policies between stakeholders. Managers in high positions do not involve others in decision making. These decisions are usually top-down in approach and it is difficult to implement because apart from politicians and high ranking government officials, others are not given the chance to contribute in designing and planning the process (Addo-Yobo& Ali, 2003). Since the success of PPP in solid waste management depends on proper contracting arrangement as shown in the conceptual framework (Figure 1), then it is important that the various stakeholders are all involved in the process.

Monitoring

According to respondents from the Municipal Assembly, one of the critical roles the Assembly played was monitoring. Zoomlion Ghana Limited had District Supervisors who supervises project staff. Projectstaffwere waste management workers who clean the streets. These Supervisors also reported directly to the Municipal Environmental Health Analyst. When asked about monitoring measures the Assembly had put in place, a respondent from Zoomlion Ghana Limited revealed that as part of the public partner's monitoring measures, the Assembly endorses their monthly report before payments were made to them by the Local Government Ministry from the District Assembly Common Fund.

Contrary to claims of a respondent from Zoomlion Ghana Limited that there were monitoring mechanisms, the Assembly members think that, they must see officials of the Assembly visiting their electoral areas to inspect whether Zoomlion was doing the work assigned to them in the contract or not. According to Assembly members, this will help to prevent uncollected solid waste from waste containers. In asemi-structured interview with Assembly members, theysaid:

> As a result of poor monitoring by the Assembly because of poor monitoring mechanisms, waste bins and skip containers sometimes are left uncollected in the streets for days which spillover. The Assembly does not properly monitor. We expect to see them in our communities to make sure that skip containers and solid waste containers are emptied anytime they are full. When we see solid waste containers spillover in the public we confront Zoomlion but they give excuses and the Assembly also does little in this regard.

The discussions on monitoring present a divergent view on whether monitoring mechanisms at the Sunyani Municipality was strong or weak. Respondents from the Assembly andZoomlion Ghana Limited explained that monitoring of performance was strong in Sunyanibut the Assembly members indicated that monitoring of performance was weak. Assembly members' justification for saying monitoring was weak is that they did not see officials in their electoral areas monitoring how solid waste was managed. Again, solid wastes in some communities were left uncollected. Further observations revealed that, the Assembly's monitoring of performance was weak. It was observed that solid wastes in containers were left uncollected. Haphazard disposal of waste were

common in some parts of the municipality. Figures5and 6 show uncollected solid waste at the SunyaniTechnical Universitynew site and Rapid Road respectively. This buttresses the position of Assembly Members that, monitoring of performance was weak and that left some solid waste uncollected in the municipality.

The private actor will perform its role as enshrined in the contractual agreement if monitoring of performance is effective. Thus the success of PPP partly depends on monitoring. The private sector is profit oriented and will not relent on its roles of providing quality solid waste services if there is a strong monitoring mechanisms in place. The weak monitoring mechanism presents a major setback to the successful implementation of PPP arrangements in the Sunyani Municipality.

The weakness in monitoring,confirms the views ofAsare and Frimpong (2013). The authors explained that weak state capacity to monitor, co-ordinate and regulate partnership contracts contributed to the failure of earlier PPPs in Ghana.Awortwi (2004) also argued that PPP projects must be carried out under good monitoring systems. For a public private partnership to deliver its expected results all actors in the partnership arrangement are required to execute their assigned responsibilities and this can be achieved when there is effective monitoring (Awortwi, 2004).

Figure 5: **Uncollected Solid Waste Containers at Sunyani Technical UniversityNew Site**

Photo credit: Field work, 2016

Figure 6: **Open Dumping of Refuse at Rapid Road/GETFUND Junction**

Photo credit: Field work, 2016

Sanctioning

Both the public and private partners conceded that, there is a cordial relationship between them. Observations done suggested that the relationship between the parties had thus affected sanctioning of performance. It was expected that the public partner will monitor the performance of the private partner, evaluate and apply sanctions whenever possible.

According to the memorandum of understanding, sanctions were in the form of fines, compensation and abrogation of contracts. For example, if Zoomlion defaulted in performing its part of the contract then the Assembly was expected to fine them. The Assembly can also recommend to the Ministry of Local Government and Rural Development to abrogate the contract for non-performance. On the other hand, the Assembly pays compensation to Zoomlion Ghana Limited for default. Zoomlion Ghana Limited can also call for the abrogation of the contract if dissatisfied. Respondents from the Municipal Assembly, Assembly members and Zoomlion Ghana indicated that, issues of sanctioning have not come up before because of the relationship between them. They indicated that whenever there is an issue with the performance of Zoomlion work, they have a meeting and that is sorted. After that, both parties go back to perform their roles as enshrined by the memorandum of understanding.Some Assembly members remarked:

> The only thing the Assembly does is to caution them. Sometimes the Assembly invites them to Assembly sittings to explain why there is a problem in solid waste collection and disposal. After the explanation has been given to stakeholders they are advised to go back and keep the city clean.

From the above discussions, it can be noted that, even though the Assembly had put in place monitoring mechanisms, there was less or no sanctioning of performance in the PPP arrangement. This could be attributed to the relationship the Assembly had with Zoomlion Ghana Limited. For example, the study revealed that, ZoomlionGhana Limited sometimes provided services that were not contained in the contract such as training of project staff and other solid waste management staff of the SMA free of charge but as corporate social responsibility. They sometimes helped in managing the final disposal site. Due to the assistance Zoomlion Ghana Limited had been providing the SMA, the assembly failed to apply sanctions when the need arises. It is no wonder that there were uncollected solid wastes in the SunyaniMunicipality yet theofficials of the Assembly thoughtthat the partnership with Zoomlion Ghana Limited had brought vast improvement in solid waste management in the Sunyani Municipal Assembly.

In relation to sanctioning of poor performance, a similar observation was made byAkaateba and Yakubu (2013). They argued that, transferring waste collection services in the municipality to the private partner without the Assembly having the requisite resources to ensure contract enforcement, monitoring and sanctioning of contract terms, will not result in quality service delivery to the greater satisfaction of householders. This study shows that monitoring and sanctioning offer a huge challenge to the successful implementation of PPP by the assembly as pointed out by the conceptual framework (Figure 1). Figure

illustrates that to guarantee the success of PPP in solid waste management, there is the need for proper monitoring and sanctions.

Relationship between Actors

The term relationship describes how civil servants charged with the responsibility of implementing policies and private sector agents, who must respond to those incentives, interact in terms of the mutual trust and support that are provided. It also outlines the roles of the public and private actors in the PPP.

From the interviews and observations made, there was agood workingrelationship between the public and private actors. The study revealed that, Sunyani Municipal Assembly had been friendly and helpful to Zoomlion Ghana Limited. The contract stipulates that, the Assembly must provide an enabling environment for the successful implementation of the PPP arrangement. The Assembly had provided all the needed support to the private company to ensure effective solid waste management.

In commenting on the relationship between Sunyani Municipal Assembly and Zoomlion Ghana Limited, the respondent from Zoomlion Ghana Limited said:

> We have a very good relationship with the Assembly. The Municipal Assembly has been supportive and shown commitment to the partnership. Because of that, we do so many things outside the contract for them for free. For example, we train the staff of the Assembly in waste management without a fee but as a corporate social responsibility. We perform our roles as specified in the contract and where there is a disagreement or a problem, we resolve it amicably.

Respondents from the Municipal Assembly revealed that there was a good relationship between them and Zoomlion Ghana Limited. According to the respondents from the Assembly, Officers of Zoomlion visitedthem often and sometimes they did it daily. They always had discussions on how to improve solid waste management in the municipality.

