COMMUNITY PARTICIPATION IN THE NATIONAL SANITATION DAY EXERCISE: INSIGHTS FROM ACCRA METROPOLIS AND MPOHOR DISTRICT

BY

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ABSTRACT

Solid waste poses serious environmental and health challenges in Ghana because there is a waste collection and disposal deficit by local authorities. In an attempt to offset these risks, government has introduced several policy interventions. Notable amongst them are: the public-private-partnership (PPP), the pay-as-you-dump (PAYD) policy and the development of a national policy to guide local authorities to maintain effective environmental sanitation. Despite these interventions, the risks associated with waste still persist. A cholera outbreak recently caused many human causalities and it prompted government to institutionalise a national clean-up exercise to be celebrated on the first Saturday of every month. Community participation in the exercise was satisfactory at the beginning, but with time, participation started waning and the exercise failed at the long run. It became imperative to examine the factors accounting for the failure of the national sanitation day (NSD) exercise. This study uses the Icek Adjzen Theory of Planned Behaviour (TPB) as its theoretical framework. Drawing insights from Accra Metropolis and the Mpohor District, the study adopts the comparative research design to undertake this research. Adopting a mixed method strategy, a 200 household survey and 9 key-informant interviews were conducted. Results from the study showed that the absence of a legal instrument to back the NSD exercise, the absence of remedial action to sanction defaulters, the attitude of community members, the failure of service providers to collect waste after the exercise and the inadequate provision of incentives accounted for the low community turn-out in the NSD exercise. Another reason why the policy intervention failed was that it lacked local ownership. The study demonstrates the importance of adopting bottom-up approaches in community-based initiatives. The study concludes that any policy born out of an empirical vacuum is bound to fail.

DECLARATION

I, Ebenezer Kofi Baidoo, hereby declare that aside references to other scholars' work which have been duly acknowledged, this thesis is the result of my own research carried out at the Department of Geography and Resource Development, University of Ghana under the supervision of Professor Martin Oteng-Ababio and Mr. Sosthenes Kufogbe. I therefore declare that this thesis has neither in whole nor part been presented for another degree anywhere.

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DEDICATION

I dedicate this work to my lovely Mum, siblings, nephews and nieces.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACARP	Accra Compost and Recycling Plant
AMA	Accra Metropolitan Area
BOPP	Benso Oil Palm Plantation
CBO	Community Based Organisation
CCC	Central Container Collection
CCWL	Chagnon City Waste Limited
CEC	Commission of European Communities
CHF	Co-operative Housing Foundation
CNN	Cable News Network
CSIR	Centre for Scientific and Industrial Research
CWG	Collaborative Working Group
DEFRA	Department for Environment, Food and Rural Affairs
DoE	Department of Environment
EHD	Environmental Health Department
EPA	Environmental Protection Agency
EU	European Union
FBO	Faith Based Organisation

GAMA	Greater Accra Metropolitan Assembly
GPRS	Ghana Poverty Reduction Strategy
GSS	Ghana Statistical Service
HH	House to House
HSD	Hydrological Services Department
ISD	Information Services Department
ISWM	Integrated Solid Waste Management
ISWM	Integrated Sustainable Waste Management
LI	Legislative Instrument
MCE	Metropolitan Chief Executive
MDA	Mpohor District Area
MDG	Millennium Development Goal
MESTI	Ministry of Environment, Science, Technology and Innovation
MHLG	Ministry of Housing and Local Government
MLGRD	Ministry of Local Government and Rural Development
MMDA	Metropolitan Municipal District Assembly
MMDCE	Metropolitan Municipal and District Chief Executive
MP	Member of Parliament
MOFEP	Ministry of Finance and Economic Planning

MoH	Ministry of Health
MOTI	Ministry of Trade and Industry
MOWAC	Ministry of Women and Children
MWRWH	Ministry of Water Resources, Works and Housing
NDC	National Democratic Congress
NEPAD	New Partnership for African Development
NESP	National Environmental Sanitation Policy
NESPoCC	National Environmental Sanitation Policy Coordinating Council
NESSAP	National Environmental Sanitation Strategy and Action Plan
NGO	Non-Governmental Organisation
NIMBY	Not-In-My-Backyard
NPP	New Patriotic Party
NSD	National Sanitation Day
PAYD	Pay-As-You-Dump
PPP	Public-Private Partnership
RSGIS	Remote Sensing and Geographic Information System
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social Sciences
SWM	Solid Waste Management

TPB	Theory of Planned Behaviour
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organisation
WMD	Waste Management Department
WSSD	World Summit on Sustainable Development
YES	Youth Engagement in Service

CHAPTER ONE

GENERAL INTRODUCTION

1.1. Introduction

Waste is an inevitable by-product of human activity (Norman et al., 2013; Minghua et al., 2009). As human productivity increases, so does waste generation (Oteng-Ababio, 2014). The increase in waste generation can be largely attributed to urbanisation which has recorded rapid growth in most in developing countries across the world (Songsore, 2017). A report by WHO (2016) shows that cities generate 1.3 billion tons of solid waste yearly and the quota is expected to increase by 70% to 2.2 billion tons per year in 2025. Local authorities in cities have therefore adopted methods to mitigate the environmental and health risks associated with solid waste generation.

In an attempt to minimise the environmental and health challenges associated with waste, developed countries have adopted the Integrated Solid Waste Management (ISWM) system (Marshall & Farahbakhsh, 2013). This system thrives on three elements of waste management. The elements are: recycle, reduce and reuse (Memon, 2010; Davidson, 2011). For instance, member states of the European Union (EU) have developed their waste management policies in line with the EU landfill policy (Bulkeley et al., 2007). In consonance with this, mandatory targets were outlined for nation-states to reduce waste transported to landfill sites. It must be added that the EU policy intervention relied on public compliance and participation (Gregson et al., 2007).

Unlike developed countries, local authorities in developing countries continue to adopt the end-of-pipe approach to manage waste (Oteng-Ababio, 2014; Zaman, 2017). This mode of

managing waste follows the conventional method of collecting, transporting and disposing waste; creating no opportunity for waste minimisation. Even though some developing countries like Indonesia and Malaysia have managed to adopt waste minimisation methods (source separation, recycling and reuse), waste disposal at landfill site remains the common and cost efficient mode of disposing waste in most developing countries, especially in the Sub-Saharan region (Dhokhikah et al., 2015). This is in spite of the fact that the volume and content of waste has changed drastically. Today, consumption of inorganic materials (plastics, paper, glass and aluminium) have increased, while organic materials have decreased (Oteng-Ababio, 2014). This situation has created a burden for waste regulators in managing waste in terms of ensuring effective waste collection, transportation and disposal (Fobil et al., 2010; Guerrero et al., 2013). The remaining uncollected waste is often dumped in open sites or drainage channels causing serious environmental and health risks (Fobil, 2002). In Ghana, the government's attempts to offset these challenges associated with waste have led to the introduction of several policy interventions.

Notable interventions of recent memory include the public-private-partnership (PPP) and the pay-as-you-dump (PAYD) principle which preceded the PPP in 1987 (Oteng-Ababio, 2010c). A report by WHO (2016) confirms that the adoption of PPP in Accra has increased waste collection and disposal from 51% to 91% between 1998 and 2000 respectively. A study by Oteng-Ababio (2010c) also indicates that the introduction of PPP improved waste collection by 25% in Accra. The National Environmental Sanitation Policy (NESP 1999) was also revised with the intent of responding to the emerging challenges in the waste industry (MLGRD, 2010a). Following the promulgation of the LI (Legislative Instrument), there have also been complementary interventions from the private service companies. For example, the private service providers in 2006 introduced the tricycle waste collection system and compaction trucks

which were hitherto unknown in the Ghanaian waste management industry (Oteng-Ababio, 2007). The tricycles are specially made for high density communities accounting for about 74 % of Accra's population and areas prone to indiscriminate waste disposal practices (Oteng-Ababio, 2010c). Additionally, the Accra Compost and Recycling Plant (ACARP), an integrated waste processing and recycling company, was established in 2012 to receive, sort, process and recycle solid and liquid waste to produce organic compost for agronomic purpose in the country and the sub-region (Oteng-Ababio, 2017). Indeed, since July 2012, ACARP has been providing effective integrated processing, management and recycling of solid and liquid waste for economic and social good in an environmentally sustainable manner.

In spite of these interventions mentioned above, a Cable News Network (CNN) I report read, 'According to the latest official statistics published by the UNICEF/WHO Joint Monitoring Platform, Ghana's sanitation coverage stood at 10 percent as at the end of 2006, hence, Ghana ranks number 48 in Africa, out of the 52 countries reported and 14 out of the 15 countries in West Africa, beating only Niger to the last position' (Ericus, 2008).

On 1st November 2014, a nationwide clean-up initiative dubbed National Sanitation Day (NSD) exercise was undertaken as a response to increasing and deteriorating environmental sanitation which caused a cholera outbreak with over 100 human casualties (Fordjour, 2015). Technically and in principle, the initiative was not new since communal clean-ups have been part of attempts used by residents to occasionally keep their communities clean (Thompson, 2010). The uniqueness of the new initiative was an attempt by government to institutionalise the community clean-up exercise which was envisaged to take place on the first Saturday of every month. This permanency distinguishes the NSD exercise from all other communal labour or clean-up exercises ever seen and practised in Ghana.

1.2. Problem Statement

To say prior governments have not demonstrated the need to keep proper environmental sanitation will be an understatement. History is replete with instances where the sanitation challenge has succeeded to bulldoze Presidents (from President Rawlings to the immediate past President Mahama) out of their comfy palatial residences, either the Castle or Flagstaff House, to clean the stinking gutters of some suburbs in Accra, including Nima, James Town, Chorkor, and Agbogbloshie (Oteng-Ababio, 2017). In the 1980s, President Rawlings used to join the people of Nima to descend into the gutters to help clean up their habitats. During President Kufuor's administration, Vice President, Aliu Mahama, also 'descended into the gutters' and joined the ordinary people of Accra in a clean-up campaign to rid the city of filth, and at one point remarked emphatically, 'Oh, that this would be a regular feature of the Kufuor Presidency rather than a once-in-five-years rarity that attracts attention' (Ghana Palaver, 2006). In the most recent past, President Mahama gleefully engaged the residents of James Town as a symbolic gesture to the citizenry to keep their environment clean (Oteng-Ababio, 2017). Suffice to add that while many are those who perceive these acts as gestures meant to spur the citizenry to keep their environs clean, others interpret these seemingly belated actions into the realm of an ill-timed propaganda stunt that has only amounted to a mini fanfare of party officials, sympathisers, and fanatics (Ghana Palaver, 2006; Okofo-Dartey, 2014; Manteaw, 2017).

To the critics, the sort of impact the Presidents' action was meant to achieve, had already trickled into the very pongy drains they gleefully engaged with. Okofo-Dartey, (2014: 1) argues that, 'The inhabitants of James Town and Chorkor will continue to grapple with filth and cholera should the AMA shut its eyes to its home-grown sanitation by-laws and punitive measures for those who flagrantly flout them. What has become of Nima after Chairman Rawlings perfected the art of cleaning gutters about some decades ago? Nima still remains Nima in its desecrated

dignity'. In his contribution, Okofo-Dartey (2014) maintains that the path to cleanliness is not a one-man drama and that it is a collective effort and a shared responsibility. In his candid opinion, inasmuch as he constantly critiques the government and its agencies for their sloppiness in dealing with the environmental challenge, it equally behoves all 'those rationale human beings generating and wallowing in filth to act properly and not wait for the President to shovel filth out of chocked and stinking gutters' (Okofo-Dartey, 2014: 1).

The focus of this study is not to dabble in this raging debate. This study rather intends to unpack reasons why the NSD exercise failed in the long run despite massive public support and endorsement. Could the fact that Ghana is a developing country and its unchecked retrogression towards poverty warrant the increasing filth in the city of Accra? Or, are the various Presidents periphery gesture a microcosm of what needs to be done to manage waste in the country. The recent cholera (which is mostly caused by the ingesting of human excreta) outbreak in Accra and some parts of the country, which killed over a hundred people, has once again raised the issue about personal hygiene in the country (Bagah et al., 2015). The challenge took a political twist when, for example, contributing to the debate on the 2012 budget statement and economic policy, the Asokwa Member of Parliament (MP) quoted the World Health Organisation (WHO) and the United Nations Children's Emergency Fund (UNICEF) document which ranked Ghana the fourth most unsanitary country in Africa, and calling on the then President to declare a 'National emergency on sanitation in Ghana' (Mahama, 2011).

It is against this background that the then government through the Ministry of Local Government and Rural Development (MLGRD) instituted the National Sanitation Day (NSD) exercise. This nationwide clean-up exercise was already established in the NESP, although in its original form it was meant to be observed yearly or any day fixed by the local government (MLGRD, 2010a). As already indicated, the uniqueness of this initiative was the fact that it was

to be observed nationwide on the first Saturday of every month. On its inception, the initiative met massive public approval and response. Indeed, many traditional leaders, including the Otumfour Osei Tutu, Chief of Ashanti Kingdom, endorsed and gave his full support to the exercise and actually participated in some of the initial exercises (Daily Graphic, 2014). Members from faith based organisations (FBOs) such as the Ghana Christian Council (GCC) also threw in their support for the exercise (Modern Ghana, 2014). Plate 1.1 is a picture of a former President of Ghana and a former Mayor of Accra Metropolis participating in a clean-up exercise organised in James Town, a suburb of Accra. Plate 1.2 depicts a group of musicians lending support to the exercise in a press conference in Accra.

Plate 1.1. State Officials Participating in the NSD exercise in James Town

Source: Daily Graphic (2014).

Plate 1.2. Musicians holding a Press Conference in support of the NSD exercise

Source: Cypress Ghana (2014).

According to Oteng-Ababio (2017), the NSD has yet again successfully failed, and memories of the event have since ebbed into quiet oblivion. Indeed, from all indications, in spite of its great intentions and initial enthusiasm for it as well as its high profile endorsement, the intended monthly exercise failed to make any significant impact on local communities. The dilemma is that not a lot has been said about why and/or how it failed, even though environmental sanitation continuous to remain a national challenge and has in fact been elevated to a national priority with the government desire to make Accra one of the cleanest cities in Africa. This study sees the ability to achieve the new national agenda as being contingent on unravelling the NSD 'mystery' which demands some level of introspection. It is hoped that learning from the shortcomings and the successful failure of the NSD initiative, the findings from the study will ultimately offer some learning opportunities. This is the task the study has identified and set itself to unpack in this research.

1.3. Research Questions

Based on the aforementioned, the following questions come to mind:

i. What is people's level of knowledge and perception of the NSD exercise?

ii. What are the geographical differences in participation in the NSD exercise?

iii. What factors motivates or militates against participation in the NSD exercise?

1.4. Main Research Objective

The main objective of the study is to unpack the reasons behind the failure of the NSD exercise despite massive public support and endorsement.

1.4.1. Specific Research Objectives

i. To examine people's level of knowledge and perception of the NSD exercise.

ii. To examine the geographical differences in participation in the NSD exercise.

iii. To examine the factors that motivate or militate against participation in the NSD exercise.

iv. Proffer some recommendations for policy consideration.

1.5. Hypothesis

The study was driven by one hypothesis:

i. Ho: there is no significant relationship between respondents' residential location and participation in the NSD exercise.

ii. Ha: there is a significant relationship between respondents' residential location and participation in the NSD exercise.

1.6. Justification of the Study

Ensuring effective and efficient environmental sanitation has been the bane of most local authorities notwithstanding government's continuous effort to scrutinise the situation (Guerrero et al., 2013). It is hoped that all stakeholders in the waste management stream (generators, regulators and service providers) will collaborate to minimise the environmental and health risks associated with waste. The findings of the study will therefore provide insights for reflection on issues community members face in responding to government's policy interventions. Since the NSD exercise is an offspring of the NESP, the MLGRD together with their local government wing, MMDAs, will be better informed when introducing a policy intervention that relies on community support. The problem statement indicates that existing scholarship falls short in explaining why community response waned over time in the NSD exercise. The study will therefore lay a foundation for future research on what limits people from responding to policy interventions on environmental sanitation. The study will also contribute to academic knowledge and suggest areas for further research.

1.7. Organisation of the Study

The study is divided into five chapters. Chapter One captures the general introduction, sharing a brief background on the study. The problem statement, research questions, research objectives, hypothesis, justification, organisation and limitation of the study are all included in Chapter One. Chapter Two contains literature relevant to the study as well as the theoretical and conceptual frameworks. The theoretical framework adopted the Ajzen (1991) Theory of Planned Behaviour (TBP) to explain intentions and attitudes of respondents towards participation in the NSD exercise. The conceptual framework, on the other hand, was developed by adapting WASTE (2004) and Guerrero et al., (2013) and the Integrated Sustainable Waste Management (ISWM) model.

Chapter Three gives an insight into the study areas and the research design adopted for the study. It gives an account of the socio-demographic and economic characteristics of the two research areas. It also discusses the institutional arrangement of waste management in the two research areas. It elaborates on specific sampling techniques employed and the reason for their selection. The study combined mixed methods to collect data from the two research areas. Chapter Four covers the results and discussions of the study. Results of the first three objectives are analysed to examine similarities and differences in Accra Metropolis and the Mpohor District. Varied responses from the three study localities in Accra Metropolis are also captured in this chapter. Chapter Five contains the summary, conclusion and recommendations. Objective four of the study is presented in Chapter Five.

1.8. Limitations of the Study

The study intended to organise focus group discussions (FGDs) with residents in the Airport Residential Area, but this could not be achieved because respondents were too busy to avail themselves for the discussions. Despite this challenge, the researcher used questionnaires, participant observation, interviews and photographs to collect data in this study locality. Some of the issues cited as the possible cause of failure of the NSD exercise was the political sentiments residents attached to the initiative (Daily Graphic, April, 2016: 16). Thus, the researcher wanted to know the political affiliation of respondents to assist in the data analysis. The rationale behind this decision was to find how respondents' political affiliation affects their participation in the NSD exercise. However, this could not be achieved because respondents deliberately failed to disclose their political affiliation. Nonetheless, this drawback did not mar the credibility of the field data nor the results.

1.9. Summary

This chapter presented the general introduction to the study. It was followed by the problem statement which gave background information on community clean-up exercises in Ghana and why it was imperative to interrogate the NSD exercise. The main objective guiding this study was also captured in this chapter together with the specific research objectives. In the hypothesis, the study sought to determine whether there is a significant or no significant relationship between respondents' residential location and participation in the NSD exercise. The chapter went further to show how the research was organised and the limitations the researcher encountered during data collection.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

In this chapter, the available literature on the subject under consideration is reviewed. In order to understand why the NSD exercise was launched, it became expedient to look at the main issue (waste) in contention and why it necessitated a partnership between state officials and community members. A comprehensive review was done on the concept of waste and issues of waste management in Ghana. Further insights were drawn on the waste management approaches used in both developed and developing countries. As a background to appreciating the origin and institution of the NSD exercise, the existing legal and policy frameworks guiding waste management and environmental sanitation in Ghana were reviewed. This chapter further discusses the theoretical and conceptual frameworks driving the study. The rationale for this chapter is to serve as a reference point for interpretations of findings, build a foundation and provide a pathway for the study.