The discussions above show that there was a good relationship between the Municipal Assembly and Zoomlion Ghana Limited. It is important to note that successful implementation of PPP projects depend largely on the relationship between actors. This prevents conflict in the performance of roles by actors. On the other hand, familiarity also affects monitoring and sanctioning of poor performance. That is, actors may compromise on monitoring and sanctioning bad standards.

Roles of Actors Involved in PPP

Public Partner

The Sunyani Municipal Assembly as part of the partnership provides funding for the partnership. The Assembly paidZoomlion Ghana Limited for the service it provides to the Assembly (collection, storage and transportation of solid waste). Funding for this project comes from the District Assembly Common Fund. As mentioned earlier, the money due Zoomlion Ghana Limited was deducted from source even before the Assembly received its share of the District Assembly Common Fund. The Assembly was responsible for the employment and remuneration of project staff. On the other hand, under the partnership, Zoomlion Ghana Limited was in charge of cleaning public spaces such as

markets, main roads, streets and lorry parks. Project staff are the Zoomlion Ghana Limited workers who sweep public spaces and clean the drains. They worked for Zoomlion Ghana Limited but were employed by the Municipal Assembly.

In responding to the questions on roles of the Assembly, a respondent from the Assembly remarked that even though most of these project staff worked with Zoomlion Ghana Limited, they were staff of the Municipal Assembly. It was the Assembly that employed and paid their remuneration. Zoomlion Ghana Limited only provided them with training in the form of capacity building.

The Municipal Assembly was also responsible for the provision of final disposal site and collection points for dumping of waste. With regard to the provision of final disposal site, respondentsfrom the Municipal Assembly, Assembly members and Zoomlion Ghana Limited stated that it was the sole responsibility of the Assembly to provide final disposal site for dumping of refuse. Spaces for skip containers and solid waste containers in the city were all part of the Assembly's responsibility. The private contractor was only responsible for collection, storage and transportation of solid waste.

The successful implementation of PPP projects largely depends on monitoring. Both the Assembly and Zoomlion Ghana Limited admitted that, one of the responsibilities of the Assembly was to monitor the work of Zoomlion Ghana Limited. According to the respondent from Zoomlion Ghana Limited, the Assembly monitors their performance and endorses monthly reports before they were paid. If the Assembly believed that theyhad underperformed, they asked them to correct it before reports were endorsed for payment.

Private Partner

According to the memorandum of understanding between these two actors, the private company, in this case Zoomlion Ghana Limited, was only responsible for the collection, storage and transportation of solid waste in public spaces. Even with the public spaces, the Assembly had demarcated it into two parts and Zoomlion Ghana Limited was responsible for one part and the Municipal Assembly was also responsible for the other part. The private company collects all solid waste from public areas within their zone such as streets, lorry parks and markets. The solid waste collected was stored temporarily in skip containers and solid waste containers at demarcated collection sites. Solid waste in the containers was collected into skip containers when they were filled to capacity. There was a skip container attendant who regulated activities at the skip container storage site. Skip containers were collected into skip trucks and transported to the final disposal site when filled to capacity. The final disposal site was an open dumping type.

Responding to the question on the roles of the private partner, all the respondents stated that, Zoomlion Ghana Limited was in charge of collection, storage and transportation of solid waste to final disposal site. The Assembly had contracted Zoomlion Ghana Limited to clean some portions of public spaces. The Assembly was responsible for the cleaning of the other portions of the municipality.

From the above discussions it can be noted that roles of actors in the PPP arrangement in the SunyaniMunicipality were well defined. Both the public and

private partners understood their roles as stipulated in the memorandum of understanding. The Assembly undertook its part of the contract by providing the needed support to Zoomlion Ghana Limited. Notwithstanding, it must also be noted that, sometimes there was a delay in the release of funds from the District Assembly Common Fund.Figure 7 shows the role of actors and how they were connected in the PPP arrangement.

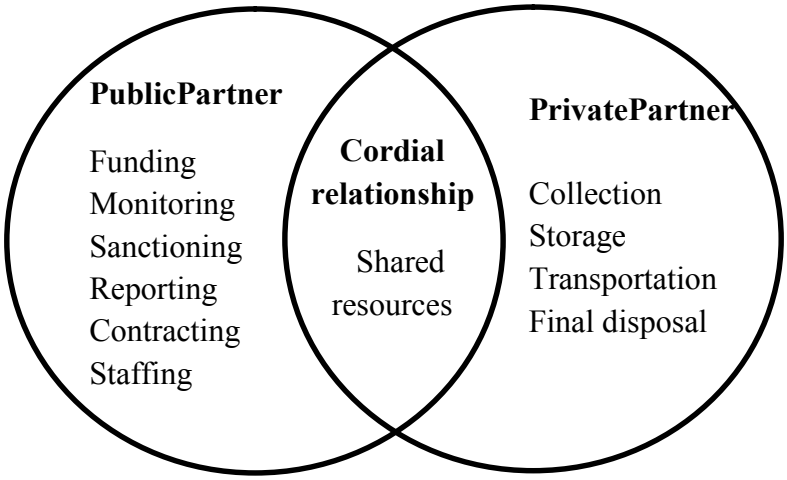

Figure 7: **Roles of Actors and how they are connected in the PPP Arrangement.**

Source: Field work, 2016

Public Perception on Solid Waste Generation and PPP

The increasing scale of economic activities and population growth in the world has contributed to an increase in the quantity of solid waste generated. Solid waste generation in the Sunyani Municipality was no different. Interviews with stakeholders in charge of solid waste management revealed that solid waste generation in Sunyani had increased over the years. One interviewee from the

Assembly intimated "my brother, the municipality had seen a continuous expansion in terms of the amount of solid waste generated. Solid waste was indeed becoming one major source of worry for us here".

A number of reasons were adduced to be responsible for the current phenomenon. For instance, it was observed that apart from economic activities and population growth, solid waste generation had increased because education on solid waste reduction seems not to resonate with the people. The responses of most Assembly members insemi-structured interviews revealed that solid waste generation in the municipality had increased. This was due to increase in per capita waste generation and increases in population. Respondents mentioned that Sunyani was growing so this phenomenon was normal. They explained that they expect solid waste generation to increase in the coming years. They further stated that what was important is how to respond to this increase to keep Sunyani clean.

Responding to the questions on the reasons why solid waste generation in the municipality had increased, the Municipal Operations Manager of Zoomlion Ghana Limited said "my brother, the first reason is that, Sunyani has seen population growth and the last census figures attest to this fact".

Another reason cited for the existing situation was poor environmental health awareness. This was corroborated by the views held by a respondent who stated that:

> People are not conscious about environmental health. They dispose waste haphazardly forgetting about their health and that of others in the community. Again, all the education we have done on solid waste reduction has fallen on deaf ears.

> We have been using community meetings and the media to do this education but per capita waste generation in the municipality keeps increasing.

Implementation of a policy requires that goals and objectives of the policy were known by stakeholders since goals and objectives cannot be achieved without the contribution of these stakeholders. Under this section, respondents were asked about their views on the PPP arrangement between the Assembly and Zoomlion Ghana Limited. From the data gathered all the participants without delay answered that the PPP arrangement was good even though some had reservations. Other respondents added that the Assembly was doing quite well with the arrangement they have with Zoomlion Ghana Limited. A Respondent from Zoomlion Ghana Limited also indicated that as early as 4 o'clock am their men and women were in the streets and other public spaces cleaning. By 6 o'clock am, the municipality was very clean. The officer indicated:

> If our attitudes were good, we would not see any filth in the city by 6 o'clock am each day. We clean public spaces every morning but as soon as economic activities start and people come to town, refuse is seen in these places again.

Most of the views expressed in the semi-structured interviews session showed that Zoomlion Ghana Limited had contributed immensely to solid waste management in the municipality. The Assembly members were of the view that since Zoomlion Ghana Limited was contracted to help the Assembly in solid waste management, there has been much improvement in waste collection, transportation and disposal. Again, Assembly members said that public spaces were clean and they continue to enjoy their tag as the cleanest city in Ghana. Notwithstanding the

improvement, Assembly members stated that Zoomlion Ghana Limited must improve on their maintenance culture because the municipality becomes dirty anytime their (Zoomlion Ghana Limited) vehicles breakdown. They stated that solid waste was left uncollected during this period and it was bad for the partnership.

Observation outcomes did not support the claims of respondents wholly. Some places in Sunyani, such as the Central Business District, Ghana Cocoa Board Avenue and the main lorry station were very clean especially during the early hours of the day as mentioned by respondents. Some parts of the municipality were unclean. Uncollected solid waste containers and indiscriminate dumping of solid waste was common in the Rapid road, Abesim and Atronie communities of the Sunyani Municipality.

Solid Waste Management in the Municipality

In order to understand the solid waste management process and the partnership between the Municipal Assembly and Zoomlion Ghana Limited, the study focused on public spaces. The Municipal Environmental Health Analyst and the Municipal Operations Manager of Zoomlion disclosed that, the main method of treatment at the final disposal site was open burning. Bulldozers and compactors were used to push and level the final disposal site to make room for further dumping. It was revealed that the final disposal site was occasionally fumigated to kill microorganisms and to reduce the stench.

According to respondents from the Municipal Assembly, there had been an improvement in solid waste management in the municipality compared to the

past. For instance, in responding to solid waste management situation in the municipality, a respondent from the Assembly said:

> I know you are aware that, Sunyani is the cleanest city in Ghana. We are very proud about our tag as the cleanest city and are doing everything to keep that tag. Currently, our challenge to solid waste management has been residents who dump refuse in gutters with the hope that, storm water will dispose them.

Figures 8 and 9 show the state of the final waste disposal site in the municipality. It can be observed from the diagrams that management of solid waste at the final disposal site was not the best.There was no source reduction at the final disposal site. Source reduction is an attempt to reduce the volume or toxicity of solid waste generated. There were no landfills, processing and incineration facilities at the municipality. Indeed, the present situation which allowed only one company in the PPP arrangement did not create room for competition from other private entities and also challenges the very intention of the public choice theory. This theory advocates for an economy being dictated by the market through increased competition for the ultimate good of the citizen.

***Figure 8*: Final Disposal Site of Sunyani Municipal Assembly**

Photo credit: Fieldwork, 2016

Figure 9: Skip Truck at the Disposal Site to Offload Collected Waste

Photo credit: Fieldwork, 2016

Recycling is one of the most important aspects of solid waste management. Observations and interviews done revealed that Sunyani had no facilities for recycling. Solid waste was collected and dumped at the final disposal site. Figure 10 shows the solid waste management process in the PPP arrangement at Sunyani Municipal**.** When asked whether solid waste at the municipality was recycled, the stakeholders in solid waste management in Sunyani said that the Assembly did not recycle solid waste for now. They added that the Assembly burnt the solid waste at the final disposal site and used bulldozer and compactor to push and level it to make room for further disposal of collected solid waste. A respondent from the Municipal Assembly said:

> We have signed a memorandum of understanding with HRO ecosystem to use the solid waste to generate 60 watts of electricity for the BrongAhafo Region and parts of Ashanti Region. TheMunicipal Operations Manager of Zoomlion Ghana Limited also revealed that, plans were far advanced to recycle plastic waste as part of managing solid waste generated in the municipality.

In order to confirm this claim, the researcher visited the site demarcated for recycling. The site had been cleared for work to commence.

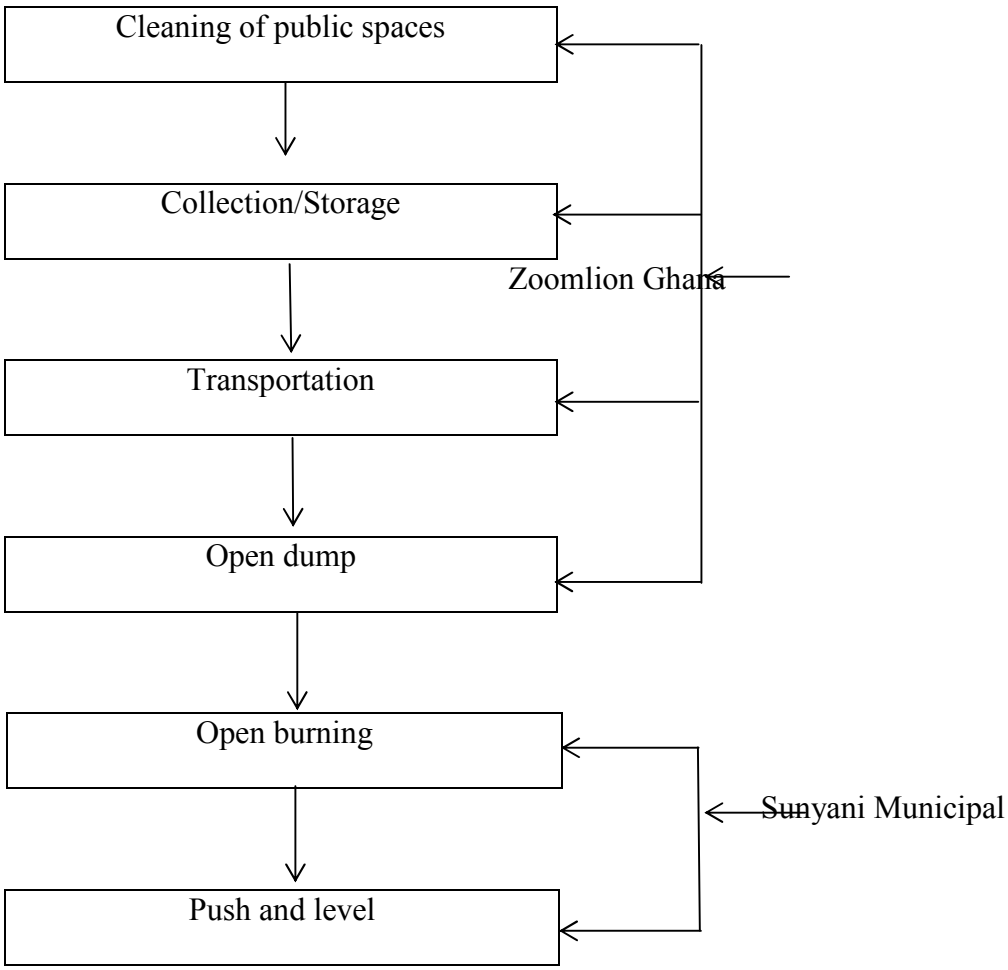

***Figure 10*: Solid Waste Management Process in the PPP Arrangement at SunyaniMunicipal**

Source: Field work, 2016

The above discussions indicate that indeed waste generation in Sunyani had increased as revealed by respondents. This was partly due to population growth, poor environmental and solid waste reduction awareness. Education on solid waste reduction and environmental awareness had not been taken serious by

householders because they do not know the consequences of increase waste generation to the environment and human health.