2.2. The Concept of Waste

Waste is as complex and controversial as the term 'resource' (White et al., 1995). Historically, humans started producing waste when they started forming non-nomadic societies around 10,000 BC (Worrell & Vesilind, 2012). Some popular terms used to describe waste include, damaged goods, sub-standard goods, variance, surplus material, rubbish, trash, junk or garbage (Tudor et al., 2011; Oteng-Ababio, 2014). According to the U.K Department of Environmental Protection Act (DoE, 1990: 164), waste is, 'any substance which constitutes a

scrap material or an effluent, or other unwanted surplus substance arising from the applications of a process and any substance or article which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled'. The material in question may be of less value to the original owner if there is a cost to bear in its disposal. The term refuse is arguably the common word used interchangeably with waste. Perhaps Ojeda-Benitez et al., (2000) assertion gives a much clearer explanation to differentiate between the two terms. Ojeda-Benitez et al., (2000) argue that what is often termed as refuse is a combination of different kinds of waste that generate unpleasant odour and pollution.

White et al., (1995) in an attempt to explain waste classify them by a multitude of categories: physical state (solid, liquid, gaseous), material (glass, paper, grass), physical properties (combustible, compostable, recyclable), source (domestic, commercial, agricultural, industrial) or safety level (hazardous, non-hazardous). It can be inferred that the concept of waste can be framed according to its natural state and unique characteristics. In effect, one must consider the nature (state), the source and level of risk involved when addressing the concept of waste.

According to Hetherington (2004), waste has both spatial and chronological dimension. In effect, a material termed as waste in a particular locality will be viewed differently in another area. For instance, debris of woodworks popularly known as sawdust used to hold no economic value for Ghanaians. However, countries in the western world use sawdust as coating materials for large outdoor speakers. Through improvement in technology, plastic waste which used to create so many nuisances to the environment is recycled to restore its economic value in most developed countries. Developed countries have recorded an increase in recycled products which eventually reduces the amount of waste transported to landfill sites (Robinson & Read, 2005; Tudor et al., 2011). This waste reduction strategy has been possible through community

sensitisation and education. This intervention by local authorities creates a sense of community ownership and acceptability (Oteng-Ababio, 2007).

From a chronological perspective, what was previously referred as waste a decade ago can no longer be regarded as waste today. For example, the materials posing a major challenge for service regulators and providers are the wanton scatter of plastics and sachets lying in every public space, especially in drainage channels (Crook & Ayee, 2006). The current waste management situation in Ghana is a result of using plastics for packaging food and water (Fobil et al., 2005). In the earliest stages of using rubber and plastic materials, Ghana had limited human and material resources to recycle these materials. Since these plastics are non-biodegradable materials, they remain in the environment with minimum deterioration. It took the collaboration of government and other private partners to establish recycling facilities as a panacea for this problem. Despite this effort, the volume of inorganic waste exceeds the recycling capacity of the country (Oteng-Ababio, 2014). However, this move has encouraged recycling and has seen the upsurge of waste pickers in the solid waste stream in Accra (Oteng-Ababio, 2011). Thus, sachet plastic which used to be regarded as waste some years ago, currently holds economic value in Ghana.

Conceptualising waste can also be viewed from a subject (waste holder) perspective. The subject here refers to the person holding the material (waste) and what purpose the person has for the material. The best description of waste in this context can be found in the statement of Elwood and Patashik (1993: 22). They remark that ‘waste is just like beauty, it lies in the eye of the beholder’. In most situations, the beholder is obliged to dispose of the waste once it exceeds its usefulness. Thus, once the original purpose of a material has been achieved, the fate of the material lies in the actions of the holder. For example, an empty bottle would be of no economic value to a well-to-do person and can be disposed of any time. However, the same empty bottle

will be of economic value to an informal waste picker (Wilson, 2007; Coffey & Coad, 2010; UN-Habitat, 2010). It presupposes that an individual's social status is likely to influence how that person values a material (Marshall & Farahbakhsh, 2013). So just like beauty, different people, depending on their socio-economic background, give different interpretations to the same product.

Certain materials may not hold any economic value, but they hold lasting memory which the owner may not want to trade for anything (Gregson et al., 2007). For example, an old vase or furniture will be of no value to the children in the home, but their parent might have received it as a priceless gift from their grandparents. Left to the children alone, the vase or furniture will be discarded because it looks outdated. This situation is a clear scenario of modern culture, as exemplified by the children and the pre-modern lifestyle of the parents. This reinforces Douglas's (1966: 35) assertion that, 'the social world is based upon categories and classifications, and is ordered and maintained spatially, through defining as "dirt" or as a "pollutant" anything that transgresses that social order, displacing this to the outside or avoiding it'. In Douglas' statement, materials are tagged as dirt or pollutants, not because they are unhealthy in-and-of-themselves, but because they transgress particular cultural categorisations, creating cultural disease. At the core of her argument is the idea of dirt as 'matter out of place'. In addition, Oteng-Ababio (2014: 4) aptly put it that, 'waste is culturally construed, very subjective in its usage and may implicitly have a remote economic value'. By inference, labels and tags given to materials are what determine their value and eventual disposal. Once the value of a product is restored, it refuses to be waste (White et al., 1995).

Another dimension to 'waste' relates to how it is framed in policy documents by policy makers and regulators. If 'waste' is always seen as an unwanted item which warrants outright disposal without carefully looking at how it can be reused or recycled, generators, regulators and service providers will treat it as such. This will ultimately deter generators from taking any

sustainable steps towards handling waste (Dhokhikah et al., 2015). In an instance where a government department is labelled as a waste management department, it creates the impression that materials which have no use exist and a government agency is responsible for their disposal.

Having established the potential value of waste, the next subtopic will address a waste minimisation strategy that guides the management of solid waste.

2.3. The Solid Waste Management (SWM) Hierarchy

Just like human life is considered a journey, experts in the waste management stream also consider the life cycle of waste (White et al., 1995; Davidson, 2011). Waste is undoubtedly a by-product of human activity and requires a clear laid down policy strategies (White et al., 1995). In line with a policy framework, a global strategy was developed to guide nation-states to manage their municipal solid waste. Suffice to add that the primary purposes of solid waste management (SWM) strategies are to address the health, the environment, aesthetic aspects, land-use, resources, and economic concerns associated with the improper disposal of waste (Henry et al., 2006; Wilson, 2007; Nemerow, 2009; MLGRD, 2010a).

The waste management hierarchy therefore has become an international standard for prioritising SWM practices with the aim of protecting human health and the environment (Marshall & Farahbakhsh, 2013). In fact, the original idea for the waste hierarchy was first borne out of the Dutch government's shortage of landfill sites (Wolsink, 2010), but the idea was mainly championed by the environmental movement. The waste hierarchy idea was first introduced in the EU's Second Environment Action Programme in 1977 (CEC, 1977). Thus, availability of land and its value as a resource to some extent acted as a driver for the movement away from landfilling. Nonetheless, land scarcity primarily led to new treatment options, such as incineration (Marshall & Farahbakhsh, 2013).

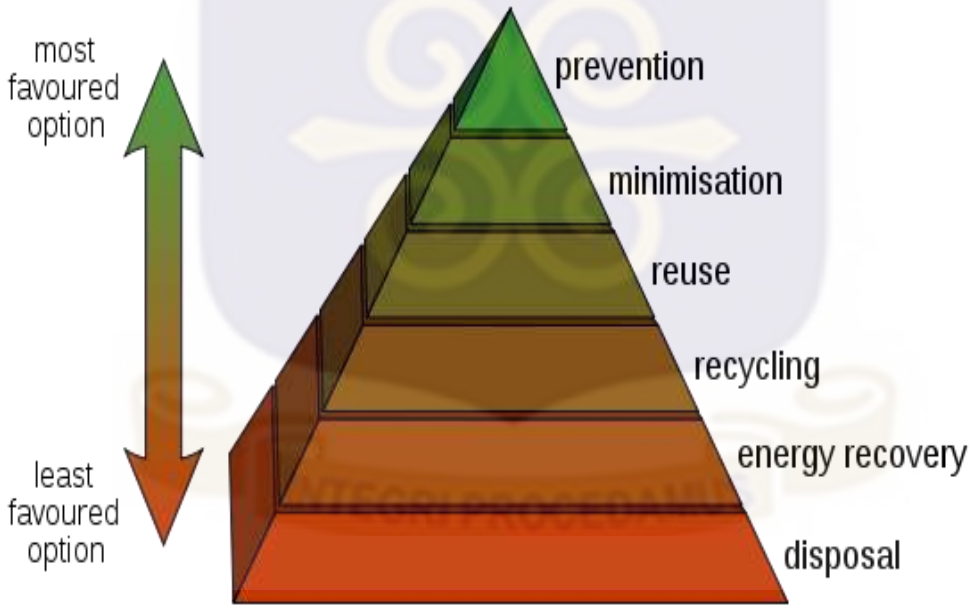
The hierarchy outlines an order of preference for action to reduce and manage waste. The waste hierarchy aims at extracting maximum benefits from waste while reducing the amount of waste generated. In other words, the core mandate of the hierarchy is source reduction (Dhokhikah et al., 2015). Source reduction does not entirely eliminate waste, but it reduces the volume and composition of waste (McDougal et al., 2001). Figure 2.1 gives an illustration of the waste management hierarchy. It shows the progression of a product through successive stages of waste management. At the peak of the pyramid is the ultimate goal of all municipal waste management practices.

Other key elements in the hierarchy include reuse, recycling, composting, waste to energy, incineration and disposal (Zaman, 2017). It is worthy to note that developed countries like Germany, Denmark, Netherlands and England have recorded satisfactory results in reducing the amount of waste sent to landfill sites (Tsiboe & Marbel, 2004). This strategy was achieved through education and urging citizens to separate their household solid waste into glass, paper, and other plastic categories: thereby enabling easy collection and eventual reuse. For instance, the introduction of EU landfill directive paved way for the introduction of a new mode of governing municipal waste through diversification. The diversion mode has given impetus to a new underlying objective for managing waste which is based on a notion of sustainability (Bulkeley et al., 2007). Instead of perceiving waste as a material to be discarded by all means, the new objective rather focussed on managing the risks associated with improper waste management. Between 2003 to 2004, 19% of municipal solid waste in England was recycled or composted. This estimate slightly exceeded the statutory target of 17% by 2003 to 2004 (DEFRA, 2005).

In the context of developing countries, Asian countries have made bold attempts in waste reduction. For instance, Indonesia has established a legal instrument that promotes waste

reduction at source (Dhokhikah et al., 2015). African countries, on the other hand, are still battling with municipal solid waste reduction and disposal (Oteng-Ababio, 2014). According to Lyse (2003: 1), '9 out of every 10 African cities are facing serious waste disposal challenges'. The cost-effective nature of landfilling has made most African countries continue to rely on this mode (landfilling) of governing waste. The issue of reduction continues to be a challenge for most developing countries, judging by their rapid urban growth and high consumption of industrial goods (Oteng-Ababio, 2014). Now that the hierarchy of waste has been established, the study looks at SWM using a comparative approach to discuss it from a developed and developing countries perspective.

Figure 2. 1. The Hierarchy of Waste Management



Source: White et al., (2001).

2.4. Solid Waste Management in Developed and Developing Countries.

The issue of waste management has become imminent, as sustainability continues to take centre stage in global policy discussions (Tudor et al., 2011). As established in earlier discussions, waste is culturally construed and its life cycle from generation to termination depends on how it is handled or managed (Oteng-Ababio, 2014). It presupposes that sound management of waste will require active partnership among all actors within the waste stream (Tukahirwa et al., 2010). SWM basically entails the appropriate steps involved in managing the life cycle of waste, its generation, collection, transfer, reuse, recycling and disposal (Oteng-Ababio, 2010b). In the context of this study, solid waste management will mean the primary collection and disposal of household solid waste using the appropriate institutional arrangements. Suffice it to add that ensuring an effective SWM system is geared towards achieving sustainable development goal (SDG; 7) to make cities and human settlements inclusive, safe, resilient and sustainable (WHO, 2016).

In developed countries, much emphasis is placed on proper SWM at the national and local levels. It must be added that, prior to the 1990's, what dominated European waste management was a cradle to grave system (Davidson, 2011). No opportunity was created to restore the value of waste and therefore landfill operations became the final disposal option. Wilson (2007) asserts that, from 1900 to 1970, disposal in the developed countries was often unregulated and uncontrolled, consisting mainly of dumping and burning. This created an enabling environment for vector borne diseases. In fact, the Black Death which struck Europe in the early 1300s may have been partially caused by indiscriminate dumping (Louis, 2004; Worrell & Vesilind, 2012).

In developed countries, emphasis was still placed on waste collection and transportation out of the city centres (UN-Habitat, 2010). Even after the Second World War, landfilling still remained the principal disposal option in developed countries (Marshall & Farahbakhsh, 2013).

As environmental consciousness and awareness on climate change heightened, experts in the SWM stream looked for alternative ways in managing waste. Marshall and Farahbakhsh (2013) add that in developed countries, public health, environment, resource scarcity, climate change, and public awareness and participation were the main drivers towards the current paradigm of integrated SWM.

The new paradigm led to the preparation of EU's waste policy which became the standard of waste management for all European countries. The EU waste policy moved from the conventional disposal mode of governing waste to the diversion mode. The policy is now guided by four modes of governing waste: disposal, diversion, eco-efficiency and waste as a resource (Bulkeley et al., 2007). All EU member states have been expected to design their policy target to reflect the ultimate goal of the EU waste hierarchy (reduce, reuse and recycle) which is regarded as the diversion mode of governing waste (Bulkeley et al., 2007). The targets encourage source separation to promote recycling (Dhokhikah et al., 2015). However, it is interesting to find that e-waste (electronic waste) from developed countries are continually dumped in developing countries like Ghana, despite its high risk level (Sullivan, 2014). Interestingly, this issue has not received much scholarly attention (Oteng-Ababio, 2010a; Grant & Oteng-Ababio, 2016).

SWM is a major hurdle for city authorities in developing countries because of rapid urban growth and its attendant waste generation (Yousif & Scott, 2007; Tacoli, 2012; Songsore, 2017). This situation has increased the financial burden of local authorities as a result of the high costs associated with its management (Oteng-Ababio, 2010b; Guerrero et al., 2013). The health and environmental implications associated with SWM are also mounting increasingly (Marshall & Farahbakhsh, 2013). Despite these shortcomings, some developing countries have made remarkable steps towards sustainable waste management practices.

In Asia, developing countries like Indonesia and Malaysia have designed policies and strategic frameworks to encourage source reduction by adopting recycling, reduce and reuse

(Memon, 2010; Dhokhikah et al., 2015). For instance, Indonesia has a legal instrument backing household source separation. This is captured in Act No. 18 of 2008 Article 29 (Dhokhikah et al., 2015). In Malaysia, the Ministry of Housing and Local Government (MHLG) has developed some strategies to encourage household source separation and reduction (Malik et al., 2015). These strategies include, enhancement of awareness on waste minimisation (awareness), strengthening of partnership for the 3Rs (reuse, reduce and recycle), activities (partnership), and enhancement of institution to strengthen government policies on waste minimisation.

Unlike the developed countries, where an overarching policy (EU landfill directive) exists with emphasis on partnership between households and local authorities, a contrasting situation pertains in developing countries. Malik et al., (2015) recounts that community participation in solid waste segregation and recycling programme in Malaysia is low because of lack of awareness programmes and educating citizens on the advantages of recycling in the long term. In Africa, each country has its own policy and legal frameworks managing waste in the most cost effective way. Since local authorities in Ghana failed to extend service provision to other parts of the urban communities, private service providers through public private partnership (PPP) initiatives were contracted to expand the quality and quantity in waste service delivery (Oteng-Ababio, 2011). The introduction of the private sector vindicates the adoption of PPP, since waste collection and disposal improved considerably (WHO, 2016). Surprisingly, not even the introduction of PPP has been able to change the operational procedures of public waste regulators from using the conventional (end-of-pipe approach) landfill method in disposing solid waste.

Despite agitations encountered between community members and local authorities in selecting sites for refuse disposal, the landfill method remains the available cost-efficient means of waste disposal in most African countries (Owusu et al., 2012). It can be inferred that most developing countries in Africa are still within the disposal mode of governing waste with few

countries in Asia working towards any diversion mode of governing waste. Wilson (2007: 205) admonishes that, 'there is no quick fix to waste management'. Developing countries should not expect an overnight transformation in their waste management system because developed countries also went through series of steps before reaching an improved SWM system. The next topic will discuss issues of waste management with emphasis on Ghana.

2.5. Waste Management Issues in Ghana

Earlier studies (Oteng-Ababio, 2011; Owusu & Oteng-Ababio, 2015) have indicated that local authorities are not able to handle the volume of solid waste generation in Accra, Ghana. Results from these studies show a very disturbing picture, because city authorities have not really championed the cause for minimising waste through recycling and reuse (Dhokhikah et al., 2015). Due to certain financial, technical and political constraints, city authorities often operate in the conventional modes of handling waste, which hardly give room for waste reduction (Davidson, 2011). The inability of waste regulators (WMD) to handle the volume of solid waste that has engulfed the city, led to the adoption of PPP which is an offspring of market based development policies. Even though PPP has chalked several successes, the challenges confronting SWM continue to persist. Some of the issues confronting SWM in Ghana are discussed below. Suffice to add that, these issues are captured as aspects of waste management in the conceptual framework (see Figure 2.3).

2.5.1. Peoples' Perception and Attitudes towards Waste

The perception and attitude people have towards solid waste affects how these materials are handled. The mind sight (perception) people have developed for 'waste' is a dirty material that must be discarded (attitude) by all means (Dijkema et al., 2000; van de Klundert & Anschutz, 2001; Evans, 2011). It is not surprising that waste materials are disposed of in a

clandestine manner without recourse to appropriate steps. This negative mind sight has been extended to workers who operate in the industry. Popular jargons like *'bola man'* are used for public and private waste workers whilst '*Kaya bola'* is commonly associated with informal waste workers (porters) who carry waste from residences and markets in sacks or baskets (Oteng-Ababio, 2010b). This attitude tends to affect the citing of waste containers and landfill sites because no one expects their backyard to serve as a dump site. Suffice it to mention that, urbanites are very rational beings who always assume public waste collection and disposal as the responsibility of government. This partly explains why people walk past heaps of refuse at markets and in lorry parks not paying much attention (Tsiboe & Marbel, 2004).

According to the Local Government Act (462), local authorities are responsible for the collection and disposal of refuse the moment it leaves residential premises (MLGRD, 1993). Right from the period of colonial rule, environmental sanitation has been the responsibility and preserve of environmental health officers popularly referred to as '*Tankas*'. Citizens have never been involved in solid waste collection and disposal in the country. This institutional arrangement has made the citizens develop negative attitudes and practices towards waste and exhibit a 'Not-In-My-Backyard-NIMBY' syndrome (Tsiboe & Marbel, 2004; Owusu et al., 2012). With this attitude, people only concentrate on keeping their immediate environment clean and expect local authorities to keep public spaces clean. It is therefore not surprising that public spaces like lorry parks, markets and streets are filled with filth. Barr & Gilg (2006) remark that residents who perceive environmental cleanliness as the responsibility of local authorities are less likely to engage in waste management initiatives in their community.

According to Owusu (2010), improper waste practices have social implications since there is the tendency that the upcoming youth will imbibe negative attitudes and behaviour towards waste handling. This increases the burden of local authorities to deal with the collection

and disposal of waste as subsequent generations do not show any positive attitude towards handling waste materials. Encouraging citizens to develop positive attitudes towards waste handling was one of the main rationales for preparing the National Environmental Sanitation Strategic Action Plan (MLGRD, 2010b). Having addressed the social aspect (perception and attitude) of waste management, the next topic discusses the policy framework guiding environmental sanitation and waste management in Ghana.

2.5.2. Environmental Sanitation Policies

The existing national policy on waste management is silent on waste minimisation strategies through source separation (Oteng-Ababio, 2010b). Policy-makers are quick to respond to international policy requirements without reviewing how far targets in the existing policies have been achieved (Marshall & Farahbakhsh, 2013). In other words, state actors are able to design polices, but the course and direction depend on foreign policy guidelines. For example, the main driver that warranted a review of the first edition of the NESP was the millennium development goals (MDGs). This policy's setback is likely to be replicated in the review of the second edition of the NESP to reflect policy targets in the sustainable development goals (SDGs).

Marshall and Farahbakhsh (2013) also add that environmental policies of developing countries are subject to external policy directives by international organisations. Thus, much emphasis is placed on achieving global policy targets without considering the local dynamics. In most developing countries, policy makers think adopting alien technologies will be successful in their local environment (Myers, 2011). However, the final stages of such policy interventions have proved otherwise. Oteng-Ababio (2007) gives an account of a PPP initiative which failed to succeed because of the failure of local authorities to consider existing human and technical

capacity to sustain the project. With these challenges in the policy, let us take a look at how environmental sanitation by-laws are enforced.

2.5.3. Enforcing Environmental Sanitation By-Laws

Another issue of SWM in Ghana has to do with enforcing environmental sanitation by-laws. In the post-independence period, environmental health officers (sanitary inspectors/ police) enforced by-laws and statutory health regulations in the country (Crook & Ayee, 2006). These officers used to organise sensitisation exercises on the need to maintain hygienic conditions. These officials gained the popular name '*Samman-Samman'* literally meaning to summon a victim before court to be prosecuted for failing to abide by sanitation by-laws. Today, local authorities hardly sanction people who flaunt the law and this has encouraged inappropriate ways of managing waste in the country. The Odaw River which passes through Accra has now become a reservoir for all kinds of solid waste materials (Fobil, 2002). Residents often dump their refuse in open spaces, access roads and waterways (Konteh, 2009; Coffey & Coad, 2010). Failure on the part of the assembly to punish perpetrators has encouraged people to develop inappropriate attitudes towards waste disposal. This attitude and behaviour does not augur well for a city that has been tagged with a Millennium City status and is reaching a middle-income status (Songsore, 2017). Pokhrel and Viraraghavan (2005) assert that poor enforcement of by-laws influences household waste disposal practices.

2.5.4. Technical Capacity of Service Providers

Studies (Obirih-Opareh & Post, 2002; Tsiboe & Marbel, 2004; Oteng-Ababio, 2010c; Owusu et al., 2012) have showed that there is a waste collection and transportation deficit in Ghana's waste management stream. The cause of this setback is attributed to inadequate landfill sites and facilities for waste management operations, inadequate equipment and operational funds to support waste management (Tsiboe & Marbel, 2004; Oteng-Ababio, 2010c). It is against

this background that the private sector was introduced to extend the quality and quantity of service in waste collection and disposal in the country (Obirih-Opareh & Post, 2002; Ayee & Crook, 2003). The private contractors extended service coverage to hitherto unserved communities in high-income and middle-income areas. In instances where the WMD failed to serve the central community container (CCC) in low-income communities, the private contractors are called to offer their assistance (Oteng-Ababio, 2010c).

Since the industry relies heavily on machinery, any breakdown of skip loaders and trucks will affect daily waste collection and disposal. A technical setback has the tendency to affect household waste disposal practices. According to Oteng-Ababio (2007) and Owusu (2010), areas which receive poor waste collection services often succumb to crude dumping, disposal in drains, bushes and to burning. This partly explains why low-income areas served under the CCC system engage in indiscriminate dumping when the waste container is full and overflowing. The use of polythene bags for storage material in low-income communities is also a potential recipe for indiscriminate dumping, since it eases waste disposal at any place of convenience.

Having discussed how effective local authorities enforce by-laws (institutional and legal aspect of SWM) and technical capacity of service providers, the next topic looks at the financial capacity of waste regulators (local authorities).

2.5.5. Financial Capacity of Waste Regulators

According to the latest world cities report, local authorities spend between 30% to 50 % of their revenue on SWM (UN-Habitat, 2016). The rising debt of the assembly limits its capacity to honour its obligations to private waste contractors (Oteng-Ababio, 2007). It must be noted that, apart from providing waste management services, the assemblies are equally required under Local Government Act 462 to provide other basic services in their jurisdictions (MLGRD, 1993). Thus, there is immense pressure on the assembly's budget to accomplish their assigned duties.

It is on record that AMA spends 91% of its total annual revenue on waste management alone (AMA/WMD, 2010). Data from AMA show that the assembly in July 2006 and December 2008 owed private waste contractors ₵33.5 billion and ₵75 billion old Ghana cedis respectively (Oteng-Ababio, 2010b). This inevitably deters private contractors from providing the required standards in service delivery. Guerrero et al., (2013) state that SWM constitutes 80 to 95% of the total budget of local authorities in developing countries. Memon (2010) adds that, in developing countries, 80% to 90% of a municipal budget is spent on waste collection, while less than 10% is spent on waste collection services in developed countries. The implication is that local authorities will have to require adequate financial support if they are to meet the demands of service beneficiaries.

The pay-as-you-dump (PAYD) policy was introduced to provide financial support to local authorities in providing waste services for the CCC system. However, this initiative was unilaterally introduced without the consent of the service users (Oteng-Ababio, 2007). In effect, this policy directive led to an increase in indiscriminate dumping, because community members, especially those in the low-income areas, could not pay for the service. Government eventually intervened and banned the policy in 1994 (Oteng-Ababio, 2007). The elimination of the PAYD policy increased the financial burden of the assemblies in supporting the waste management system. This financial challenge has not gone well for some MMDAs and has forced them to continue charging users of the CCC system. Owusu (2010)'s research in Sabon Zongo, a migrant low-income community, resonate the statement above. He found that users of the CCC system were charged daily based on the volume of refuse they disposed of. This unofficial arrangement vis-à-vis the delay of AMA in disposing the waste container has contributed to indiscriminate dumping in the community.

2.5.6. Influence of Party Politics in Awarding Waste Management Contracts

The Ghanaian political environment has always been framed to favour party supporters of the government in power. Waste collection contracts are often given out to political cronies but not necessarily on merit (Oteng-Ababio, 2007; Thompson, 2010). A typical case point is the award of a contract to Chagnon City and Country Waste Limited (CCWL), a Canadian Company to oversee waste collection and disposal in Accra. When a new government took over power, it terminated the contract because of certain financial misconduct and failure of the previous administration to follow due process in procurement. It later came out that a senior state official benefited from the contract at the expense of the state. Corruption among government officials remains one of the common issues and the least tackled challenge facing government public officials in Ghana (Bhuiyan, 2010).

Another political twist to SWM in Ghana arises when there is a change of government. The political system of Ghana is such that a change of government ultimately requires total overhauling of all officials heading state boards and institutions. Thus, chief executives of all MMDAs are required to step down and make way for new officials. In effect, on-going projects are shelved due to political fallout between different political parties (Henry et al., 2006). In order to score political points, the newly appointed chief executives, make decisions in the interest of their party (Henry et al., 2006). This situation is common in most African countries. For instance, in Namibia and Kenya, political leaders intentionally incite their members to reject slum upgrading projects because of fear of losing their votes when they move out of the slums (Henry et al., 2006). This lack of long-term political commitment results in abandonment of uncompleted projects by the previous administration (Zarate et al., 2008).

The next topic discusses the legal and policy framework guiding the management of waste in the country. It throws more light on the NESP, because it serves as the primary document overseeing environmental sanitation and waste management in Ghana. Moreover, it is

the only policy document that captures community clean-up exercises and that lays down the roles of community members and civil societies in the exercise.

2.6. The Legal and Policy Framework Guiding Waste Management in Ghana

An effective waste management system requires clear laid down procedures on the appropriate waste collection, the most cost efficient means of transportation, and the most environmentally sound treatment and disposal mechanism. For such a system to operate there must be adequate policy and legal frameworks to guide regulators, service providers and generators to act diligently. For instance, while the Local Government Act 1993 (462) tasks the MMDAs as the sole regulators of waste management in Ghana, the NESP approves the involvement of the private sector (institutional aspect of waste management) in the collection and disposal of waste to complement the efforts and relieve the burden of the public sector in waste delivery services (MLGRD, 2010a).

It is worthy to note that, before the promulgation of legal and policy document on SWM, the Criminal Code on public nuisance served as the only legislative framework on environmental sanitation. This legal instrument aimed at tackling indiscriminate dumping of solid waste at unauthorised places and punishing offenders. According to the Criminal Code, 1960 (Act 29), 'anyone who places or allows to be placed, any rubbish, or unwholesome material, on any street, or open space, except at the designated site specified by the assembly or health officer for that purpose commits a punishable offence'. This legal document placed the responsibility of keeping the immediate and nearby surroundings on the shoulders of all citizens.

The legal frameworks guiding waste management and environmental sanitation in Ghana include: the Local Government Act, 1993 (Act 462), the Environmental Protection Agency Act, 1994 (Act 490), the Water Resources Commission Act, 1996 (Act 522), and the Environmental

Assessment Regulations, 1999 (LI 1652). The above legal instruments have been promulgated and are enforceable at the law court. The policy frameworks guiding environmental sanitation in Ghana include the National Environmental Sanitation Policy, 1991, the Guidelines for the Management of Health Care and Veterinary Waste in Ghana, the Landfill Guidelines and the Manual for the preparation of District Waste Management Plans in Ghana. In the context of this study, the Local Government Act and the National Environmental Sanitation Policy will be discussed in detail.

2.6.1. The Local Government Act 1993 (462)

The Local Government Act can be termed as the statutory document to guide the decentralisation mechanism in Ghana. This Act came in the wake of 1980's and 1900's when most African countries adopted a more democratic system that ensures empowering grassroots actors for local governance (UN-Habitat, 2016). The Act has 163 sections with fourteen components geared towards the decentralisation programme. It further sets out, in Section 36, the Regional Coordinating Council as the head of the assembly's bureaucracy. The Act empowers and tasks all local authorities to oversee waste management in their various jurisdictions. It provides the necessary by-laws to legalise the roles of the waste management and the environmental health departments. Under Section 79 of the Act, local authorities have the prerogative to sanction an offender by paying a fine or by imprisonment not beyond six months. It also allows MMDAs to make by-laws but these can only become legal when the designated minister has endorsed and published them in a gazette. The Act mandates the local authorities to supervise the collection, transportation, disposal and management of landfill sites through their waste management and environmental health departments. By extension, all refuse materials beyond the reach of households becomes the responsibility of the designated Waste Management Department (WMD).

The local authorities are also responsible for the execution, contract management, supervision, monitoring and evaluation of waste management policies and performance of service providers. Their waste management unit provides back-up support when private service providers fail to live up to expectation. In accordance with this legal framework, the local authorities have put in place house-to-house (HH) and central container collection (CCC) systems to collect and dispose solid waste at the community level. It must be acknowledged that the Act is silent on giving a legal backing to the NSD exercise. It means that residents who fail to participate in the NSD exercise cannot be prosecuted in the court of law (Fordjour, 2015).

2.6.2. The National Environmental Sanitation Policy

The National Environmental Sanitation Policy (NESP) was designed in 1999 and serves as a blueprint for improving environmental health and sanitation in Ghana. It is the overarching policy that ensures protection of human health and environment in the country. It was set out in 'Vision 2020' as a paramount element underlying health and human development (MLGRD, 2010a). The policy further emphasises environmental protection and the improved management of human settlements as key factors in rural and urban development. After 10 years of implementation, the gaps in the policy warranted a review to meet the current socio-political and environmental standards.

The revised edition (MLGRD, 2010a) was therefore prepared to reflect the changing context of international and national policy priorities: the Millennium Development Goals (2000-2015), the New Partnership for African Development-(NEPAD) and the Growth and Poverty Reduction Strategy GPRS II (2006 - 2009). The new policy focuses on seven thematic areas, namely: capacity development; information, education and communication, legislation and regulation, sustainable financing and cost recovery, research and development and monitoring and evaluation. It outlines the procedures and standards to be followed when managing solid, liquid and industrial waste.

One of the key recommendations in the policy was the celebration of a national environmental sanitation day once every year (MLGRD, 1999; MLGRD, 2010a). A national action plan (NESSAP) was also prepared to assist and guide MMDAs in executing their mandate. The policy also directed district assemblies to fix a date for a clean-up exercise in their various jurisdictions. However, this policy directive remained silent until 2014 when a cholera epidemic swept through the entire country, especially the capital city. It became expedient to revive this policy directive in order to rid the nation of decades of poor environmental sanitation conditions (Fordjour, 2015).

The policy acknowledged that the increasing urban population implies increased waste generation of all types (MLGRD, 2010a; Oteng-Ababio, 2010b). It recognised the collective contribution of all actors (generators, regulators and service providers) to solve the environmental sanitation menace. Government institutions responsible for implementing the policy were regarded as principal sector agencies. They include MLGRD (lead sector agency), National Environmental Sanitation Policy Coordinating Council (NESPoCC), MMDAs and the private waste service providers. Institutions offering supporting roles were regarded as allied sector agencies, and they include, Ministry of Health (MoH), Ministry of Education, Ministry of Environment, Science and Technology and Innovation (MESTI), Ministry of Water Resources, Works and Housing (MWRWH), Ministry of Finance and Economic Planning (MOFEP), Ministry of Trade and Industry (MOTI), Ministry of Women and Children Affairs (MOWACA), Ministry of Roads and Highways, Ministry of Transport, Ministry of Energy, Ministry of Information, Ministry of Food and Agriculture, Ministry of Tourism, Environmental Protection Agency, Town and Country Planning Department, Ghana Statistical Service (GSS), Hydrological Services Department (HSD), Community Water and Sanitation Agency, Council for Scientific and Industrial Research (CSIR), Ghana Standards Board, Food and Drugs Board and the Wildlife Board of the Forestry Commission.

To the informal actors and institutions, the policy requested communities to establish sanitation committees which would in turn set sanitation norms in line with the national sanitation policy. CBOs were therefore expected to support local assemblies and unit committees in the planning, financing and developing community sanitation guidelines and infrastructure. The local authorities, on the other hand, were expected to provide the enabling environment for the exercise to operate smoothly. The respective roles of individuals, community, CBOs, NGOs, service providers and local authorities are clearly defined in the policy. For the purpose of this study, the responsibilities of community based actors and institutions are highlighted below.

The responsibilities of individuals established in the NESP (MLGRD, 2010a: 22) are as follows:

i. Every resident should participate in all communal environmental sanitation exercises organised by the community or its representatives;
ii. Residents must clean their immediate environs of the property they occupy, including access ways and the drains and roads abutting the property;
iii. Provide temporary storage of wastes within the property and disposal thereof outside the property, as may be directed by the competent authority;
iv. Take measures to prevent the breeding of pests and disease vectors within and in the immediate environs of the property they occupy;
v. Residents should ensure that the wider environment is not polluted or otherwise adversely affected by their activities;
vi. Hygienically dispose of all wastes they generate in public areas by use of an authorised public toilet or solid waste container, as appropriate.

Each community (MLGRD, 2010a: 22) is expected to undertake the following responsibilities:

i. Establish community environmental sanitation norms in line with national sanitation policy;
ii. Establish community sanitation committee with the support of designated local authority,

iii. Undertake community sanitation and hygiene education to create awareness of environmental sanitation issues,

iv. Maintain a clean, safe and pleasant physical environment in their settlement,

v. Under the leadership of their respective local authority, organise participatory neighbourhood cleansing once every two months on dates determined by communities,

vi. Mobilise all citizens to participate in observing the NSD exercise once every year on a date to be fixed by government,

vii. Sanction residents who fail to participate in neighbourhood cleaning exercises, or who omit or commit acts contrary to community sanitation norms,

viii. Take the necessary steps to develop appropriate environmental sanitation infrastructure such as domestic and public toilets and waste disposal sites,

ix. Prevent soil, water and air pollution.

CBOs and NGOs (MLGRD, 2010a: 23) assigned the following responsibilities:

i. Help communities to mobilise residents for clean-up exercises,

ii. Help district assemblies and community sanitation committees in the planning, funding and development of community sanitation infrastructure for the safe disposal of wastes and the prevention of soil, water and air pollution,

The policy stresses that in situations where individuals or institutions fail to discharge these responsibilities; the appropriate authorities shall take any necessary remedial action at the expense of those in default (MLGRD, 1999; 2010a). The policy, however, fails to emphasise on waste separation at source, which is aimed at minimising waste and protecting the environment in the long run. Several studies (AMA, 2006; Crook & Ayee, 2006: 56; Owusu, 2010) have indicated that the policy has not really achieved its target of instilling behavioural changes in citizens towards waste handling, because indiscriminate dumping in drainage channels and other

public places is still rampant. Having discussed the roles of community members in environmental sanitation, the next subtopic gives an overview of the NSD exercise.

2.6.2.1. The National Sanitation Day Exercise

The NSD exercise was a policy intervention aimed at addressing decades of poor environmental sanitation in Ghana (Fordjour, 2015). It was born out of the NESP and intended to be celebrated to commemorate public holidays like African Union (AU) day. Government could also fix a date to observe a nationwide clean-up exercise, and community members could also organise it within their locality (MLGRD, 2010a). It was launched by the NDC government in September 2014 and started taking effect in November 2014 (Fordjour, 2015: Manteaw, 2017). The NSD exercise was celebrated on the first Saturday of every month. Suffice to add that community clean-up exercise was already in existence, but the NSD exercise was an attempt by government to institutionalise it in order to make it a nationwide activity and confirm its permanency.

To achieve this policy directive, the monthly clean-up exercise was guided by three key principles. First, all Metropolitan, Municipal and District Chief Executives (MMDCEs) were to spearhead the clean-up exercise in their respective jurisdictions (institutional aspect of waste management). Unfortunately, government failed to empower traditional authorities and community stakeholders to organise the NSD exercise at their community level. The only step government took in this direction was to appeal for their maximum support. This was clearly against the tenets of urban governance (Oteng-Ababio, 2007; Obeng-Odoom, 2017). The second principle was that private service providers were expected to support local authorities in waste collection, transportation and disposal (institutional and technical aspect of waste management). In order to encourage community participation, no fee was charged for waste collection during the NSD exercise (financial aspect of waste management). This was a potential recipe for

community members to indulge in unacceptable practices, and details of this incidence will be discussed in Chapter Four of this study.