Chapter Summary

The study established that solid waste management in the municipality was guided by national laws on environmental health and the Sunyani Municipal Waste Disposal/Management bye-laws of 2006. A memorandum of understanding guides the PPP arrangement in Sunyani. However, the Sunyani Municipal Assembly lacked a legal and regulatory framework to guide the PPP arrangement. It was also revealed that, even though the private partner had some resources, they were inadequate for the effective management of solid waste in Sunyani under the PPP arrangement. It was further observed that funding and investment for the PPP arrangement largely came from the public partner with little or no funding from the private partner. The Assembly did not use contemporary solid waste management methods such as source reduction, sanitary landfills, composting and incineration in solid waste management in Sunyani.

It was established that the PPP model used was management contract. Zoomlion Ghana Limited enjoys monopoly as far as the delivery of solid waste service was concerned. It was the sole company providing solid waste management in the municipality. Monitoring and sanctioning of performance in the PPP arrangement in the Sunyani Municipality was found to be weak. It can be explained that there was a good relationship between partners. It was also established that the various actors knew their respective roles in the partnership.

The main findings of the study suggested that institutional arrangements guiding PPP in the Sunyani Municipality generally was weak. Schubeler et al. (1996) and Da Zhul et al. (2008) explained that institutional structures, arrangements and capacity of responsible institutions are vital for the successful implementation of any PPP arrangement.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary, conclusions and recommendations from the study. The chapter is divided into three main parts. The first section presents summary of findings from the study. The second part covers conclusion drawn from the findings. The last part offers recommendations to stakeholders in solid waste management in Ghana and some suggestions for further research.

Summary

The study set out to interrogate the institutional arrangements in PPP in solid waste management in Sunyani. The qualitative research approach was used for the study. The study specifically adopted both exploratory and descriptive study designs. Purposive sampling was used to select respondents for the study. In all, 32 respondents comprising officials from the Sunyani Municipal Assembly, Zoomlion Ghana Limited and Assembly members were selected for the study. Primary data was collected through face to face interviews and observation. Secondary data was also used for the study. Data obtained from the study was processed manually and analysed.

Main Findings

The first objective of the study examined the structure of organisations involved in PPP in Sunyani. The study established thatsolid waste management in

the municipality was guided by national laws on environmental health and the Sunyani Municipal Waste Disposal/Management bye-laws of 2006.A memorandum of understanding guides the PPP arrangement in Sunyani. However, the Assembly lacked a legal and regulatory framework to guide the PPP arrangement. That is, the Assembly has no policy and regulation to guide the PPP arrangement in the Sunyani Municipality. The study found that, even though the private partner had some resources, they were inadequate for the effective management of solid waste in Sunyaniunder a PPP arrangement. The study further observed that funding and investment for the PPP arrangement largely came from the public partner with little or no funding from the private partner. This is because the PPP model under which the contractual agreement for solid waste management in the Sunyani Municipality was made is management contract.The study also found that the Assembly did not use contemporary solid waste management methods such as source reduction, sanitary landfills, composting and incineration in solid waste management in Sunyani.

Again, the study has shown that contracting, monitoring and sanctioning play critical roles in the successful implementation of PPP. For instance, it was revealed that contracting under the existing PPP arrangement was top-down in approach. That is the contract the Assembly has with Zoomlion Ghana Limited was signed in Accra between the Local Government Ministry and Zoomlion Ghana Limited, National Headquarters but not the Sunyani Municipal Assembly and Zoomlion Ghana Limited, Sunyani Municipal. The study also revealed that there is no competition for the private partner. Zoomlion Ghana Limited is the

sole company providing solid waste management in the municipality. Monitoring and sanctioning of performance in the PPP arrangement in the SunyaniMunicipality was found to be weak.

The third objective focused on the relationship between actors involved in the PPP arrangement. It was revealed that there was a good relationship between partners. It was found that, the relationship between partners has affected monitoring and sanctioning of performance. It was also established that the various actors knew their respective roles in the partnership.

The findings on public perception on solid waste generation and the PPP arrangement in Sunyani are that; solid waste generation in the municipality has increased over the years because of growing economic activities and population increase. Officers of the Assembly and Zoomlion Ghana saw lack of attitudinal change as one of the contributory factors to the increase in solid waste generation as education on waste reduction is not taken serious by the people. The study established that there is lack of environmental awareness among inhabitants. The study also found that, all stakeholders understood the public private partnership and saw it as a good arrangement which has improved solid waste management in the municipality.

Conclusions

The following conclusions were drawn from the findings of the study.

The first objective of the study was to examine the structure of organisations involved in PPP. It is established that the Assembly did not have legal and regulatory framework to guide the PPP arrangements. Lack of policy,

laws and regulations make the success of PPP in solid waste management in Sunyani challenging. On resources, the private company relies largely on the Municipal Assembly for both financial and human resource for its operation. Again, Zoomlion Ghana Limited (the private partner) lacks the needed logistics to handle solid waste at the final disposal site.

The study revealed that contracting, monitoring and sanctioningissueswere key elements in the implementation of PPP arrangements. Though respondents claim that there had been an improvement in solid waste management in Sunyani since the Assembly contracted Zoomlion Ghana Limited, contracting, monitoring and sanctioning measures put in place by the Assembly were weak. Moreover, contracting was top down in approach instead of bottom up. This current arrangement defeats the whole essence of autonomy which underlies the decentralisation process.

Investigating the relationship between actors of PPP in waste management was the third specific objective. It was evident that a cordial relationship existed between the Assembly and Zoomlion Ghana Limited. This means that both partners undertake some duties which were not specified in the contract for each other. Partners are aware of their various roles. However, Assembly members who are key in the implementation of the PPP arrangement have no defined roles in the PPP arrangement.

The effectiveness of PPP arrangements in solid waste management can be enhanced through the understanding of institutional arrangements that exist. There is the need therefore to put in place strong institutional measures for PPP projects.

The absence of strong institutional arrangements jeopardisesthe effective implementation of such policies.

Recommendations

Based on the findings of the study, the following recommendations are directed to players in the PPP arrangement:

Government

- Government should allow Metropolitan, Municipal and District Assemblies to sign their own contracts with private waste management companies. Government must thus play a supervisory role in the contracting process.
- Government shouldallow the Local Assemblies to take charge of financial arrangement regarding PPP. Government should allow the Assemblies to make payments to the private companies in order to ensure such payments are made on merit.
- Government should expedite action on the passageof thepublic private partnershipBill into law to help boost PPP arrangements in Ghana.
- Government should organise capacity building workshops aimed at developing the conceptualisation, planning, awarding and implementation of public private partnerships among local government staff and senior public officials. This will help in the identification of private interventions in terms of the provision of capital for the accomplishment of income generating projects that are self-sustaining and rewarding.

- Central government should ensure a speedy release of the District Assemblies Common Fund (DACF) to facilitate the implementation of the public private partnership at all times.
- Assembly Members who are community representatives must be involved in contractual arrangements for PPP in solid waste management. In that, Assembly members will support the Environmental Health Department in monitoring. This will help in ensuring better service delivery by the private partner.