Finally, MMDAs were supposed to create the enabling environment by providing tools such as wheelbarrows, brooms, shovels, tricycles, rakes, gloves among others (technical aspect of waste management). These tools were meant to complement effort of community members in observing the NSD exercise in their neighbourhood. In order to ensure active community participation, vehicles were banned from moving until the clean-up exercise was over, except on emergency cases (Fordjour, 2015). Having established that community clean-up exercise was already in existence before the introduction of the NSD exercise, the next topic will discuss in detail the concept of community participation.

2.7. The Concept of Community Participation

At the global level, community participation has become the central focus for advocates interested in the bottom-up approach (Babaei et al., 2015). A thorough review however shows that the concept of community participation varies greatly. The different perceptions regarding community participation in SWM refer to a substantive distinction, which has both practical and policy significance and implications.

The term participation is often metamorphised with adjectives resulting in newer terms like community participation, people's participation, public participation, citizen participation and popular participation. The concept is often akin to bottom-up approaches to solving community-based problems (Adoboe & Seidu, 2016). According to the Merriam Webster Dictionary, participation means to be involved with others in doing something: to take part in an activity or event with others, thereby emphasising the rights of people and the collective effort to achieve a goal or target. To Brager et al., (1987), participation is a means to inform and educate

citizens in order to raise their competence. It provides the platform for community members to sway decisions that affect their lives and to be a medium for redirecting political power. By extension, it serves as a means for service beneficiaries to hold service providers accountable.

Armitage (1988) is therefore of the view that citizen participation is an opportunity for people to respond to public concerns, express their opinions about decisions that affect their lives and take control over initiatives in their community. The concept is therefore touted to be among the methods capable of solving the wanton escalation of environmental problems in communities such as environmental sanitation, access to water and other social amenities. Chappel (2005) argues that community participation may be a demonstration of a conventional sense of powerlessness experienced by informal actors when it comes to influencing central government decisions. It is through this medium that citizens feel a sense of worth in contributing to community development and by extension build and strengthen confidence with/in state actors.

As a procedural concept, community participation is a sociological process by which individuals living within an area organise and plan towards the development of their community (Malik et al., 2015). It entails financial contribution and socio-political commitment at all stages of a project. The planning and maintenance of projects require community-based leaders to contribute effectively in order to achieve the expected outcomes. This triggers a sense of ownership and responsibility by the residents to sustain the project. Key stakeholders include members of CBOs, NGOs, and FBOs that operate within the community. Apart from creating unity and harmony in their area of influence, CBOs act as a mouthpiece and springboard for community development.

Muller et al., (2002) make a clear distinction between community participation as an instrument and as an objective. With respect to instrument, community participation is a means to make SWM more efficient. However, community participation as an objective is seen as a

paramount tool to achieve social development. The growing consensus for CBOs as a tool for development in developing countries is against the background of failure of service providers, especially state-owned agencies, in ensuring sanity in the various communities (Baud et al., 2001; Tukahirwa et al., 2010).

Over the years, planners and governments have regarded community participation in two different contexts. To some, citizen's engagement in the development of urban services is a way of guaranteeing that people are willing to accept predetermined policies and comply in order to make the service function efficiently, such as the PAYD principle. To others, people's involvement in social development is an avenue to strengthen local capacity through awareness creation and education. This empowers community members in the decision-making process in providing urban services (Tukahirwa et al., 2010).

Muller and Hoffman (2002) admit that a community can provide financial, intellectual and organisational support to deal with urban solid waste. For instance, through the support of the Co-operative Housing Foundation (CHF), the youth in James Town, a low-income area in Accra were given training on source separation geared towards achieving the economic value of waste. The initiative was dubbed Youth Engagement in Service (YES), and was successful due to the fervent engagement and support of the chief and other local stakeholders (Oteng-Ababio, 2014). Local authorities are therefore expected to coordinate and mobilise local resources accordingly (Dhokhikha et al., 2015). Failure to recognise the efforts of the community affects the sustainability of waste management policies.

Having discussed the literature relevant to this study, the next subtopic will cover the study's theoretical and conceptual frameworks.

2.8. Theoretical Framework

The theoretical framework for the study was adopted from Icek Ajzen's (1991) Theory of Planned Behaviour (TPB), a theory which was developed in 1985. It is a social psychology theory explaining human behaviour that links beliefs with human action. It basically seeks to predict individual intentions to perform an activity. The theory posits that a person's behaviour is driven by his or her behavioural intentions which are determined by the person's attitude toward behaviour, subjective norms, and perceived behavioural control (Nguyen et al., 2015).

Behavioural intentions refer to the motivation of a person which is a demonstration of the person's conscious plan to undertake a particular action or behaviour (Ajzen, 1991). Thus, the stronger the urge or intention, the more likely a particular behaviour will be exhibited. Attitude towards behaviour is explained as the degree to which a person develops positive or negative feelings towards a particular behaviour. The emphasis here is on the outcome of performing the behaviour. Therefore, if the person thinks he or she would feel better after performing the behaviour, the likelihood that the behaviour will be performed is high(er) and vice versa. With reference to the study, people who are convinced the NSD exercise will mitigate the risk of flood and infectious diseases are likely to participate regularly.

Subjective norms, on the other hand, refer to how the social environment within which a person resides perceives the behaviour (Ajzen, 1991). This determinant of an individual's behaviour is usually termed as peer pressure, justifying the influence of the social environment on peoples' behaviour. By inference, if a high number of community members are engaged in the NSD exercise, the likelihood that a resident will also participate is high(er) and vice versa. This determinant of behavioural intention explains how a residential location influences a person's participation in the NSD exercise. The study's hypothesis was derived from this theoretical background.

The last determinant is concerned with perceived behavioural control. Here, the ease or difficulty of performing a task will determine a person's behaviour. The emphasis here is on the provision of resources and incentives. This determinant of individual behaviour is captured under financial support in the conceptual framework (discussed in detail later, in Figure 2.3). The likelihood is that individuals performing behaviour will increase when they are aware of adequate resources and incentives. This implies that the adequate provision of incentives is likely to stimulate an individual's participation in the NSD exercise. Absence of incentives for community members is likely to influence their response in the NSD exercise.

According to Burton and Wilson (2006), behaviour is complex, and therefore the means through which we can understand behaviour and therefore effect the necessary changes, is to provide policy makers with relevant information about the nature and structure of environmental action and what appears to influence the dominant participants. Fabrigar (2004) adds that an individual's attitude, which can be positive or negative feeling, exerts some level of influence on the person's behaviour. And behavioural decisions depend upon the attitude of the person (Nguyen et al., 2015). In other words, those likely to participate in the NSD exercise have developed the habit of cleaning their environment. Barr and Gilg (2006) add that people who engage in daily clean-up activities tend to acquire a long-term habit of environmental cleanliness.

According to Dietz (1994), people take actions or make choices based on the information they gain from rules rather than through personal interest in environmental initiatives. He further argues that different rules are applied based on the context of the situation, making it difficult to identify the actual decisions people take. Thus, the level of awareness creation is capable of affecting how residents are involved in the monthly clean-up exercise. Gregson (2007) adds that to ensure sustainable environmental practice, there should be continual education and awareness creation for the public.

Regarding the influence of information on action, Barr and Gilg (2006) propose that more information on environmental problems should be provided to people to instil a sense of responsibility and awareness. Understanding public ignorance and changing their attitude and behaviour towards environmental protection is seen as a process of filling a value-action gap (Burgess et al., 1998). Owens (2000) also shares the view that awareness and information should reflect the environmentally conscious lifestyle of diverse social groups. This is against the background that diverse social groups respond differently to information and education. For example, low-income high-density residents learn better when exposed to images and charts (Muller & Hoffman, 2002). In this vein, awareness creation should be in tandem with a particular target audience. However, Barr and Gilg (2005) contend that awareness creation alone does not bring about attitudinal changes whereas actively engaging households in waste policies will bring the desired changes.

Even though TPB provides a logical explanation of how people react in a particular setting, it has some limitations. According to Ajzen (1991), other factors such as personal environmental consciousness, moral obligation to perform and a decision to refuse to participate in an initiative must equally be considered. In addition, Barr and Gilg (2005) state that other variables, other than subjective norms and attitudes are capable of influencing how people behave. Thus, Shwartz (1992) contend that those likely to partake in environmental actions are altruists and bio-centrists. Other scholars, (Mulder et al., 2006; Yau, 2010) argue that external factors such as sanctions, economic incentives, trust between stakeholders, altruism, communication, reciprocity and social norms are capable of influencing peoples' intention to participate in community activities.

The TPB was tested in America, a developed country, where waste management regulations and the socio-economic conditions differ from those in Ghana. In Ghana, a

developing country, enforcing environmental rules and regulations has been a challenge for local authorities (Oteng-Ababio, 2007). Despite the limitations of the theory chosen for this study, it still provides the theoretical insights to explain how people are likely to behave under certain conditions. For instance, based on the theory, if the necessary tools are provided and service providers collect waste after the exercise, community participation is likely to be higher.

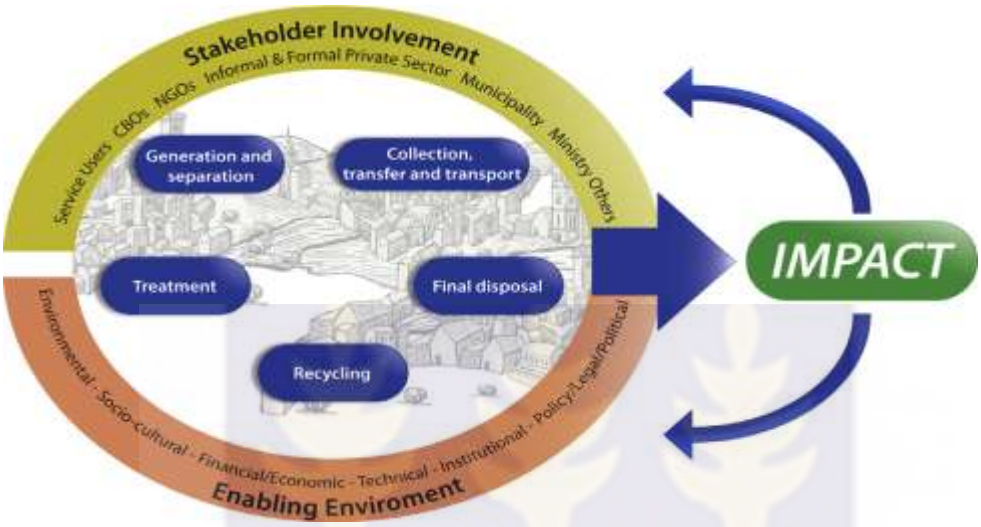
2.9. Conceptual Framework

The conceptual framework of the study adapted and modified the Integrated Sustainable Waste Management (ISWM) Model (see Figure 2.2). According to Guerrero et al. (2013), the model was originally developed by experts working in developing countries in the mid-1980's (WASTE, 2004). It was further revised by the Collaborative Working Group (CWG) on solid waste management in the mid-1990's (Anschütz et al., 2004). The model considers three key dimensions when analysing a waste management system. They include stakeholders (formal and informal) in the waste management stream, elements (generation, collection, transportation and disposal) of waste (management) and aspects through which the system is scrutinised. It interrogates the behaviour and factors that influence the elements in the waste management system (Guerrero et al., 2013). This model was adapted for the study because it shows the linkages in the aspects (technical, environmental, socio cultural, legal, institutional and economic) that enable the overall waste management system to function (Marshall & Farahbakhsh, 2013).

Even though this model was considered suitable for the study, it has some limitations. The ISWM model was developed without considering attitudinal differences in urban and rural residents, because earlier studies (Redfield, 1930; Greenfield, 2013; Chen, 2015) have confirmed that a citizen's response to communal activities differ in heterogeneous and homogenous areas. Another shortfall is the inability of the ISWM model to understand peoples' political decision,

which is likely to motivate their participation in the NSD exercise. To offset this limitation, explanations in the theoretical framework will be used to complement the conceptual framework.

Figure 2. 2. The Integrated Sustainable Waste Management (ISWM) Model



Source: WASTE (2004).

The conceptual framework for the study is shown in Figure 2.3. The actors refer to formal and informal stakeholders who participate in the NSD exercise. The formal actors consist of public actors and private service providers. The informal actors include civil society organisations (CBOs, FBOs and NGOs), community members and individuals. The aspects of waste management for this study are explained in detail below.

The social aspect of the conceptual framework looks at how individuals perceive the NSD exercise which determines their attitude and behaviour towards it. This can be changed through awareness creation and sensitisation at the community level (Barr & Gilg, 2006). Ensuring that citizens develop good attitudes towards waste handling was one of the reasons why the NESSAP was prepared to assist local authorities to embark on awareness creation campaigns (MLGRD, 2010b).

The political and legal aspects of the conceptual framework refer to the policy framework and legal status of the NSD exercise. Issues of concern here relate to planning of the NSD exercise and how it can be enforced legally. The framework argues that if community stakeholders are engaged in planning the exercise, participation is likely to be higher. For instance, if traditional authorities are given the power to summon and regulate the NSD exercise, community participation is likely to be higher. Since traditional authorities wield power and authority in their jurisdictions, they will play a key role in institutionalising the monthly clean-up exercise (Owusu & Afutu-Kotey, 2010). This can be achieved through active consultations with CBOs, FBOs and NGOs as well as with the local authorities. If the monthly clean-up exercise is enforceable by law, participation is likely to be higher. However, if there is no legal instrument to make the exercise compulsory, people will develop an indifferent attitude towards the NSD exercise.

The financial aspect of the conceptual framework entails the support and incentives given to community members to stimulate their participation in the NSD exercise. This aspect of waste management is captured in the theoretical framework as perceived behavioural control (that is the presence or absence of incentives). If enough incentives, such as food or stipends, are given to community members after every clean-up exercise, response towards participation is likely to be higher. On the contrary, if members are not provided with any incentive as a form of appreciation for their effort, participation is likely to decline. One must bear in mind that the NSD exercise is a voluntary activity and residents are not forced to participate. Based on this premise, it can be inferred that some level of financial support is required to provide incentives for community members in order to whip up their interest in the NSD exercise.

Aside the social, political/legal and financial aspects of waste management, the level of technical support is also capable of motivating peoples' participate in the NSD exercise. This

aspect of waste management is stated in the theoretical framework as perceived behavioural control. If the provision of tools and equipment are in limited supply, community members will be less interested to participate in the NSD exercise. Other community members are likely to use the absence of tool as an excuse for not participating. On the other hand, if logistics are in adequate supply, community members are likely to actively engage in the NSD exercise. It must be noted that when service providers delay in collecting refuse after a clean-up exercise, community members, especially those residing along a drainage, are less motivated to engage in future NSD exercises. Local authorities can encourage active participation by providing the necessary technical support to each community during the celebration of NSD exercise.

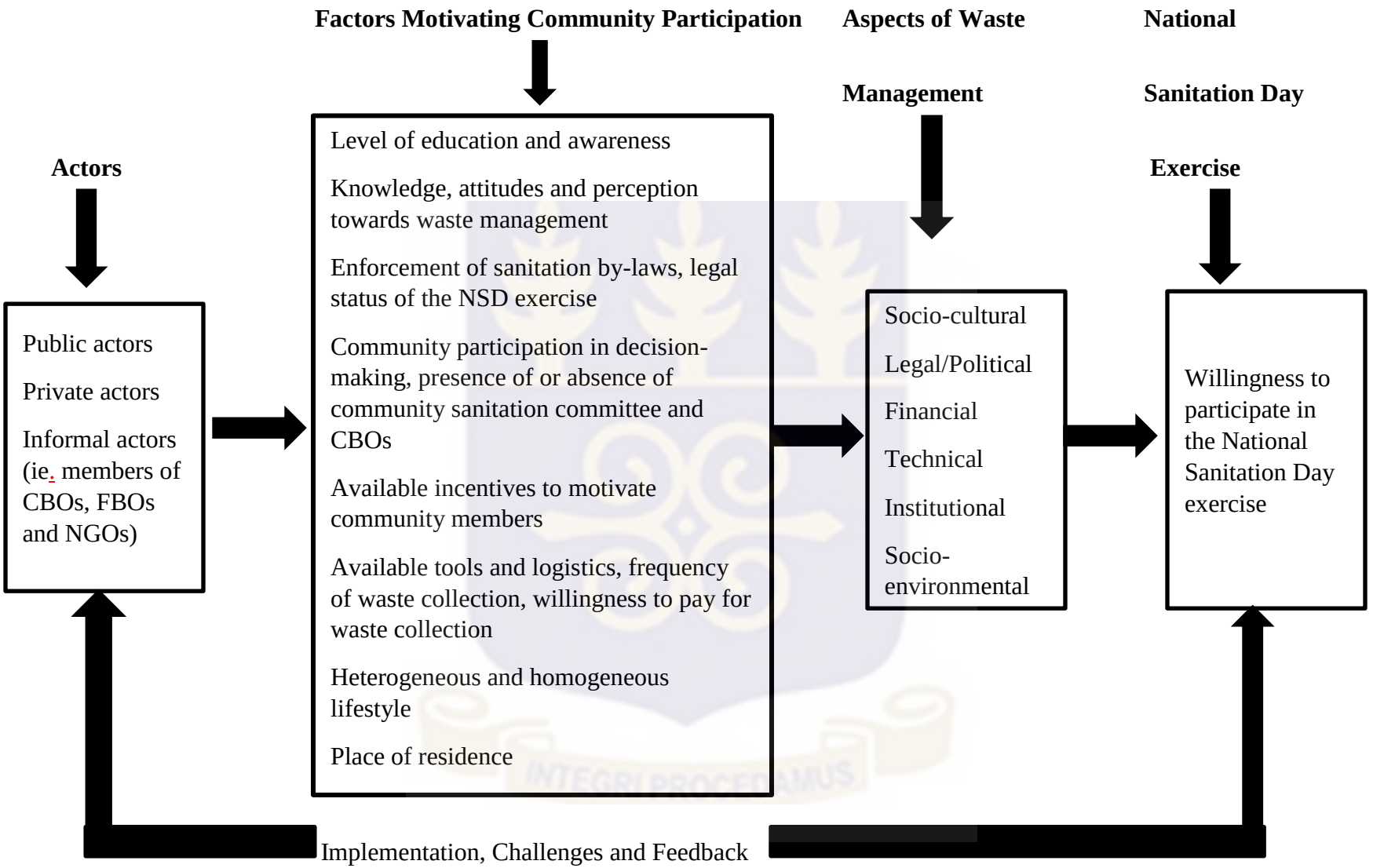
The institutional aspect of the NSD exercise in the conceptual framework looks at existing structures in the community and how they (are) can be involved in policy formulation and implementation. It is against this background that the NESP directed local authorities to ensure the establishment of community environmental sanitation committees. In Ghana, assemblies have electoral areas which are presided over by assembly members. The assembly members are assisted by unit committee members in steering the affairs of the community. Some communities also have residence associations that work to improve the social conditions in their neighbourhoods. If local authorities actively engage these community structures and agents in planning for the NSD exercise while bearing in mind the other aspects raised above, community participation is likely to be higher. Involving community members in decision-making processes tends to affect their response in local programmes and initiatives (Muller & Hoffman, 2002; Gregson et al. 2007). Influential stakeholders like traditional authorities, religious leaders, community activists, assembly members and opinion leaders must be actively engaged in the planning process to canvass support from community members. Support and empowerment in

the form of training and human resource development can be provided to build the capacity of community members.

Unlike the ISWM model developed by WASTE (2004), this model considers how respondents' participation in the NSD can be motivated by their residential location. This is captured under the socio-environmental aspect of waste management. The areas selected for this study were the Accra Metropolis, characterised by it heterogeneity, and Mpohor District, characterised by it homogeneity. This explains why the ISWM model was adapted and modified to suit the comparative nature of this research. The socio-environmental aspect also takes into consideration the level of interaction between social groups and their organisational structure. Therefore, areas with strong community bonds, evident by the presence of CBOs, are more likely to participate in the NSD exercise. Redfield (1930) is of the view that rural folks engage in communal exercises out of duty, without expecting any remuneration. In the case of urban societies, residents are rational and would expect payment for any work done. Life in the city has conditioned urbanites to be more calculative and rational. Urbanites use their head more than their heart in their daily activities (Simmel, 2012). Chen (2015) has emphasised that rural communities characterised by their social homogeneity have stronger bonds than urban societies with heterogeneous social character. It presupposes that rural dwellers are more organised to undertake collective tasks than urbanites who are less organised to perform collective activities. Community interest is valued over individual interest in rural areas, whilst individual interest supersedes collective interest in urban areas (Simmel, 2012; Greenfield, 2013).

Finally, of the conceptual framework shows implementation, challenges and feedback. The challenges that emerge during the implementation of the NSD will serve as a feedback to stakeholders (local authorities, community members, traditional authorities, CBOs, FBOs, NGOs and private service providers.

Figure 2. 3. Factors Motivating Community Participation in the NSD exercise.



Source: Author's construct (adapted from WASTE, 2004; Guerrero et al., 2013).

2.10. Summary

This chapter presented literature on the study as a background and foundation of the study. The chapter established that methods of SWM in developed countries aimed at minimisation while the conventional end-of-pipe approach is employed in most developing countries. However, some developing countries have initiated attempts to source separation strategies which are successfully practised in developed countries. The chapter further touched on some issues of SWM in Ghana and these discussions culminated in the development of the conceptual framework of the study.

The concept of community participation was discussed in detail, while sharing insights from a case study in James Town, a suburb in Accra. It demonstrated the indispensable role of traditional authorities and community members in achieving effective environmental sanitation and reinforcing the economic value of waste. The latter part of this chapter discussed the theoretical and conceptual framework adopted for this study. The theoretical framework adopted Ajzen (1991) Theory of Planned Behaviour which explains how people act or behave under certain conditions. The conceptual framework took insights from WASTE's (2004) Integrated Sustainable Waste Management Model (ISWM). It explains the factors that motivate or militate against people participating in waste management initiatives.

CHAPTER THREE

STUDY AREA AND METHODOLOGY

3.1. Introduction

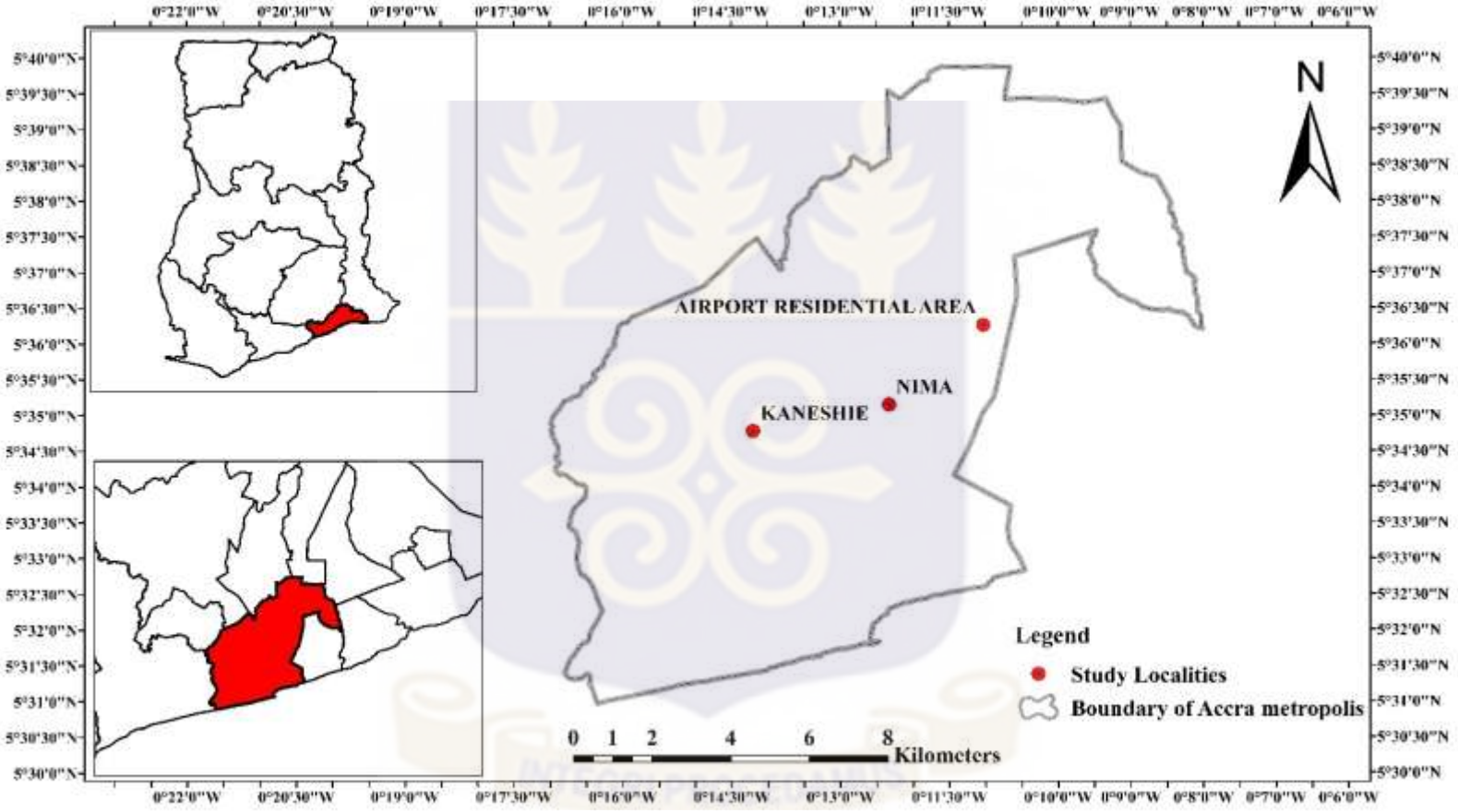
This chapter presents background information on the two study areas as well as the methodology adopted to achieve the four research objectives. The chapter is divided into two sections; the study area is covered in section one, while section two presents the methodology used in the study. For the purpose of analysis, the study selected two research areas with diverse socio-economic characteristics. Accra, the national capital was selected to represent the urbanised and heterogeneous society, while Mpohor was selected to represent a rural community with relatively homogenous characteristics. These two diverse social environments underscore the selection of the comparative research design and it affords the opportunity to undertake both intra and inter- community analysis.

3.2. Profile of Study Areas

3.2.1. The geographies of AMA

Accra serves as the Metropolitan capital of Greater Accra Metropolitan Area (GAMA) and as national capital of Ghana. Accra Metropolitan Area (AMA) covers approximately 139. 674 square kilometres (GSS, 2010a). The metropolis is bordered on the north by Ga Central, Ga West, Ga East and La-Nkwantanang. To the west is Ga South, to the east, Adenta, Ledzokuku/Krowor and La Dade Kotopon, and the south is bordered by the Gulf of Guinea. The city is also located within the smallest region in Ghana. Figure 3.1 is a map showing AMA and the three study localities.

Figure 3. 1. Map of AMA showing the study localities.



Source: Author's construct with the assistance of RSGIS-2017.

In terms of its climatic conditions, Accra lies within the tropical equatorial climatic zone of Africa and receives uniform daylight throughout the year. With an annual average temperature of 26.8^{o}C, the coolest month is August, with a temperature of 24.7^{o}C while March records the hottest period with a mean temperature of 24.7^{o}C. Humidity is marked with variation from 65% during mid-afternoon to 95% at night (Dickson & Benneh, 2001). The longest and major rainy season spans from May and ends somewhere mid-July. It resurfaces between mid-August and ends in October, marking the shortest and the minor raining season. It records an annual rainfall of about 730mm, representing the lowest amount of rainfall in the country.

Socio-demographic characteristics of AMA

Accra Metropolis represents the most urbanised city in Ghana, followed by Kumasi, Sekondi-Takoradi and Tamale. Accra Metropolis was selected as one of the study areas because it recorded the genesis of the NSD exercise. It was in Jamestown, Accra, that the former President and Mayor of the city led the celebration of the NSD exercise, which later gained nationwide recognition and endorsement. Secondly, it was in Accra that a cholera outbreak claimed over 100 lives as a result of poor environmental sanitation (Bagah et al., 2015). Total household population as at 2010 was recorded as 1,599,914 representing 42% of the region's total population. The city has an estimated 450,748 households (GSS, 2010a). Females dominate the city with 51.9% of total population followed by males with 48.1% (GSS, 2010a). According to GSS (2010a), an estimated 23% of households with 10 or more members occupy single rooms. Children under 15 years represent 42.6% of the total population, an indication of the city's youthful population (GSS, 2010a). Today, the growth of the city has exceeded its threshold leading to spillovers into peri-urban zones like Dodowa, Adenta, Haatso, Dome, Ofankor, Amasaman, Pokuase, Weija, Gbawe and other towns (Yankson et al., 2004: Owusu & Oteng-Ababio, 2015).

The housing characteristics of the city confirm the varying population densities (Owusu & Oteng-Ababio, 2015). For instance, a ride along the Kanda highway gives a full glare of Nima which is characterised by rusted corrugated iron-sheets and narrow alleys. The scene at Nima is evidence of a distressed community working hard to survive city life (Owusu et al., 2008). With a population of 80,843, Nima is the second most populous community in AMA, overtaken by Abeka with a population of 85,692 (GSS, 2010a). Other low-income areas include Sabon Zongo, Agbogbloshie (migrant communities), James Town and Chorkor (indigenous communities). These communities represent the high-density areas in AMA (GSS, 2010a). The middle-income communities accommodate the majority of private informal (household enterprises) commercial activities. Notable communities include Kaneshie, Adabraka, Dansoman and Darkuman. The housing characteristics in the middle-income areas are relatively better than in the low-income areas, because some wealthy people live within these communities. Access routes are linked to the main artillery roads making it easier for vehicular movement. Population in certain middle-income areas is less than half the size of the low-income areas. For example, Kaneshie (middle-income area) has a population of 31,141, while Nima (low-income area) has an estimated population of 80,843 (GSS, 2010a). The data from Nima confirm the high-density nature of low-income communities in AMA.

The high-income areas in AMA trace their beginnings from the colonial period. Areas like Ridge and Cantonments used to house Europeans because of these areas' favourable climatic conditions. The architecture and layout of the high-income areas show well planned communities. After independence, the buildings were handed over to government. Today, some of the buildings are privately owned by state officials. This has made land ownership in these areas the preserve of elites in the society. It justifies why the high-income areas receive the best of services because of the influence of residents in these communities (Oteng-Ababio, 2010c). In

the case of the Airport residential area, the area is gradually experiencing mixed land use even though it was strictly meant to house those of the upper class. However, due to foreign investment (Grant, 2014), old buildings are now renovated into a multi-purpose facilities. Suffice to add that none of the high-income areas in AMA is cited among the twenty (20) most populous communities (GSS, 2010a). This confirms the low density nature of the city's high-income communities.

AMA is situated on Ga land. In terms of ethnic segregation, the majority of the indigenous people live in high density areas like James Town (the spiritual home of the Ga people) and in Chorkor (Oteng-Ababio, 2014). The economic viability of AMA has attracted migrants (both skilled and unskilled) into the city with the hope of securing a better source of livelihood. This has changed the social composition of the city entirely to the extent that the Ga indigenous population has become a minority group (Agyei-Mensah & Owusu, 2010; Owusu & Agyei- Mensah, 2011). Ethnic groups such as the Akan and the Ewe, located around the southern section of Ghana, are the dominant population and this can be attributed to their proximity to Accra (Owusu, 2008).

The presence of migrants from the northern section of Ghana has also left imprints on the landscape of the city. For instance, migrants with northern extraction usually settle in Nima and other peri-urban area like Madina (Owusu et al., 2008). Expatriates have not been left out, since the majority of them have taken advantage of the market potential for consumer goods in the country. According to GSS (2010a), Ghanaian nationals, West African nationals and nationals from outside West Africa in AMA recorded 91.2%, 2.9% and 0.5% respectively (GSS, 2010a). The result from the census report confirms the heterogeneous nature of AMA.

Economic characteristics of AMA

The Accra Metropolis has served as the seat of government since 1877 (Asiedu & Agyei-Mensah, 2008). The city contains large multinational financial institutions and industrial companies making it the leading commercial hub in Ghana (Owusu & Oteng-Ababio, 2015). AMA contains the head offices of all ministries and parastatal agencies in the country (Grant 2009; Owusu, 2008). This places the city in a better position to attract local and foreign investors aiming to secure contracts with the government (Grant, 2009; Otiso & Owusu, 2008; Owusu, 2013). It is estimated that AMA receives a daily daytime population of over 3.5 million (Owusu, 2008), a figure which exceeds the official population statistics. The construction of modern shopping malls, gated communities and an improved transportation system underscores the city's growing expansion to the global economy (Grant, 2014; Owusu & Oteng-Ababio, 2015). The energy and communications industry has also grown considerably (Owusu & Oteng-Ababio, 2015).

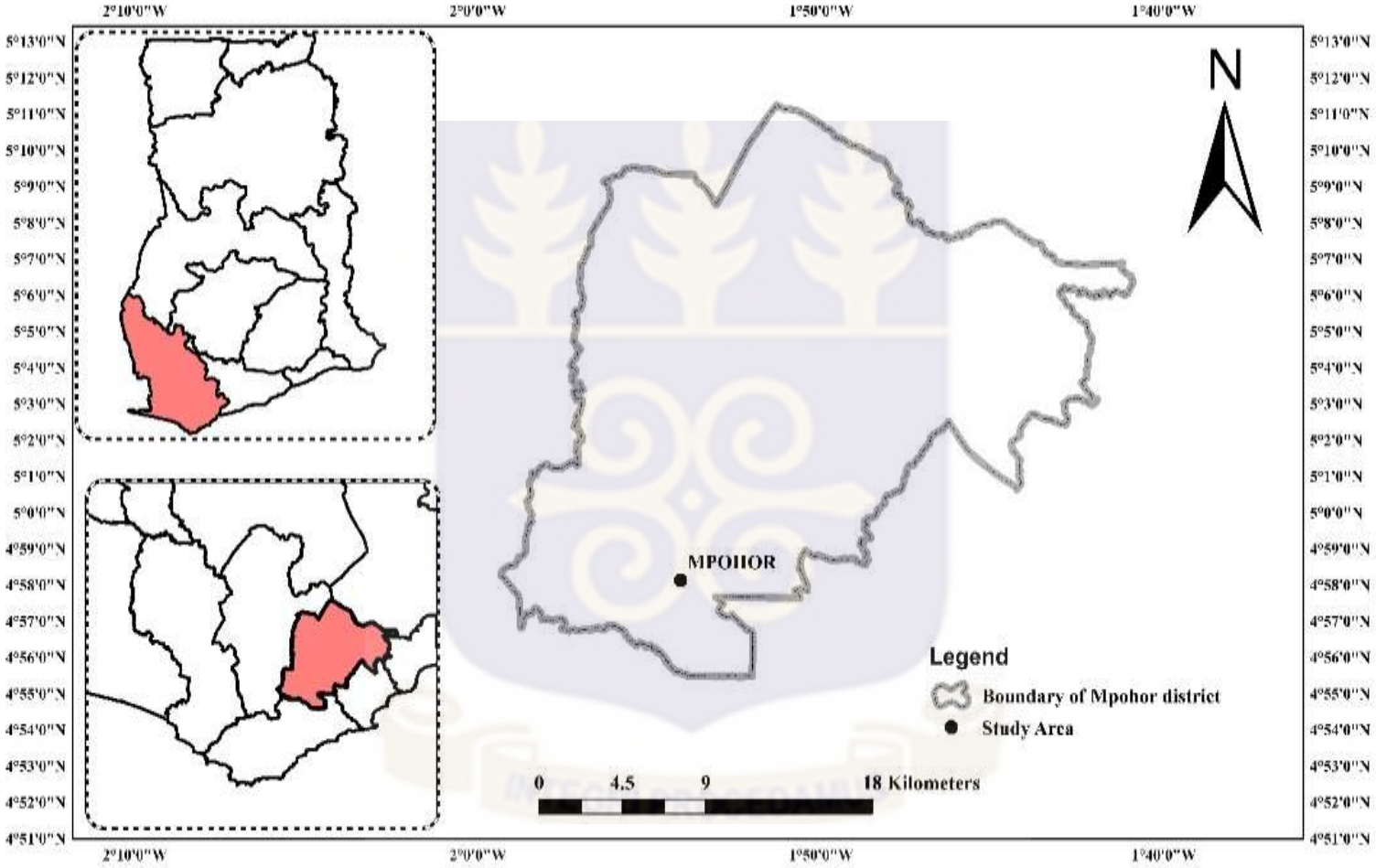
The socio-economic stratification of AMA has influenced the type of institutional arrangement for waste service delivery (Oteng-Ababio, 2011). The common official arrangements for waste collection are house-to-house (HH) and communal container collection (CCC) (Oteng-Ababio, 2010c). According to GSS (2010a), HH system covers 57.4% and CCC covers 32.9% of total service provision. Low-income areas characterised by narrow access routes and tardy payment systems favour the use of CCC. This type of service provision contributes to loitering and indiscriminate dumping because the volume of waste generated exceeds the storage capacity of the waste container. This explains why beneficiaries of the CCC system often complain about poor service due to overflowing container (Owusu, 2010), a situation that provides an avenue for domestic animals and waste pickers to scavenge in the low-income communities (Oteng-Ababio et al., 2014). Residents in the middle-income areas like Kaneshie

and Adabraka blend the house-to-house (HH) system and services of informal waste pickers (kaya bolas) because of their commercial interest and lack of trust in the official service providers to offer timely services (Oteng-Ababio, 2011). In the case of high-income areas, waste collection is strictly by the HH system. The HH system favours private waste contractors because they get direct payment from service beneficiaries and are paid by the assembly for services offered (franchise system). The convenient nature (payment system) of the HH has made some private waste contractors shift away from the CCC system (Oteng-Ababio, 2007).