Municipal Assembly

- The Municipal Assembly should enact bye-laws to guide the PPP arrangement in solid waste management.Formulation of bye-laws by the Assembly to guide the PPP arrangement is very critical for the successful implementation of PPP in solid waste management in Sunyani.
- Monitoring, supervision of contracts, and enforcement of the assembly‘s sanitation bye-laws should be issues of serious concern to the Sunyani Municipal Assembly. If these are taken serious, the Assembly will achieve more success in solid waste management under the PPP arrangement.
- Instead of focusing only on management contract, the Assembly should consider franchising of solid waste collection to take care of areas where Zoomlion Ghana Limited does not cover.
- The Assembly shouldendeavour to educate the general public and households through sensitisationprogrammes that are geared towards attitudinal change and that elicit responsible conducts through the use of the media and information service van. Assembly members should intensify the use of community durbars

to address issues of solid waste reduction, and management and offer explanations to the communities on problems they face regarding solid waste management.

- The Assembly should encourage consultation, openness and participation in addressing waste management by utilising the local government structures including the unit committees system that are located at the grassroots of the community.
- The Assembly should also improve their resource base in order to serve as an effective buck up and to be able to meet its financial obligations towards the private companies. The Assemblies must also invest more into resources and logistics such as compactors, protective clothes, refuse containers, vehicles for monitoring and the provision of fuel in a timely manner to facilitate PPP arrangement.
- The Assembly should make efforts to attract other private companies in solid waste management to bring competition to waste service delivery to improve the quality of service delivery.
- The Assembly should strengthen its technical capacity through capacity building programmes and interventions.

Private SWM Organisation

- Zoomlion Company Limited should improve its funding sources so that, it does not overly rely on the Assembly for funding for the PPP arrangement. It must be able to support its operations whenever the DACF delays.

- The Company should strengthen its technical capacity through capacity building programmes and interventions. Zoomlion Ghana Limited should acquire more logistics for solid waste collection.
- The company must invest in recycling of solid waste.
- The Company should intensify its public education programme as a way to help reduce solid waste generation in Sunyani. This must be done hand in hand with environmental health education and laws on improper disposal of solid waste in public spaces.
- The Company should ensure that persons hired to collect refuse regularly do so through effective supervision and monitoring.

Suggestions for Further Studies

Further studies should be conducted into the implications of political interference for the viability of PPP in solid waste management.

REFERENCES

Ababio, M.O. (2010). Private sector involvement in solid waste management in the Greater Accra Metropolitan Area in Ghana.*Waste Management & Research* 28, 322–329.

Abul, S. (2010). Environmental and health impact of solid waste disposal a MangwaneniDumpsite in Manzini: Swaziland. *Journal of Sustain. Dev. Africa, 12(7): 64-78*.

Addo-Yobo, F.N. & Ali, M. (2003). Households: passive users or active managers? IDPR 25: 4, 374–389.

Ahmed, S.A. & Ali, M. (2004). Partnerships for solid waste management in developingcountries: linking theories to realities. *Habitat International* 28. 467–479.

Akaateba, M.A., &Yakubu, I.(2013). Householders' satisfaction towardssolidwastecollection services of Zoomlion Ghana Ltd in Wa, Ghana.*EuropeanScientific Journal. Vol. 9. No. 32.*

Akhtar, M.N. (2014). Prospective assessment for long-term impact of excessive solid waste generation on the environment.*International Journal of Advancement in Earth and Environmental Sciences Vol.2, No.2, 39-45.*

Akintoye, A., Beck, M. &Hardcastle, C. (2003).*Public private partnerships:* Managing risks and opportunities.

Akintoye, A., Edwards P.J. &Hardcastle C, (2005).The Allocation of risk in PPP/PFI construction projects in the UK.*International Journal of Project Management 23 25-35.*

Altenburg, T. (2005). The private sector and development agencies: how to form successful aliances, *cririca l issues learned from leading donor programmes*. German Development Institute, Bonn.

Altheide, D.L., & J.M. Johnson (1994).Criteria for assessing interpretive validity in qualitative research. In N.K. Denzin, & Y. S Lincoln (Eds.), *Handbook of qualitative research (pp. 485-499)*. ThousandOaks, CA: Sage Publications.

Amedahe, F.K (2002). *Fundamentals of educational research methods*, Mimeograph. Cape Coast: University of Cape Coast.

Amoah S.T. &Kosoe, E.A. (2014). Solid Waste Management in Urban Areas of Ghana: Issues and Experiences from *Wa. Journal of Environmental Health and Human Health.Vol. 2 No. 5, 110-11.7.*

Anane, E.T. (2012). Environmental Challenges Facing a Growing City: Sunyani Case Study. *The Journal of Sustainable Development Vol. 10, 180-190.*

Anazodo R., Okoye J.C. &Ezenwile U. (2012). Leadership-Corruption: The bane of Nigeria Development. *African Journal of Social Sciences Vol 2 No.3, 124-134.*

Asare B.E &Frimpong M.K. (2013).Public private partnerships and urban sanitation: Do expectations meet realities in Madina-Ghana? *Journal of African Studies and Development.*

Altheide, D.L. & Johnson, J.M. (1994)."Criteria for assessing interpretive validity in Qualitative Research."In NK Denzin and YS Lincoln (Eds.).*Handbook*

of Qualitative Research (pp. 485-499). Thousand Oaks, CA: Sage Publications.

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

Ayee J. (1998). Divestiture Programme in Ghana: Experiences and Lessons. *GhanaEconomics Outlook 3(1):88-98.*

Ayee, J. (2000). *Saints, Wizards, Demons, and Systems: Explaining the Success or Failure of Public Policies and Programmes.* Accra, Ghana Universities Press.

Babayemi, J.O. &Dauda, K.T. (2009). Evaluation of solid waste generation, categories, and disposal options in developing countries: A case study of Nigeria. *Journal of Applied Sciences and Environmental Management.*Vol. 13(3) pp.83-888.

Babbie, E. (2005). *The Basics of Social Research* (3rd ed.). Belmont: Thomson Wadsworth.

Bagchi, S. (2001). Financing capital investments in urban infrastructure: constraints in accessing capital market by urban local bodies. *Econ. Political Weekly 36(4): 385-398.*

Baud, I., Post,J and Furedy, C. (ed.) (2004). *Solid waste Management and recycling: Actors, partners and policies in Hyderabad, India and Nairobi, Kenya*. Kluwer academic publishers, New York.

Bernstein, J. (2004). Social assessment and public participation in municipal solid waste management, Toolkit.*ECSSD-Urban Environment Thematic Group, 210 p.*

Boadi, K.O. &Markku, K. (2005). Environment and health impacts of household solid waste handling and disposal practices in the third world cities: The case of Accra Metropolitan Area, Ghana. *Journal of Environmental Health, 68(4): 34-36.*

Buchanan, J. M. (1975). *The limits of liberty: between anarchy and leviathan*. Chicago: University of Chicago Press.

Buchanan, J. M. (1986). *Liberty, market and state: political economy in the 1980s*. Brighton (Sussex): Harvester Press.

Buchanan, J. M., &Tullock, G. (1962).*The calculus of consent: logical foundations of constitutional democracy*. Ann Arbor: University of Michigan Press.

Bryman, A. (2004). Social Research Methods (2nd edition). Oxford: Oxford University.

CBI (2007).*Going global: The world of public private partnership*.

Centre for Environment and Development (2003). *Study of the attitude and perception of community towards solid waste management*.A case study of Thiruvanathapuram city-Phase II.

Chadwick, B. A., Bahr, H. M., & Albrecht, S. L. (1984).*Social Science Research Methods.*Englewood Cliffs: Prentice-Hall.

Chandrappa, R. (2012). *Solid Waste Management. Principles and Practice*.

Cheema, G. S., (2003). The challenge of urban management: Some issues. In *Urban management: Policies and innovations in developing countries*, ed. G. S. Cheema and E. Wards. London: Praeger.

Coad A. (2005).Private Sector Involvement in Solid Waste Management. Avoiding Problems and Building on Successes. *Collaborative Working Group on Solid Waste Management in Low- and Middle-income Countries.*

Cointreau-Levine, S. (1994).*Private sector participation in municipal solid waste services in developing countries.* Washington D.C.: World Bank.

Cointreau-Levine, S. &Coad, A. (2000). *Private sector participation in municipal solid waste management, executive overview (part 1)*. SKAT (Swiss Centre for Development Cooperation in Technology and Management), Swiss.

Da Zhu et al. (2008). *Improving Municipal Solid Waste Management in India: A sourcebook for policy makers and practitioners*. The international bank for reconstruction anddevelopment / The World Bank.

Denison, R.A. & Ruston, J. (1990).*Recycling and incineration*.Island Press, Washington D.C.

Dhindaw, J. (2004). Developing a framework of best practices for sustainable solid waste management in small tourist islands (MSc thesis in Community Planning, University of Cincinnati, USA), 207 p.

Dinye, R.D. (2006). Economies of private sector participation in solid waste management in Takoradi - a Ghanaian city.*Journal of Science and Technology* Vol. 26(1) 2006: 60-75.

Dube, C. &Chigumira, G. (2011).*The scope for public-private partnerships for infrastructure development in Zimbabwe*, Harare, Prinflow.

Fiszbein, A. & Lowden, P. (1999).*Working together for a change: Government, civic, and business partnerships for poverty reduction in Latin America and the Caribbean*. Washington, DC: World Bank.

Ghana Statistical Service (2012, May). 2010 Population and Housing Census: Summary report of final results. Ghana. Retrieved from http://www.statsghana.gov.gh/docfiles/2010phc/2010_POPULATION_AND_HOUSING_CENSUS_FINAL_RESULTS.pdf.

Green, D. P. & Shapiro I. (1994). *Pathologies of Rational Choice Theory*. New Haven. Yale University Press.

Grossman, S. (2012).Public private partnerships: Introduction-The Emerging Role of Partnership Governance. Public Perform. Manage. Rev. 36(2):183-186.

Gourlay, K.A. (1992). *World of Waste, Dilemmas of industrial development*, Zed Books Limited, London.

Gwartney, J.D & Stroup, R.L. (1992).*Economics*: Private and Public Choice, 6thed.

Hartman, R. (1995). *Solid waste management*: Options for private sector participation, GTZ, Office Tunisia.

Harvey, D. (2005). *A Brief History of Neoliberalism*. Oxford: Oxford University Press.

Hasenfeld, Y. &Garrow, E. (2009). Theoretical Approaches to Human Service Organisations.

Helmsing, A. (2003). 'Local economic development: new generations of actors, policies and instruments for Africa', *Public Administration and Development*, vol. 23, pp.67-76.

Hemming, R. (2006). Public private partnerships, Government Guarantees, and Fiscal Risk, *Special Issues Paper*: Washington, IMF.

Hodge, G.A. &Greve, C. (2011).Theorisingpublic private partnership Success.*Paper for the Public Management Research Conference, Syracuse University, 2-4 June 2011.*

Higgs, J. & Cherry, N. (2009).*Researching in Wicked Practice Spaces*: Artistry as a Way of Researching the Unknown in Practice.Volume 5 of the series Practice, Education, Work and Societypp 13-22.

Hodge, G. A. &Greve, C. (2007).Public private partnership – *An International Performance Review, Public Administration Review 67 (5), 545-558.*

Hodge, G.A. &Greve,C. (2005).Public private partnerships: Governance Scheme or Language Game? *The Australian Journal of Public Administration*, 69:S1, S8–S22.

Hofny, C. (2006). *The potential for using composted municipal waste in agriculture: the case of Accra, Ghana.* (PhD Dissertation).Swedish University of Agricultural Sciences, Sweden.

Hoornway, D., &Bhada-Tata, P. (2012). What a Waste: *A Global Review of Solid Waste Management*. Washington DC, USA: World Bank. Retrieved from www.worldbank.org/urban.

Henry, R.K., Yongsheng, Z & Jun, D. (2006). Country report: Municipal solid wastemanagement challenges in developing countries – Kenyan case study. *Waste Management* 26:1, 92–100.

Jutting, J. (1999). Public private partnership and Social Protection in Developing Countries: the Case of the Health Sector. *A Paper presented at the International LabourOrganisation Workshop on The Extension of Social Protection. Geneva.*

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

Kaosol, T. (2009).Sustainable Solutions for Municipal Solid Waste Management in Thailand.*World Academy of Science, Engineeering and Technology 36*

Kitbuah, E., Asase M., Yusif S., Mensah, M.Y. &Fischer, K. (2009).*Comparative Analysis of Household Waste in the Cities of Stuttgart and Kumasi*-Option for Waste Recycling and Treatment in Kumasi.

Kettl D.F. (2000). The Global Public Management Revolution: *A Report on the Transformation of Governance.* Brookings Institution Press: Washington, DC.

Kettl D.F. (1993). Sharing Power: Public Governance and Private Markets. The Brookings Institutions: Washington, DC. KMA-WMD.

Khanom, N.A. (2010). Conceptual Issues in defining public private partnerships (PPPs).*International Review of Business Research Papers* 6:2. 150 -163.

Klundert, A.V.D &Lardinois, I. (1995).*Community andprivate (formal and informal) sector involvement in municipal solid waste management in developing countries*.(http://www.gdrc.org/uem/waste/swm-finge1.htm) (accessed August 2015).

KMA-WMD (2000).*Waste Management Department Annual Report.* KMA-WMD: Kumasi, Ghana.

Kreith, F. (1994).*"Handbook of Solid Waste Management"*. McGraw Hill, USA.

Kumah, A.M.(2007). "*The Situation of Solid Waste in Ghana*". Accra, Ghana.

Kwan, J. (1999). Prospects and Challenges of Partnerships, A Guide for Local Governments.

Larbi G.A. (1998). Contracting-out in public health and water services in Ghana. *International Journal of Public Sector Management 11(2/3): 154–163.*

Liebenberg, C.J. (2007). *Public private partnership solutions to waste management in Africa.*

Majani, B. (2000). Institutionalising Environmental Planning and Management: Theeconomics of solid waste management in Tanzania.*SPRING Research Series no 28. Dortmund, Germany.*

Mariwa, S. (2012).Institutional arrangements for managing solid waste in the Shama-Ahanta-East Metropolis, Ghana.*Journal of Sustainable Development in Africa*.Vol. 14, No. 6.

Marshal, C. &Rossman, G.B. (2011).*Designing qualitative research* (5th ed.). London:Sage Publication, Inc.

Massoud, M.A., Fadel, M.E. &Malak, A.A. (2003). Assessment of public vs. private MSW management: a case study. *Journal of Environmental Management 69, 15–24.*

Mensah, A. A. (2011). *Physico-chemical characteristics of solid waste and treatment options*: A case study of Kumasi, Ghana.

Mensah, A. &Larbi, E. (2005)."Solid waste disposal in Ghana".(www.trend.wastsan.net)Accessed on 24th August, 2015.