3.2.2. The geographies of MDA

Mpohor District Area (MDA) is approximately 19km from the main Takoradi-Agona Nkwanta road. The administrative capital of Mpohor District is Mpohor. For the purposes of analysis, Mpohor, which is the capital of the district, was used to represent the entire district as one spatial unit. The reason for selecting Mpohor was that the communities in the entire district exhibited the same socio-economic background (GSS, 2010b). Therefore, selecting one settlement out of the lot did not affect data analyses or results. Thus, the credibility of the results was not marred. The district was carved out of Mpohor Wassa East District through a Legislative Instrument (LI) in 2012 (GSS, 2010b). Mpohor District is a landlocked district located within the Western Region. The district is bordered on the north by Tarkwa-Nsuaem District, at the south is the Sekondi-Takoradi Metropolis and Shama District, and the east is bordered by Wassa East District (GSS, 2010b). The district covers an area of 524.533 square km (Mantey et al., 2016). Figure 3.2 shows a map of Mpohor District and the study area. Just like other districts in the southern part of Ghana, Mpohor District also falls within the tropical climatic zone. The mean annual rainfall in the district is 1500mm, and it ranges from 1300 to 2000mm (GSS, 2010b). March to July marks the wet season while November to January marks the dry season in the district. The general climatic condition of the district is supportive of agricultural activities.

Figure 3. 2. Map of MDA showing the study area.



Source: Author's construct with the assistance of RSGIS-2017.

Socio-demographic characteristics of MDA

Mpohor District has a population of 42,923, representing 1.8% of Western Region's total population. The district was selected as a study area because it represents a rural community with strong communal bonds (Redfield, 1930). The socio-economic setting of Mpohor, which is different from Accra, makes it the ideal choice to undertake a comparative study. Unlike Accra, males dominate slightly with a population of 50.1% whilst females record 49.9% (GSS, 2010b). The number of households in the district are 11, 572 (GSS, 2010b). Unlike AMA, which is entirely urban (GSS, 2010a), 74.8% of the total households in Mpohor District represent rural areas and the remaining 25.2 % represent urban areas of the district (GSS, 2010b). In terms of dwellings, the most common housing unit in Mpohor District is: separate house, compound house, semi-detached house and flats/apartments representing 36.4%, 34.5%, 11.6% and 11.3% respectively (GSS, 2010b).

The traditional leader of the district happens to be the Paramount Chief of Mpohor. He liaises with the district assembly officials in selecting one-third of assembly members for the entire district. This is an indication that the traditional leader is involved in the formal governance system. The indigenous residents celebrate Odwira as their annual festival. According to GSS (2010b) census report, Ghanaian nationals in the district recorded 96.6%, while nationals from West African countries recorded only 0.6%. Expatriates without any West African background recorded 0.4%. This shows that the district is predominantly rural and homogenous with the majority of its population living in rural communities.

In terms of educational status, the entire district recorded 34.7%, 57%, 5.9% and 0.2% for residents who had no formal education, completed basic education, completed secondary education and tertiary education respectively. These statistics raise the impression that informal activities dominate formal activities because there is significant relationship between level of educational attainment and formal employment (Owusu et al., 2008).

Economic characteristics of MDA

The main source of livelihood is agriculture (farming and fishing), representing 49.3% of the employed population in the district (GSS, 2010b). According to the latest census report, 63.9% of the indigenes are into various forms of agriculture. Farming activities of households are usually operated on a small scale. Crop farmers and livestock farmers represent 94.2% and 32.2% respectively (GSS, 2010b). Notable crops include cassava, cocoyam, plantain and vegetables (tomatoes, pepper and garden eggs). Since Mpohor is an agrarian community, there is a tendency that participation in the NSD exercise will be affected by their occupational status. Other notably firms like Benso Oil Palm Plantation (BOPP), Norpalm and Ayiem Oil Mills operate large scale oil palm plantation. These firms provide employment for the indigenes in the district. However, the district has seen an upsurge in illegal mining activities which due to the presence of Lower Birimian and Tarkwaian rocks (Mantey et al., 2016). The common method of solid waste disposal is the CCC system that accounts for 64.6% in the district (GSS, 2010b). An estimated 12% of the inhabitants engage in indiscriminate dumping. HH service provision accounts for only 2% (GSS, 2010b).

3.3. Study Methodology

3.3.1. Research Design

A comparative research design was employed for this study, because the researcher was interested in examining the factors that motivate or militate against community participation in two research areas with different socio-economic characteristics. This type of research design enables the researcher to use the same research techniques in two different research areas, and a comparative analysis is often based on cross-cultural data (Bryman, 2012). The heterogeneous nature of Accra Metropolis and the relatively homogeneous nature of Mpohor District make the comparative design the best option for this study.

3.3.2. Research Strategy

Since any social phenomenon is made of complex entities, mixed methods offer the best tools to address these problems (Sharan, 2002). The study therefore adopted mixed methods to collect and analyse primary data (Bryman, 2012). Mixed methods are basically a combination of quantitative and qualitative research strategies. The qualitative research strategy aims at soliciting the views and perceptions of respondents which are absent in the quantitative techniques (Bryman, 2012). Qualitative techniques elicit information from respondents' perspective since reality is perceived to be multifaceted and socially construed (Teye, 2012). The qualitative instruments for the study included in-depth interviews, focus group discussions (FGDs) and participant observation. Photographs were also taken in the community to portray the level of environmental conditions. Household survey questionnaires were used to collect the quantitative primary data.

3.3.3. Sampling Techniques

The main purpose of the research was to examine why the NSD exercise failed, despite massive public support and endorsement. In order to achieve this objective, a stratified multi-stage sampling technique was used to divide AMA using respondents' income characteristics. Thus, households were grouped into high-income, middle-income and low-income to analyse areal differentials in the AMA. The localities selected were the Airport Residential Area (high-income), Kaneshie (middle-income) and Nima (low-income). Simple random sampling was employed to select respondents because it gives each sample unit a known and equal chance of selection (Teye, 2012). Respondents who have stayed in the locality for ten years and above were selected for the study. Due to the nature of the research, respondents who have participated in the NSD exercise were chosen for the study. The same research technique was employed in selecting respondents in Mpohor District. A purposive sampling technique was used to select key informants to answer semi-structured interviews. The rationale for using this sampling technique was that the researcher was interested in

interviewing key stakeholders involved in planning and implementing the NSD exercise. The key informants included assembly members, official from AMA/WMD, Head of Public Health Department/AMA, officials from Zoomlion Ghana Limited and official from MLGRD Human Settlement and Environmental Sanitation Unit. The topics in the in-depth interview covered assessment of the NESP, measures to stimulate community interest in the clean-up exercise as well as the challenges facing the various service providers in terms of their service delivery.

As part of the data collection process, a total of 14 participants were used for in-depth interviews in the two research areas. Out of the 14 total participants, three (3) were selected from MDA while the remaining 11 were selected from AMA. Out of the 11 participants interviewed in AMA, 6 participants were selected from Nima, four (4) participants were from Kaneshie and one (1) participant from the Airport residential area. A total of 20 participants were used for FGDs in AMA and MDA. Out of the 20 participants, six (6) were selected from MDA and the remaining 14 were selected from AMA. In AMA, six (6) participants from Kaneshie were engaged in the FGDs, while the remaining eight (8) participants were from Nima.

For the household survey, a total of 200 questionnaires were administered. Out of the 200 questionnaires, 170 were administered in the AMA while the remaining 30 were administered in MDA. The distribution of the questionnaires was done in proportion to the population density of the study localities in AMA and MDA. In the study localities of AMA, 95 questionnaires were administered in Nima, 61 in Kaneshie and 14 in the Airport residential area. Thus, the sample size for administering the questionnaire was based on the 2010 District Analytical Report by Ghana Statistical Service (GSS). For the purpose of this study, the number of households in Airport residential, Kaneshie and Nima were summed up to represent the total number of households in AMA. The rationale behind the sample

selection was to show a true representation of respondents view since Accra Metropolis, a heterogeneous society, was denser than Mpohor District, a homogeneous community, in terms of household size. The household density data also informed and determined the number of respondents used in the study localities in AMA (see Table 3.1). Thus, the total number of households in AMA was 117,580. In MDA, the total number of households was 11,572. The total number of households and respondents in AMA and MDA is presented in Table 3.2.

Table 3. 1. Sample Size of Respondents in AMA

Study Localities	Number of Households	Number of Respondents
Airport residential	5,596	14
Kaneshie	31,141	61
Nima	80,843	95
Total	117,580	170

Source: GSS (2010a).

Table 3. 2. Sample Size of Respondents in AMA and MDA

Research Areas	Number of Households	Number of Respondents
AMA	117,580	170
MDA	11,572	30
Total	129,152	200

Source: GSS (2010a; 2010b).

3.4. Sources of Data

3.4.1. Primary Data

Mixed methods were employed to collect data in the two research areas. Primary data consisted of questionnaires, expert interviews/in-depth interviews, FGDs, participant observation and photographs. Appendix 1 was used to collect the household survey. The household questionnaire was developed based on the study's four objectives. Appendix 2 contains questions used for the in-depth interview and FGDs with community members in the two research areas. Questions used during the interview session with the Chief of Mpohor are captured in Appendix 3. Appendix 4 was used to hold expert interview with waste regulators (AMA/WMD) and a private service provider (Zoomlion Ghana limited). Appendix 5 was used during the expert interview session with official of Environmental Health and Human Settlement Unit at the MLGRD.

3.4.2. Secondary Data

The primary data was complemented with secondary data to aid in the data analysis. Google scholar was used to obtain online journals, books and articles. Official policy documents and reports were also accessed online. Notable policy documents include, NESP (both 1999 and 2010 editions), NESSAP, Local Government Act 462 and Criminal Procedure Code 1960 (Act 30). Since existing scholarship fell short on giving account on the NSD exercise, online news portals such as graphiconline.com, myjoyonline.com and citifmonline.com were accessed to get information and photos for the study.

ArcGIS software, version 10.4.1, was used to draw the map of AMA and MDA. A shapefile containing districts in Ghana was obtained from RSGIS at the University of Ghana to extract the two districts. Google Earth Pro (a virtual globe that superimposes satellite images on the earth) was used to pick geographic coordinates of the research locations and transported into a file format that can be accessed with the ArcGIS software.

3.5. Data Analysis

The quantitative field data were analysed with the aid of Statistical Package for Social Sciences (SPSS) version 21 and Microsoft Excel to generate frequency tables and pie charts. Both descriptive and inferential statistics were used to explain similarities and differences in the quantitative data because the study adopted a comparative research design. The variables used for the analyses are gender, age and employment status of respondents who had participated in the NSD exercise. The rationale was to examine the relationship between respondents' background and their participation in the NSD exercise. A three point Likert scale of high, fair and low was use to assess respondents level of knowledge and level of participation in the NSD exercise. A Chi-square goodness of field test was employed to perform a statistical analysis. The reason for performing the Chi-Square goodness of field test was that some of the field data were nominal in terms of their scale of measurement (Teye, 2012). Participation in the NSD, which represents the dependent variable, was nominal data because respondents' response was either yes or no. Residential location of a respondent was selected to represent the independent variable because the data were nominal. For residential location, respondents were either living in AMA or in MDA, which makes their feedback nominal data (only two responses).

The qualitative field data (in-depth interviews, expert interviews, FGDs, participant observation and photographs) were analysed manually without any bias. These qualitative data assisted in unravelling the reason behind respondents' answers in the household questionnaire. The researcher adopted a neutral position in interpreting the data obtained during the field survey. Moreover, the researcher did not hail from any of the two study areas, so results were presented without any favouritism or bias. Respondents were assured of the confidentiality of their responses, since the research was meant for academic purpose only.

3.6. Summary

This chapter discussed the what, who and how of the data collected for the study. All relevant information regarding the study was obtained using primary and secondary data sources. A total of 200 respondents were selected for the household survey. AMA and MDA responded to 170 and 30 questionnaires respectively. A stratified multi-stage probability sampling technique was used to select three localities in AMA based on their income characteristics. The rationale behind this stratification approach was to examine areal differentials within AMA.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter presents the results and discussions of the field work and it begins with respondents' socio-demographic characteristics as a prelude to the data analysis. According to Timlett and Williams (2008) and Angba et al., (2009) community participation in SWM is influenced by people's demographic characteristics. The discussions on respondents' socio-demographic characteristics will be followed by peoples' level of knowledge and perception of the NSD exercise. The final discussions in this chapter will address the factors that motivated or militated against community participation in the NSD exercise. The research instruments and techniques employed in gathering data include questionnaires, interviews, participant observation, focus group discussions (FGDs) and photographs.

4.2. Socio-Demographic Characteristics of Respondents

As already indicated in the methodology section in Chapter Three, a total of 200 respondents were sampled for the study, out of which 170 making 85% came from AMA while the remaining 30 making 15% were sampled from MDA. Basically, the sample was informed by the population dynamics in the two research areas. Selection of respondents was done on the basis of their participation in the NSD exercise within their community. Table 4.1 presents the socio-demographic characteristics of respondents in AMA and MDA. In terms of gender, 44.1% of the respondents in AMA were males, while females accounted for 55.9%. Females dominated the total sample size because women were housekeepers and more associated with environmental sanitation issues (Songsore, 2002). As caretakers of the house, women were often available to respond to the household survey. In conformity with

the national/regional population dynamics, there were more females in AMA than males (GSS, 2010a). The same observation was made in MDA, where females recorded 53.3% and males recorded 46.7%. This justifies the earlier findings of Songsore (2002) that women are caretakers of the home and are available to respond to household surveys. The result in MDA is also in conformity with the national/regional population dynamics that there are more females than males (GSS, 2010b).

In terms of age, respondents in the age class 31 to 40 recorded 35.9%. This was followed by respondents in the age class of 21 to 30, and they recorded 35.3%. Respondents within the age class of 41 to 50 recorded 12.4%. Respondents under 20 years recorded 6.5%. The result in AMA shows that respondents below 20 years were less represented in the total sample size. However, respondents who dominated the total sample size were those within the age classes 21 to 30 and 31 to 40. The findings confirm the national/regional statistics of a youthful urban population in AMA (GSS, 2010a). Result in MDA also showed a youthful rural population in the sample size. The majority of respondents in the age class of 21 to 30 recorded 40%. This was followed by respondents within the age class of 31 to 40, and they recorded 33.3%. Respondents who were below 20 years recorded 6.7%. Just like in AMA, result in MDA shows that, respondents less than 20 years were less represented in the total sample size. Results in MDA reflect the national/regional statistics where the youth dominate the total household population.

Results on respondents' employment sector show that public formal workers in AMA represented 5.3%. Respondents in the private formal sector represented 7.6%. The largest figure was recorded by respondents in the private informal sector and they recorded 78.8%. Respondents who were unemployed recorded 7.1%, while pensioners recorded only 1.2%. It could be inferred from the result in AMA that the majority of respondents in the private informal sector dominate the total sample size. This confirms the national/regional statistics

where the private informal sector represents the largest employment sector in Ghana (GSS, 2010a; Adom, 2017). The same observation was made in MDA, where the private informal sector dominated with 66.7%. This was followed by respondents in the public formal sector and they recorded 23.3%. No record was made for respondents who were unemployed, pensioners or workers in the private formal sector. The results in MDA validate earlier findings, that the private informal sector is the largest employment sector in Ghana (GSS, 2010b; Adom, 2017).

Results on respondents' ethnic background show that the Akan in AMA recorded 39.4%. Those with northern extraction recorded 38.2%. Even though AMA is on Ga land, the indigenous people, the Ga-Adangbe, recorded only 11.8%. This result confirms earlier studies (Owusu, 2008; Agyei-Mensah & Owusu, 2010; Owusu & Agyei-Mensah, 2011) that the Ga indigenous populations in Accra have become a minority due to the influx of other ethnic groups and expatriates. The result obtained in AMA also confirms the heterogeneous nature of the city. The economic viability of Accra attracts migrants and foreign investors and this has changed the social composition of the city (Grant, 2014; Owusu & Oteng-Ababio, 2015). In MDA, the ethnic composition was different. The Akan, who is the indigenous ethnic group, represented 93.4% of the total sample size. The minority ethnic groups were Ewe and Northerners and each recorded 3.3%. Results in MDA confirm the homogeneous nature of this research area, because the Akan was the dominant ethnic group. The Akan dominate MDA because the district is mainly an agrarian community and attract less skilled migrants making the indigenous people the largest group in the sample size (GSS, 2010b).

Table 4. 1. Socio-Demographic Characteristics of Respondents in AMA and MDA.

	AMA		MDA	
Variables	Frequency	(%)	Frequency	(%)
Gender				
Males	75	44.1	14	46.7
Females	95	55.9	16	53.3
Age				
Under 20	11	6.5	2	6.7
21-30	60	35.3	12	40
31-40	61	35.9	10	33.3
41-50	21	12.4	5	16.7
51 +	17	10	1	3.3
Highest level of education				
No formal education	7	4.1	3	10
Primary	78	45.9	9	30
Senior high	49	28.8	11	36.7
Polytechnic	14	8.2	2	6.7
University	22	12.9	5	16.7
Employment sector				
Public formal	9	5.3	7	23.3
Private formal	13	7.6	0	0
Private informal	134	78.8	20	66.7
Unemployed	12	7.1	0	0
Pensioner	2	1.2	3	10
Ethnicity				
Akan	67	39.4	28	93.4
Ga-Adangbe	20	11.8	0	0
Ewe	17	10	1	3.3
Northern extraction	65	38.2	1	3.3
Expatriate	1	0.6	0	0

Source: Field Data, 2017.

4.3. Peoples' Level of Knowledge and Perception on the NSD Exercise

The problem statement in Chapter One of the study established that the NSD exercise was a directive from government to observe the first Saturday of every month as the national day for cleaning the environment (Manteaw, 2017). With this in mind, the study sought to examine respondents' level of knowledge on the NSD exercise.

4.3.1. Respondents' Level of Knowledge on the NSD Exercise

Respondents were asked to rank their level of knowledge on the NSD exercise on the scale of high, fair and low. Table 4.2 shows result obtained from the two study areas. Out of the total respondents, 67.5% indicated a high level of knowledge on the NSD exercise. Respondents who had a fair level of knowledge on the NSD exercise recorded 19%, while those with low level of knowledge recorded 13.5%. It could be inferred that generally more than half of the total respondents indicated high level of awareness about the monthly clean-up exercise. In AMA, 50% of the total respondents recorded high level of knowledge on the NSD exercise. Respondents who received fair and low level of information on the monthly clean-up exercise represented 14.7%. A similar observation was made in MDA where half of the total respondents indicated high level of knowledge on the NSD exercise. Respondents who claimed they received fair level of knowledge recorded 43.3%. The remaining 6.6% said they received low level of information on the NSD exercise.

Table 4. 2. Level of Respondents Knowledge on the NSD exercise in AMA and MDA (% in brackets)

Classification	High	Fair	Low	Total
AMA	120 (70.5)	25 (14.7)	25 (14.7)	170 (100)
MDA	15 (50)	13 (43.3)	2 (6.6)	30 (100)
Total in districts	135 (67.5)	38 (19)	27 (13.5)	200 (100)

Source: Field Data, 2017.

The same view was held by key stakeholders in the waste industry during the interview session. The remarks by an AMA/WMD officer explained why community awareness in the NSD exercise was high (see Box 4.1). He noted that his outfit, together with the Environmental Health Department (EHD), embark on an awareness creation campaign a week before the exercise and on the day (Friday) preceding the exercise. During an interview with the Human Settlement and Environmental Health officer at the MLGRD (see Box 4.2), it came out that the ministry was responsible for awareness creation at the national level, while the MMDAs were responsible for awareness creation at the local level. In addition, the Chief of Mpohor also gave his comments on awareness creation about the NSD exercise in his community (see Box 4.3). The remark by the public officials and Chief of Mpohor confirms why community awareness about the NSD is high in the two study areas.

Box 4.1. Remarks by AMA/WMD official on NSD exercise awareness creation

The WMD together with the EHD embark on awareness creation campaign to canvass for support for community members. We use our information vans to make announcements during the week and on the day of observing the exercise. We invite members of residents' association, assembly members and other key public staff **(**Personal interview, 26/01/2017).

Box 4.2. Remarks by MLGRD official on NSD awareness creation

The major role played by our outfit was in awareness creation, and I think we have not achieved much because it should be a continuous activity. The MLGRD is responsible for awareness creation at the national and regional level. The various MMDAs were tasked to embark on awareness creation in their various jurisdictions. I think we should empower our chiefs because they are the mouth piece of the people. I suggest we go back to our traditional governance system where the chiefs had enormous power and control over the people. We need also to extend the campaigns to our educational institutions, media houses and all state and non-state institutions (Personal interview, 19/01/2017).

Box 4.3. Remarks by Chief of Mpohor on NSD awareness creation.

For any clean-up exercise in this community, I make sure it is announced a week before the actual day. I inform everyone including the '*galamsey*' boys. I warn them to forgo their work and participate in the communal labour and they always comply. We have a community megaphone with wide audience coverage. Once the clean-up exercise is announced, every community member is made aware of it (Personal interview, 30/12/2016).

In the preceding section, it was confirmed that the majority of respondents in the two research areas were aware of the NSD exercise because of the role government officials and local authorities played in the awareness creation campaign. The researcher probed further to find how community members were informed about the NSD exercise. Table 4.3 present results obtained from the two research areas. The total number of respondents who were informed through electronic media recorded 63.5%, while the information van recorded 10.5%. In the two research areas, the community megaphone recorded 11%. Result in AMA shows that, respondents who were informed via information vans recorded 11.2%. Respondents who were informed through electronic media (radio/television) recorded 70.6%. Community information vans recorded only 0.6% in AMA. 17.6 % of respondents indicated

that their neighbour informed them about the NSD exercise. It could be inferred from the result in AMA that electronic media is the most effective source of information flow on the NSD exercise. This is a result of private sector investment which has led to improvement in the communications industry in the capital city (Grant, 2014).

A contrary observation was made in MDA. Here, the community megaphone recorded 70%, while electronic media recorded 23.3%. Respondents who got informed through the information van recorded 6.7%. Results in MDA show that the majority of respondents relied on the community megaphone as their source of information on the NSD exercise. This is confirmed in the statement of the Chief of Mpohor (see Box 4.3). This also confirms earlier findings by Ofei-Aboagye (in Adoboe & Seidu, 2016) that this mode of awareness creation used in rural communities is cost effective and suits the target audience.

Table 4. 3. Source of Information Flow in AMA and MDA (% in brackets).

Classification	Information van	Electronic media	Community megaphone	Neighbour	Total
AMA	19 (11.2)	120 (70.6)	1 (0.6)	30 (17.6)	170 (100)
MDA	2 (6.7)	7 (23.3)	21 (70.0)	0 (0.0)	30 (100)
Total in districts	21 (10.5)	127 (63.5)	22 (11.0)	30 (15.0)	200 (100)

Source: Field Data, 2017.

Regarding awareness of the NSD exercise, the study examined the source of information flow among respondents based on their gender. Table 4.4 presents source of information flow among males and females in MDA. Out of the three sources of information flow, 73.3% of the total respondents were informed through the community megaphone,

while 23.3% were informed through electronic media. Only 3.3% of the total respondents in MDA were informed through the information van. Males who were informed through the information van recorded 7.1%, while females recorded 0%. In terms of information through the community megaphone, males and females recorded 71.4% and 75% respectively. Results in MDA show that the community megaphone was the main medium of informing residents about the NSD exercise. The result is confirmed in the statement by the Chief of Mpohor (see Box 4.3).

Table 4. 4. Source of Information flow from a Gender Perspective in MDA (% in brackets).

Classification	Information van	Electronic media	Community megaphone	Total
Males	1 (7.1)	3 (21.4)	10 (71.4)	14 (100)
Females	0 (0.0)	4 (25.0)	12 (75.0)	16 (100)
Total in MDA	1 (3.3)	7 (23.3)	22 (73.3)	30 (100)

Source: Field Data, 2017.

The research identified four sources of information flow in AMA (see Table 4.5). Out of the four sources of information flow, electronic media recorded 70.6% while the information van recorded 11.2%. The total number of respondents who were informed by their neighbour recorded 17.6%, while a community megaphone recorded only 0.6%. Males recorded 16% while females recorded 7.4% for awareness creation through the information van. In terms of information through electronic media, males and females recorded 66.7% and 73.7% respectively. Males informed by their neighbour recorded 17.3% while females recorded 17.9%. The results show that electronic media was the dominant means of creating awareness because it recorded 70.6% of the total respondents in AMA. Unlike AMA, MDA

favoured the use of the community megaphone because it was cost efficient in terms of the target audience. Thus, information about the NSD exercise was able to reach most of the inhabitants of MDA.

Table 4. 5. Source of Information flow from a Gender Perspective in AMA (% in brackets).

Classification	Information van	Electronic media	Community megaphone	Neighbour	Total
Males	12 (16)	50 (66.7)	0 (0.0)	13 (17.3)	75 (100)
Females	7 (7.4)	70 (73.7)	1 (1.1)	17 (17.9)	95 (100)
Total in AMA	19 (11.2)	120 (70.6)	1 (0.6)	30 (17.6)	170 (100)

Source: Field Data, 2017.

4.3.2. Respondents' Perception on the NSD Exercise

The previous sections discussed respondents' level of knowledge and source of information flow about the NSD exercise. This section will go further to examine respondents' perception on the NSD exercise. The responses gathered from the respondents on the origin of the NSD indicated a perception that the source was either a political party, the government and a community initiative. Respondents who selected the political initiative perceived the NSD exercise as an intervention by the National Democratic Congress (NDC) party. Respondents who selected a government initiative perceived the NSD exercise as an intervention by the local authority. Those who selected the community initiative perceived the NSD exercise as a replica of a neighbourhood clean-up exercise (communal labour).

Table 4.6 present results from the two research areas. From the data, 59.5% of the total respondents perceived the NSD as a community initiative, while 38% perceived it as government initiative. The remaining 2.5% of the total respondents perceived the monthly

clean-up exercise as a political initiative. Result in AMA shows that, 2.4% of respondents perceived the NSD exercise as political initiative. Respondents who perceived the NSD exercise as government initiative recorded 40.6%. The remaining 57.1% thought the NSD exercise was a community initiative. It could be inferred that the majority of respondents in AMA perceived the monthly clean-up exercise as a community initiative.

A similar observation was made in MDA regarding respondents' perception on the NSD exercise. Respondents who perceived the NSD as community initiative recorded 73.3%. Respondents who perceived the exercise as a government initiative recorded 23.3% while political initiative recorded 3.3%. It could be inferred that the majority of respondents in the two research areas perceived the NSD exercise to be a community initiative akin to communal labour (Crook & Ayee, 2006). This confirms that residents were already aware of communal clean-up exercise and that the NSD exercise was an attempt by government to institutionalise it (Oteng-Ababio, 2017).

Table 4. 6. Respondents' Perception on NSD Exercise in AMA and MDA (% in brackets).

Classification	Political initiative	Government Initiative	Community Initiative	Total
AMA	4 (2.4)	69 (40.6)	97 (57.1)	170 (100)
MDA	1 (3.3)	7 (23.3)	22 (73.3)	30 (100)
Total in districts	5 (2.5)	76 (38.0)	119 (59.5)	200 (100)

Source: Field Data, 2017.

The perception of respondents in AMA based on their gender is presented in Table 4.7. Available data shows that 57.1% of the total respondents in AMA perceived the NSD exercise as community initiative. Respondents who perceived the exercise as government

initiative recorded 40.6% while political initiative recorded 2.4%. Males who perceived the NSD as community initiative recorded 53.3% while females recorded 60%. In terms of perceiving the exercise as government initiative, males represented 45.3% while females represented 36.8%. Males who perceived the monthly clean-up exercise as political initiative recorded 1.3% while females recorded 3.2%. It could be inferred that more females perceived the NSD exercise as political initiative than males**.** The result seems to justify the incident in Aboabo, a suburb in Kumasi, where women turned the NSD exercise into a political fanfare (see Plate 4.1).

Table 4. 7. Respondents' Perception on the NSD Exercise from a Gender Perspective in AMA (% in brackets).

Classification	Political initiative	Government initiative	Community initiative	Total
Male	1 (1.3)	34 (45.3)	40 (53.3)	75 (100)
Female	3 (3.2)	35 (36.8)	57 (60.0)	95 (100)
Total in AMA	4 (2.4)	69 (40.6)	97 (57.1)	170 (100)

Source: Field Data, 2017.

Similar observations were made in MDA (see Table 4.8) where 73.3% of total respondents perceived the NSD exercise as community initiative. The total respondents who perceived the exercise as government initiative recorded 23.3% while political initiative recorded 3.3%. Males who perceived the NSD exercise as community initiative recorded 64.3% while females recorded 81.3%. Results from the two research areas show that the majority of females perceived the NSD exercise as a form of communal labour. However,

unlike AMA, the majority of males in MDA perceived the NSD exercise as political initiative.

Table 4. 8. Respondents' Perception on the NSD Exercise from a Gender Perspective in MDA (% in brackets).

Classification	Political initiative	Government initiative	Community initiative	Total
Male	1 (7.1)	4 (28.6)	9 (64.3)	14 (100)
Female	0 (0.0)	3 (18.8)	13 (81.3)	16 (100)
Total in MDA	1 (3.3)	7 (23.3)	22 (73.3)	30 (100)

Source: Field Data, 2017

Plate 4.1. NDC Women Displaying their Party Colours during the NSD exercise at Aboabo, Kumasi.

Source: Awuah (2016).

4.4. Geographical Differences in Participation in the NSD Exercise

The theoretical framework stated that respondents' participation in the NSD exercise can be influenced by an individuals' place of abode. This is also captured in the conceptual framework of the socio-environmental aspect of waste management. It implies that participation in the NSD exercise depends on the residential location of a respondent. It was based on this theoretical underpinning that research question two was formulated. This section of the study is aimed at achieving research objective two.

4.4.1. Level of Community Participation in the NSD Exercise

After examining respondents' knowledge and perception on the NSD exercise, the study analysed respondents' level of participation in the NSD exercise in the two research areas. Suffice to mention, that this section addresses research objective two which seeks to examine the geographical differences in participation in the NSD exercise. Respondents' level of participation in the NSD exercise was ranked between high, fair and low. Table 4.9 presents results in the two research areas. From the data, 14.5% of the total respondents recorded high participation while 66% recorded low participation. The remaining 19.5% of the total respondents participated fairly. In AMA, 17.2% of respondents recorded high participation while 70% recorded low participation. In terms of fair participation, respondents in AMA recorded 14.1%. It could be inferred that community participation in the NSD exercise in AMA was low. The result in AMA is substantiated in the remarks by the AMA/WMD officer and a private service provider. When asked about the level of community participation in the NSD exercise, the AMA/WMD officer intimated that,

> *We try our best to engage community members, but residents exhibit a sense of apathy towards the exercise. In fact, community support is so low because you find people going about their normal daily chores during the clean-up exercise. We have observed that those who rarely participate in the exercise are those who do not have a permanent place of*

> *residence such as the head porters and truck pushers. They are the ones who dump waste indiscriminately. There is always a blame game, because residents who subscribe to official service provisions expect the culprits to descend into the gutters and clean them. Personally, I think some residents have just decided not to participate.* (Personal interview with AMA/WMD officer at Kaneshie on the 26/01/2017).

In addition, an official from Zoomlion said that,

> *It is unfortunate that people have not understood the good intentions of the exercise. In some parts of Accra, you always find residents standing there unconcerned; meanwhile the exercise is concerned about mitigating flooding in such communities. The objective of the exercise was achieved in t the short run, but could not be achieved in the long run because people started losing interest in it.* (Personal interview with Zoomlion Public Relations Officer on the 19/01/2017 at Ashaley Botwe, Accra).

In MDA, respondents recorded 6.7% for high participation. Respondents who participated fairly recorded 50% and the remaining 43.3% recorded low participation. It could be inferred from these results that participation was relatively higher in MDA than AMA because more than half of the respondents in AMA recorded low participation while less than half of the respondents in MDA recorded low participation. The result in MDA is justified by the remarks of an interviewee.

> *In this community, the chief himself participates in the clean-up exercise, so nobody dares absenting himself or herself. If you absent yourself from communal activities, the traditional council will fine you. The religious groups in this community also organise their members to participate in the clean-up exercise.* (Personal interview with a 48 year old assemblyman in Mpohor, on the 30/12/2017).

Table 4. 9. Level of Community Participation in the NSD Exercise in AMA and MDA (% in brackets).

Classification	High	Fair	Low	Total
AMA	27 (17.2)	24 (14.1)	119 (70.0)	170 (100)
MDA	2 (6.4)	15 (50.0)	13 (43.3)	30 (100)
Total in districts	29 (14.5)	39 (19.5)	132 (66.0)	200 (100)

Source: Field Data, 2017.

The study observed areal differentials in AMA regarding level of respondents' participation in the NSD exercise. In terms of high participation (see Table 4.10), Nima recorded 21.1% while Kaneshie recorded 11.5%. In terms of low participation, Nima recorded 62.1% while Kaneshie recorded 75.4%. Nima recorded the highest participation level in AMA because there were many youth groups in the community who participated. During an FGD in Nima, an interviewee indicated that,

> *There are many youth groups in this community which we popularly refer as bases. Each base used to organise clean-up exercises even before government launched the NSD exercise. We provide our own tools and oversee the collection and proper disposal of waste during the NSD exercise* (Remarks by a 35 year old man during a FGD in Nima on the 13/01/2017).

Airport Residential Area recorded the lowest level of participation in AMA. The residents in this study locality showed an indifferent attitude towards the monthly clean-up exercise because their surroundings were already clean. This statement is justified in the comment of an interviewee in Airport residential area.

Everyone in this community has the financial capacity to hire people to clean their surroundings. Moreover, this place accommodates high profile people, so we are able to maintain some level of sanity. The NSD exercise is a good initiative but it should be observed in areas like Nima, Chorkor and other market centres. As you can see, this area is already neat and the residents are highly responsible so there is no need to engage in the monthly clean-up exercise. (Personal interview with Mr. Mathew Addai, a 57 year old private consultant, on the 17/12/2016).

Plate 4.2 also confirms the statement made by the interviewee. A careful view of the photo shows that Airport residential is a well-planned and tidy neighbourhood.

Table 4.10. Level of Community Participation in the NSD Exercise in AMA (% in brackets).

Classification	High	Fair	Low	Total
Airport residential	0 (0.0)	0 (0.0)	14 (100)	14 (100)
Kaneshie	7 (11.5)	8 (13.1)	46 (75.4)	61 (100)
Nima	20 (21.1)	16 (16.8)	59 (62.1)	95 (100)
Total in AMA	27 (15.9)	24 (14.1)	119 (70.0)	170 (100)

Source: Field Data, 2017.

Plate 4.2. A street view of Airport Residential Area.

Source: Field Data, 17/12/2016.

The Chi-square goodness of field test (see Table 4.11) was performed to determine whether there was a statistically significant relationship between respondents' residential location and participation in the NSD exercise. For a statistically significant relationship, the P-Value should not exceed 0.05. When P-Value exceeds 0.05, then the relationship is not significant. After computation, result shows a P-Value of 0.000, which signifies a statistically significant relationship between residential location and participation in the NSD exercise. The study therefore accepts the alternate hypothesis and rejects the null hypothesis. The result means that, respondents' participation in the NSD exercise depends on their place of residence. Thus, respondents in MDA are more likely to participate in the NSD exercise than respondents in AMA. In narrowing it to AMA, it could also be stated that respondents who are likely to participate in the NSD exercise are those who reside in Nima. This result is captured in the conceptual framework under the environmental aspect of waste management. It is also reflected in the theoretical framework as a subjective norm (influence of the society on an individual's action).

Table 4. 11. Chi-Square Test on Residential Location and Participation in the NSD Exercise.

	Value	df	Significance (2-sided)
Pearson Chi-Square	54.748	3	0.000
Likelihood Ratio	49.738	3	0.000
Linear-by-Linear Asymmetric	20.781	1	0.000
N of Valid Cases	200		

Source: Field Data, 2017.

The researcher was also interested in examining the level of community participation based on gender. Table 4.12 presents result in MDA. From the data, 6.7% of the total respondents in MDA recorded high level of participation while 43.3% recorded low participation. In terms of fair participation, males recorded 57.1% while females recorded 43.8%. Females recorded 12.5% for high participation while males recorded 0%. The result confirms earlier findings that women are caretakers of the home and are more associated with environmental sanitation issues (Songsore, 2002).

Table 4. 12. Level of Community Participation from a Gender Perspective in MDA (% in brackets).

Classification	High	Fair	Low	Total
Males	0 (0.0)	8 (57.1)	6 (42.9)	14 (100)
Females	2 (12.5)	7 (43.8)	7 (43.8)	16 (100)
Total in MDA	2 (6.7)	15 (50.0)	13 (43.3)	30 (100)

Source: Field Data, 2017.

Table 4.13 presents result in AMA. From the data, 15.9% of the total respondents recorded high participation while 70% of the total respondents recorded low participation. Respondents in the metropolis who participated fairly recorded 14.1%. Males in AMA recorded 20% while females recorded 12.6% in high participation. As for low participation, males and females recorded 65.3% and 73.7% respectively. It could be inferred from the data that male participation was higher than female participation in AMA. The result is confirmed in the remarks of a community activist in Nima.

> *The youth groups in Nima are dominated by the males in the community. On Sundays we organise football matches as part of measures to keep our body fit. Whenever there is a clean-up exercise, all the boys in the community show up to participate.* (Personal interview with Abu, a 28 year old community activist in Nima, on the 19/12/2016).

Table 4. 13. Level of Community Participation from a Gender Perspective in AMA (% in brackets).

Classification	High	Fair	Low	Total
Males	15 (20.0)	11 (14.7)	49 (65.3)	75 (100)
Females	12 (12.8)	13 (13.7)	70 (73.7)	95 (100)
Total in AMA	27 (15.9)	24 (14.1)	119 (70.0)	170 (100)

Source: Field Data, 2017.

Results on the socio-demographic characteristics of respondents showed a youthful population in the two research areas. With this in mind, the researcher sought to analyse respondents' level of participation based on their age. Results in AMA are presented in Table 4.14. From the data, respondents in the age class of 31 to 40 recorded 19.7% for high

participation. This was followed by respondents in the age class of 21 to 30 and they recorded 16.7%. Respondents who were 20 years and below performed poorly, because as many as 81.8% recorded low participation. It could be inferred from the data that residents below 20 years performed poorly in the NSD exercise. This implies that the NSD exercise was observed among the mature youth in AMA without involving the adolescents.