Myers, G.A. (2005). Disposable cities: *Garbage, governance and sustainable development in Urban Africa*, Aldershot: Ashgate.

Ministry of Local Government and Rural Development (MLGRD, 2010).*Environmental Sanitation Policy of Ghana.*Government of Ghana.

Ministry of Local Government and Rural Development (MLGRD, 2006).*MoU between Government of Ghana and Zoomlion Ghana Limited.*Government of Ghana.

Ministry of Finance and Economic Planning (2011).*National policy on public private partnership*.Government of Ghana.

MLGRD, (2004).Sanitation Country Profile Ghana. http://www.un.org/esa/agenda21/natlinfo/countr/ghana/SanitationGHANA04F.pdAccessed 24th August, 2015.

Momoh, J. J. &Oladebeye, D. H. (2010). Assessment of awareness of attitude and willingness of people to participate in household solid waste recycling

programme in Ado-Eketi, Nigeria, in the *Journal of Applied Sciences in Environmental Sanitation*. Jakarta, Indonesia.

Mutandwa H. (2015). An Analysis of the potential use of public private partnerships in water infrastructural development in Zimbabwe: The case of Harare City Council. *Journal of Public Administration and Governance 2015, Vol. 5, No. 1.*

Ndandiko, C. (2005). *Public private partnerships as modes of procuring public infrastructure and service delivery in developing countries*: Lessons from Uganda.

Neuman, W. L. (2011). *Social Research Methods: Qualitative and Quantitative* (7th ed.).

Oteng-Ababio, M. (2009).Private sector involvement in solid waste management.*Journal of Management & Research*, 322-329.

Oduro-Kwarteng, S. (2007). Managing urban solid waste services, Assessment of performance of private companies in 5 cities in Ghana. Delft: UNESCO-IHEInstitute for water education.

Obirih-Opareh& Post(2002).Quality assessment of public and private modes of solid waste collection in Accra, Ghana.*Habitat International* 26 (2002) 95–112.

Onyanta, A. (2012). Urban governance and spatial in service delivery.A case study of solid waste management in Abuja, Nigeria.*Journal of Waste Management and Research Vol. 30(9), 991-998.*

Post, J. (1999).The problems and potentials of privatising solid waste management in Kumasi, Ghana.*Habitat International, 23*, 201-215.

Post, J.&Obirih-Opareh, N. (2003). Partnership and the public interest: Assessing the performance of public private collaboration in solid waste collection in Accra. *Space and Polity, 7*(1), 45-63.

Puopiel, F. (2010).*Solid Waste Management in Ghana*: The case of Tamale Metropolitan Area.

Read A. D. (1999). "A weekly doorstep recycling collection, I had no idea we could". Overcoming the local barriers to participation.*Journal of Resources, Conservation and Recycling 26, 217 – 249.*

Robson, C. (2002). Real World Research: *A Resource for Social Scientists and Practioners-Researchers.* USA: Sage Publications.

Roskin, M., Cord, R., Medeiros, J. & Jones, W. (2013).*Political Science: An introduction*. Englewood Cliffs, N.J.: Prentice Hall.

Sarantakos, S. (1997). *Social Research* (2nd ed.). New York: Palgrave.

Sarantakos, S. (2005). Feminist Research Chapter 3. In *Social Research* (3rd ed.). Retrieved from www.palgrave.com/sociology/sarantakos/docs/chapter3.pdf.

Schübeler P., Wehrle K.& Christen J. (1996). *Conceptual framework for municipal solid waste management in low-income countries*.SKAT UNDP/UNCHS (Habitat)/World Bank/SDC collaborative programme on municipal solid waste management in low-income countries.URBAN

MANAGEMENT AND INFRASTRUCTURE.*Working Paper No. 9, 55 p.*

Seungwoo, S. (2012).*Legal analysis on public private partnerships regarding model PPP rules*.Korea: Dankook University.

Shediac R., Abouchakra, R., Hammami, M. &Najjar, M.R. (2008).*Public private partnerships*: A Catalyst for Economic Growth: Abu Dhabi.

Stein, H. (2000). "The Development of Developmental State in Africa": A Theoretical Inquiry. *Occasional paper presented at a seminar at the Centre of African Studies.* University of Copenhagen.

Stottman, W. (2000).*The role of the private sector in provision of water and waste services in urban areas in Uitto, Juha and AsitBiswas Water for Urban Areas.* Tokyo: The United Nations Press.

Sunyani Municipal Assembly (SMA, 2006).*Waste disposal/management bye-laws.*

Taylor, D. C. (1999).*Managing resources to collect municipal solid waste*.Illustrative East Asian case study studies.Journal of Waste management and Research.

Tchobanoglous G., Theisen H., Vigil S., (1993). *Integrated solid waste management.Engineering principles and management issues*.McGraw-Hill International Editions.

Tsiboe, I. A., &Marbell, E. (2004).*A look at urban waste disposal problems in Accra, Ghana.* . (Master's dissertation).Roskilde University.Retrieved from http://rudar.ruc.dk/bitstream/1800/322/1/A_Look_at.pdf.

UN-HABITAT.(2010). *Solid waste management in the world's cities.*London and Washington D.C: UN-HABITAT.

UNEP (2014).Policy coherence of the sustainable development goals.A natural resource perspective.*An International Resource Panel Report.*

UNEP (2010). Waste and climate change. *Global trends and strategy framework.* Osaka/Shiga, Japan.

UNEP, (2009).“Developing integrated solid waste management plan mraining Manual, Volume 2: *Assessment of current waste management systems and gaps therein”*.Osaka/Shiga, Japan.

UNEP (2005).*Solid Waste Management*.UNEP.

UNEP (2000). Urban areas.GEO-2000, *Global Environment Outlook.*

United Nations Report (2004). Governance in public private partnerships: *Global Credit Survey 2005,”* April 25. New York.

United States Environmental Protection Agency (USEPA) (1999). “*State and local solutions to solid waste management problems”*. (http://www.epa.gov). Accessed on 18 10th December ,2015.

University of Cape Coast (2016).Map of Sunyani Municipality.Cartographic Unit, Department of Geography.

Waddell, S. (2000).A win-win role for civil society in business strategy’.*Journal of Nonprofit Management, 4:1, 24-43.*

World Bank (2008).Successes and failures of PPP projects, Europe and Central Asia Region.

Yadav C.I. & Devi, L.N. (2009).Studies on municipal solid waste management in Mysore City-A case study.

Yauch, C.A &Steudel, H.J. (2009).*Complementary use of qualitative and quantitative cultural assessment methods*: University of Wisconsin: Madison.

Yin, R. K. (2003).*Case study research: Design and Methods of Applied Social Research Methods Series.* London: Sage Publications.

Zender L. E.,(1999). *Solid waste management on Indian reservations*: Limitations of conventional solid waste management engineering. (PhD thesis in Environmental Engineering, University of California USA), 190p.

Zerbock, O. (2003).Urban solid waste management, waste reduction in developing countries.

APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

INSTITUTE FOR DEVELOPMENT STUDIES

INTERVIEW GUIDE FOR ASSEMBLY MEMBERS

Welcome and thank you for participating.

Purpose of the session:

To gather data on public private partnership on Waste Management in the Sunyani Municipality. This is purely for academic work and so you are assured of confidentiality regarding the information you provide.

Ground Rules:

Be honest; your individual comments will remain confidential but will be compiled into a report

I will be recording the session in order to write my report but will not share the tape with anyone.

Introductions: Please tell us your name, role, how long have you worked as Assemblyman/woman in this area council

State of affairs regarding waste management in the Sunyani Municipality

1. What is your view of waste generation in the Municipality?
2. What is your view of solid waste generation in the Municipality?
3. How is waste generated in the Municipality disposed?

4. How is solid waste generated in the Municipality disposed?
5. What organisational structures exist to address issues of waste disposal in the Municipality?
6. How is waste managed in the Municipality?
7. What measures has the Assembly put in place to manage waste in the Municipality?
8. What is your view about the measures the Assembly has put in place for managing waste in the Municipality?
9. What is your view about the state of waste management in the Municipality?
10. What in your view are the challenges the Area Council faces in its effort to manage waste in the area?

APPENDIXB

UNIVERSITY OF CAPE COAST

INSTITUTE FOR DEVELOPMENT STUDIES

INTERVIEW GUIDE FOR PLANNING, ENVIRONMENTAL HEALTH OFFICERS AND THE PRIVATE COMPANY

Introduction

My name is Richmond Yeboah, an MPhil (Development Studies) student from the University of Cape Coast. As part of my programme, I intend to gather data on the topic "public private partnership on Waste Management in the Sunyani Municipality". This is purely for academic work and so you are assured of confidentiality and anonymity regarding the information you provide. I therefore urge you to answer the questions as sincerely as possible. I will be recording the session in order to write my report but will not share the tape with anyone.

State of affairs regarding waste management in the Sunyani Municipality

1. What is your view of waste generation in the Municipality?
2. What is the state of affairs regarding waste generation in the Municipality?
3. How is waste managed in the Municipality?
4. What organisational structures exist to address issues of waste disposal in the Municipality?
5. What measures has the Assembly put in place to management waste in the Municipality?

6. What is your view about the measures the Assembly has put in place for managing waste in the Municipality?
7. What is your view about the state of waste management in the Municipality?

Institutional and legal framework of PPP

1. What is your view about the PPP in waste management in the Municipality?
2. What is your view about the organisational structure of PPP in terms of waste management in the Municipality?
3. What supervisory measures exist with regard to PPP in waste management in the Municipality?
4. How does the issue of finance affect PPP in waste management in the Municipality?
5. What is your view about the cost involved in PPP in waste management?
6. What is the human resource arrangements regarding PPP in waste management in the Municipality?
7. How does the issue of personnel affect PPP in waste management in the Municipality?
8. How does the issue of logistics affect PPP in waste management?
9. How do issues of infrastructure in the Municipality affect PPP in waste management?
10. What regulatory and control measures exist regarding PPP in waste management in the Municipality

11. What conditions exist for PPP in waste management in the Municipality?
12. What policy framework exists to guide the management of hazardous, solid and radioactive wastes in the Municipality?
13. What is your view about the existing policy framework that guides PPP in waste management in the Municipality?
14. What institutional and legal framework exists regarding PPP in waste management in the Sunyani Municipality?
15. How do you see the institutional framework with regard to PPP in waste management in the Municipality? (Methods, procedures, institutional capacity)
22. How is the distribution of functions with regard to PPP in waste management in the Sunyani Municipality?
23. What monitoring measures exist with regard to PPP in waste management in the Municipality?
24. How does the existing policy arrangement regarding PPP affect waste management in the Municipality?
25. How do the institutional and legal frameworks on PPP affect waste management in the Municipality?
26. How do you see the institutional framework solid waste management in the Municipality?
27. What is the nature of the PPP contract?
28. What are the sanctioning measures regarding PPP arrangement?

Roles of the various actors in the PPP arrangements in the Municipality

29. What role does the Assembly play in waste management under the existing PPP in the Municipality?
30. What role does the Assembly play in terms of the collection of waste under the existing PPP in the Municipality?
31. What role does the Assembly play in terms of labour and technical skills in waste management under the existing PPP in the Municipality?
32. What managerial role does the Assembly play in waste management under the existing PPP in the Municipality?
33. How does the Assembly ensure efficiency of waste management in the Municipality?
34. What role does the private entity play in waste management under the existing PPP in the Municipality?
35. What role does the private entity waste management under the existing PPP in the Municipality?
36. What role does the private entity play in terms of the collection of waste under the existing PPP in the Municipality?
37. What role does the private entity play in terms of labour and technical skills in waste management under the existing PPP in the Municipality?
38. What managerial role does the private entity play in waste management under the existing PPP in the Municipality?
39. What role does the private entity play in waste management under the existing PPP in the Municipality?

40. What measures has the private agency put in place for disposing waste in the Municipality?
41. What measures has the private agency put in place for recycling waste in the Municipality in the face of PPP?
42. How does the private agency ensure efficiency of waste management in the Municipality in the face of PPP?
43. What is the relationship between actors in PPP?
44. What is the nature of the relationship between actors in PPP?

APPENDIXC

UNIVERSITY OF CAPE COAST

INSTITUTE FOR DEVELOPMENT STUDIES

DOCUMENTARY REVIEW CHECKLIST FOR REVIEWING POLICIES AND REGULATIONS

Institutional and legal framework of PPP

1. Does the Assembly have a policy document on PPP in waste management?

   Yes [ ] No [ ]

2. Is there a policy framework that exists to guide the management of hazardous, solid and radioactive wastes in the Municipality? Yes [ ] No [ ]

3. Is the institutional and legal framework regarding PPP in waste management in the Sunyani Municipality well defined? Yes [ ] No [ ]

4. Does the policy document outline the distribution of functions with regard to PPP in waste management in the Sunyani Municipality? Yes [ ] No [ ]

5. Is the organisational structure of PPP in terms of waste management in the Municipality well stated in the policy document? Yes [ ] No [ ]

6. Does the policy document contain the type of private partner ideal for PPP? Yes [ ] No [ ]

7. Does the policy document spell out the resources a private partner brings to the partnership? Yes [ ] No [ ]
8. Does the policy document define the regulatory and control measures regarding PPP in waste management in the Municipality? Yes [ ] No [ ]

Roles of the various actors in the PPP arrangements in the Municipality

9. Are the roles of actors well defined in the policy document?
10. Are there provisions in the policy document on measures put in place for disposing waste in the Municipality? Yes [ ] No [ ]
11. Are there provisions to ensure efficiency of waste management in the Municipality in the policy document? Yes [ ] No [ ]
12. Does the policy document state the nature of relationship that must exist between actors in PPP? Yes [ ] No [ ]

Factors that affect the effectiveness of PPP in waste management in the Municipality

13. Is there any provision on supervisory measures regarding PPP in waste management in the Municipality? Yes [ ] No [ ]
14. Is there a provision on performance standards for actors in the policy document? Yes [ ] No [ ]
15. Does the policy document have monitoring measures to monitor performance? Yes [ ] No [ ]
16. Are there provisions on contracting/procurement in the policy document? Yes [ ] No [ ]

APPENDIXD

UNIVERSITY OF CAPE COAST

INSTITUTE FOR DEVELOPMENT STUDIES

OBSERVATION CHECKLIST

1. How is the generated waste stored?

2. Is it sorted and separated?

3. Does the Assembly and private waste companies have enough waste vehicles?

4. Are waste containers enough for waste collection?

5. Are the containers conveniently placed?

4. Are public collection points properly used and littering avoided?

7. Are waste containers collected on time for disposal when it is full?

8. How is the collected waste transported?

9. Does the Assembly recycle and compost waste?

10. Do the landfill operations conform to acceptable environmental standards?

11. How is the resultant leachate handled and treated?