Table 4. 14. Level of Community Participation based on Respondents' Age in AMA (% in brackets).

Classification	High	Fair	Low	Total
20 and below	0 (0.0)	2 (18.2)	9 (81.8)	11 (100)
21- 30	10 (16.7)	10 (16.7)	40 (66.7)	60 (100)
31- 40	12 (19.7)	7 (11.5)	42 (68.9)	61 (100)
41- 50	3 (14.3)	2 (9.5)	16 (76.2)	21 (100)
50 and above	2 (11.8)	3 (17.6)	12 (70.6)	17 (100)
Total in AMA	27 (15.9)	24 (14.1)	119 (70.0)	170 (100)

Source: Field Data, 2017.

Table 4.15 shows data obtained in MDA on the level of participation against respondents' age. Unlike AMA, respondents who were 20 years and below recorded 50% for high participation. This was followed by respondents in the age class of 41 to 50 and they recorded 50%. It could be inferred from the result in MDA that most of the adolescents participate in the monthly clean-up exercise, more so than grown-ups in the community.

Table 4. 15. Level of Community Participation based on Respondents' Age in MDA (% in brackets).

Classification	High	Fair	Low	Total
20 and below	1 (50.0)	1 (50.0)	0 (0.0)	2 (100)
21- 30	0 (0.0)	4 (33.3)	8 (66.7)	12 (100)
31- 40	0 (0.0)	8 (80.0)	2 (20.0)	10 (100)
41- 50	1(20.0)	1 (20.0)	3 (60.0)	5 (100)
50 and above	0 (0.0)	1(100)	0 (0.0)	1 (100)
Total in MDA	2 (6.7)	15 (50.0)	13 (43.3)	30 (100)

Source: Field Data, 2017.

Data were obtained to examine the level of participation according to respondents' employment sector. Result in MDA (see Table 4.16) identified only three employment sectors. This is justified by the fact that MDA is an agrarian community, with less secondary and tertiary activities (GSS, 2010b). Out of the total respondents in MDA, 43.3% recorded low participation, while 6.7% recorded high participation. From the data, pensioners recorded 33.3% for high participation. This was followed by private formal workers and they recorded 5.0%. Unlike AMA, where pensioners participated poorly in the exercise, pensioners in MDA were actively involved. Perhaps the fear of getting sanctioned by the chief compels everyone in the community to participate in the exercise.

Table 4. 16. Level of Community Participation based on Employment in MDA (% in brackets).

Classification	High	Fair	Low	Total
Public formal	0 (0.0)	2 (28.6)	5 (71.4)	7 (100)
Private informal	1 (5.0)	11 (55.0)	8 (40.0)	20 (100)
Pensioner	1 (33.3)	2 (66.7)	0 (0.0)	3 (100)
Total in MDA	2 (6.7)	15 (50.0)	13 (43.3)	30 (100)

Source: Field Data, 2017.

Results on respondents' level of participation based on employment sector are presented in Table 4.17. Out of the total respondents in AMA, 70% recorded low participation while 15.9% recorded high participation. From the data, private informal workers recorded 18.7% in high participation while public workers recorded 11.1%. In terms of low participation, public workers recorded 66.7% while private informal workers recorded 67.9%. Respondents who were employed in the private formal sector recorded 84.6% for low participation. The reason is that most of the private formal respondents reside in the Airport residential area, where participation in the NSD exercise was recorded as the lowest in AMA (see Table 4.10). This high-income community contains residents who have the wherewithal to hire cleaners and also to subscribe to the HH waste collection service. Even in instances where the service providers are unable to offer their services, the high income residents can use their political influence to get things done for them. It is therefore not surprising that the private formal sector workers recorded the lowest participation level in AMA.

Table 4. 17. Level of Community Participation based on Employment in AMA (% in brackets).

Variable	High	Fair	Low	Total
Public formal	1 (11.1)	2 (22.2)	6 (66.7)	9 (100)
Private formal	1 (7.7)	1 (7.7)	11 (84.6)	13 (100)
Private informal	25 (18.7)	18 (13.4)	91 (67.9)	134 (100)
Unemployed	0 (0.0)	3 (25.0)	9 (75.0)	12 (100)
Pensioner	0 (0.0)	0 (0.0)	2 (100)	2 (100)
Total in AMA	27 (15.9)	24 (14.1)	119 (70.0)	170 (100)

Source: Field Data, 2017.

4.4.2. Motive behind Community Participation in the NSD Exercise

Having examined the level of community participation and results from the Chi-square, it was expedient to also find the motive behind respondents' participation in the monthly clean-up exercise. According to the theoretical framework, people are likely to repeat an action when they have a stronger urge or feel good after performing the activity (Ajzen, 1991). With this idea in mind, the researcher asked respondents about their motive for participating in the NSD exercise.

The motive behind respondents' participation is presented in Table 4.18. From the data, 83% of the total respondents in AMA and MDA participated because they knew the importance of maintaining a clean environment. Those who were motivated by their peers recorded 5.5% in AMA and MDA. In AMA, respondents who participated in the NSD exercise because they felt it was a moral obligation recorded 85.3%. Respondents who were influenced by their peers to participate in the NSD exercise recorded 5.3%. Respondents who

participated because the exercise was a community norm recorded 9.4%. The result in AMA shows that the majority of respondents participated in the NSD exercise because they knew it was morally right. Similar observations were made in MDA, where 70% was recorded for moral obligation. This was followed by community norm which recorded 23.3% while peer influence recorded 6.7%.

This section ends discussions on research objective two. The next section discusses research objective three of the study which focuses on examining the factors that motivated or militated against the nationwide clean-up exercise.

Table 4. 18. Motive behind Community Participation in AMA and MDA (% in brackets).

Classification	Moral obligation	Peer influence	Community norm	Total
AMA	145 (85.3)	9 (5.3)	16 (9.4)	170 (100)
MDA	21 (70.0)	2 (6.7)	7 (23.3)	30 (100)
Total in districts	166 (83.0)	11 (5.5)	23 (11.5)	200 (100)

Source: Field Data, 2017.

4.5. Factors that Motivated or Militated Against the NSD Exercise

The problem statement informed the study that community participation was satisfactory in the early stages of implementation but with time participation started waning. The purpose of this section is to examine the factors that motivated or militated against community participation in the NSD exercise. This section answers question three of the study. Results were explained using both theoretical and conceptual frameworks.

4.5.1. Absence of Remedial Action

The introductory section of this study established that the NSD exercise was a directive from government for citizens to clean their environment on the first Saturday of

every month. Suffice to add that in the NESP, community members who fail to participate in any community clean-up exercise are expected to be sanctioned by the local authority (MLGRD, 2010a). The NSD exercise was therefore not an exception. Prior to the study, 22 traders in Madina were arrested and fined for failing to participate in the NSD exercise (Ghana News Agency, 2015). This informed the researcher to ask respondents whether they have been sanctioned for failing to participate in the monthly clean-up exercise.

Table 4.19 presents results in the two research areas. From the data, 98% of the total respondents were never sanctioned for failing to participate in the NSD exercise. Only 2% of the total respondents were sanctioned for failing to participate in the exercise. In AMA, no respondent was sanctioned for failing to participate in the NSD exercise. This may explain why community participation in AMA was lower than in MDA. Unlike AMA, 13.3% of respondents in MDA were sanctioned for failing to participate in the NSD exercise. This result is confirmed in the comment of an interviewee.

> *In this community if you fail to participate in any clean-up exercise you are fined 2 bags of cement. You either pay in cash or you buy the two bags of cement* (Personal interview with madam Alberta, a 52 year old petty trader in Mpohor, on the 30/12/2016).

The interviewee's statement indicates that community clean-up exercise was already in existence and residents were aware of the implications of boycotting any community clean-up exercise in MDA. This regulatory mechanism accounted for and influenced community participation in the NSD exercise in MDA.

Table 4. 19. Respondents who were Sanctioned in AMA and MDA (% in brackets).

Classification	Yes	No	Total
AMA	0 (0.0)	170 (100)	170 (100)
MDA	4 (13.3)	26 (86.7)	30 (100)
Total in districts	4 (2.0)	196 (98.0)	200 (100)

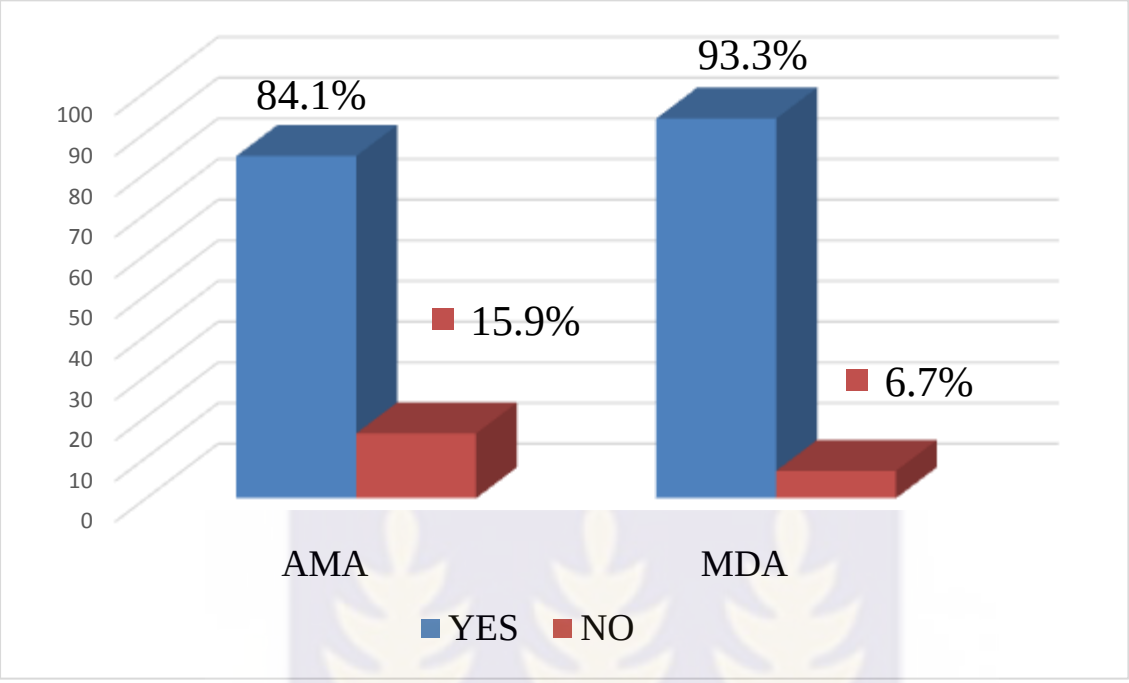
Source: Field Data, 2017.

4.5.2. Absence of Legal Instrument to back the NSD Exercise

As a follow up to the absence of any remedial action, respondents indicated that the NSD exercise was not backed by any legal instrument, so it relied on the voluntary decision of community members. This is captured in the conceptual framework as the legal aspect of waste management. The researcher then asked respondents whether the absence of a legal instrument to make the NSD exercise compulsory contributed to the eventual failure of the initiative. Result in Figure 4.1 shows that 84.1% of respondents in AMA confirmed that the absence of any legal instrument to back the NSD exercise contributed to the failure of the initiative. The remaining 15.9% did not agree that absence of legal instrument contributed to the failure of the monthly clean-up exercise.

Similar observations were made in MDA, where 93.3% agreed that the absence of any legal instrument to back the NSD exercise caused the initiative to fail. Only 6.7% of respondents disagreed that the absence of any legal instrument to back the NSD exercise contributed to its failure. Results in the two research areas corroborate an earlier statement made by Dr. Poku Adusei, a lecturer in the School of Law at the University of Ghana. He stated that until government passes a law to make the NSD exercise compulsory, citizens will develop an indifferent attitude towards it (Ansah, 2015).

Figure 4. 1. Absence of Legal Instrument backing the NSD Exercise in AMA and MDA



Source: Field Data, 2017.

In the previous section, the majority of respondents confirmed that the absence of any legal instrument to back the exercise contributed to its failure. The researcher sought to find the number of males and females who agreed with this notion. Suffice to add that the absence of any legal instrument to back the NSD exercise is captured as the legal aspect of waste management in the conceptual framework. Table 4.20 presents results in AMA. From the data, 84.1% of total respondents agreed that the absence of any legal instrument to back the NSD exercise contributed to its failure. The remaining 15.9% of total respondents did not attribute the failure of the NSD exercise to the absence of a legal instrument. Respondents who agreed that the NSD exercise failed because it lacked legal backing recorded 81.3% for males while females recorded 86.3%. However, 18.7% of males and 13.7% of females were of the opinion that the absence of any legal instrument to back the NSD was not the cause of failure.

Table 4. 20. Absence of Legal Instrument from a Gender Perspective in AMA (% in brackets).

Classification	Yes	No	Total
Males	61 (81.3)	14 (18.7)	75 (100)
Females	82 (86.3)	13 (13.7)	95 (100)
Total in AMA	143 (84.1)	27 (15.9)	170 (100)

Source: Field Data, 2017.

At MDA (see Table 4.21), 93.3% of total respondents agreed that the absence of a legal instrument to back the NSD exercise contributed to its failure. The remaining 6.7% of the total respondents disagreed that that absence of a legal instrument contributed to the failure of the initiative. In terms of respondents who agreed that the NSD exercise failed because it lacked legal backing, males recorded 92.9% while females recorded 93.8%. However, 7.1% of males and 6.3% of females were of the opinion that the absence of a legal instrument to back the NSD exercise was not the cause of failure. It could be inferred from the two research areas that the majority of respondents who agreed the NSD exercise failed because it lacked legal backing were females.

Table 4. 21.Absence of Legal Instrument from a Gender Perspective in MDA (% in brackets).

Classification	Yes	No	Total
Males	13 (92.9)	1 (7.1)	14 (100)
Females	15 (93.8)	1 (6.3)	16 (100)
Total in MDA	28 (93.3)	2 (6.7)	30 (100)

Source: Field Data, 2017.

4.5.3. Inadequate Provision of Tools from Local Authorities

Another issue respondents raised during the household survey was the failure of local authority to provide adequate tools during the NSD exercise. As part of encouraging community support, all MMDAs were expected to provide tools for the monthly clean-up exercise. Table 4.22 presents results in the two research areas. From the data, 56.5% of total respondents confirmed that they received no tools from the assembly during the clean-up exercise. The remaining 43.5% indicated that they received tools from the assembly during the NSD exercise.

In AMA, 62.4% of respondents confirmed that no tools were provided by the assembly. The remaining 37.6% indicated that local authorities provided tools during the monthly clean-up exercise. The reason for this outcome is that AMA covers a large area and the assembly cannot provide every community with tools. This was confirmed in the remarks of an expert interviewee below.

> *During the NSD exercise, we provide all the necessary human and material resources to ensure a successful clean-up activity. We also involve the private service providers like Zoomlion to support us in the waste collection, transportation and disposal. However, we cannot distribute tools to each individual in the community. We were expecting the various communities to also pull their strength, but it seems they are also looking up to the government to provide everything* (Personal interview AMA/WMD officer at Kaneshie, on the 26/01/2017).

An interview with the assemblyman of Kaneshie confirms result in the household survey. He stated that,

> *My electoral area is too big, so I appealed to the assembly to provide me with tricycles to enable me dispose some of the refuse generated during the exercise. Up till now they have not provided what I requested. The filth in Kaneshie needs more than a day or a month to clear* (Personal interview with the assemblyman of Kaneshie, on the 26/01/ 2017).

Alternatively, 76.7% of respondents in MDA confirmed that they received tools from the assembly during the NSD exercise. Respondents who indicated that local authorities do not provide any tools recorded 23.3%. The outcome in MDA can be explained by the district being relatively small compared to AMA. Therefore, any technical support provided by the assembly was able to complement the effort of community members.

Table 4. 22. Provision of Tools from Local Authorities in AMA and MDA (% in brackets).

Classification	Yes	No	Total
AMA	64 (37.6)	106 (62.4)	170 (100)
MDA	23 (76.7)	7 (23.3)	30 (100)
Total in districts	87 (43.5)	113 (56.5)	200 (100)

Source: Field Data, 2017.

The previous section confirmed that local authorities do not provide adequate tools for the exercise. The researcher probed further to examine how inadequate provision of tools affects respondents' participation in terms of their gender. Result in AMA is presented in Table 4.23. Results obtained show that as many as 95.3% of the total respondents agreed that inadequate provision of tools affected their participation. Only 4.7% of the total respondents

said inadequate provision of tools does not affect their participation in the NSD exercise. In terms of respondents who were affected, males recorded 92% while females recorded 97.9%. Results in AMA show that inadequate provision of tools affected females more than males.

Table 4. 23. Effect of Inadequate Tools from a Gender Perspective in AMA (% in brackets).

Classification	Affect	Does not affect	Total
Males	69 (92.0)	6 (8.0)	75 (100)
Females	93 (97.9)	2 (2.1)	95 (100)
Total in AMA	162 (95.3)	8 (4.7)	170 (100)

Source: Field Data, 2017.

Similar observations were made in MDA (see Table 4.24) where 96.7% of the total respondents confirmed that inadequate provision of tools affect their participation in the exercise. The remaining 3.3% of the total respondents are not affected if local authorities do not provide adequate tools. Unlike AMA, males in MDA were more affected when local authorities do not provide adequate tools for the exercise. This was confirmed during an interview session with the assembly man of MDA.

> *Government wants us to clean our environment, but we are not provided with any materials. We are ready to participate as a community but there are no tools to complement our effort. There was a time I personally bought a shovel to assist in the clean-up exercise. After the exercise, the shovel was nowhere to be found. The youth in the community sometimes take advantage of this situation and absent themselves from the exercise* (Personal interview with the assemblyman of Mpohor, on the 30/12/2016).

Table 4. 24. Effect of Inadequate Tools from a Gender Perspective in MDA (% in brackets).

Classification	Affect	Does not affect	Total
Males	14 (100)	0 (0.0)	14 (100)
Females	15 (93.8)	1 (6.3)	16 (100)
Total in MDA	29 (96.7)	1 (3.3)	30 (100)

Source: Field Data, 2017.

4.5.4. Failure of Service Providers to collect refuse after the exercise

Regarding the implementation of the NSD exercise, it was expected that service providers would collect, transport and dispose all the waste generated (MLGRD, 2010a). Suffice to add that service providers collected waste without charging a fee during the NSD exercise. This intervention was introduced by the local authorities to encourage community participation in the monthly clean-up exercise. The researcher sought to find whether failure of service providers to collect waste after the NSD exercise affected respondents' participation in the monthly clean-up exercise. Table 4.25 presents results from the two research areas. From the data, as many as 97.5% of the total respondents confirmed that failure of service providers to collect waste after the exercise has affected their participation in the NSD exercise. Only 2.5% of the total respondents were of the opinion that failure of service providers to collect refuse after the exercise did not affect their participation in the NSD exercise.

In AMA, as many as 97.6% said that failure of service providers to collect waste affected their participation in the NSD exercise. Respondents who were not affected recorded 2.4%. Similar observations were made in MDA where 96.7% of respondents were affected when service providers failed to collect refuse after the exercise. Results from the two

research areas confirm the not-in-my-backyard (NIMBY) attitude of citizens (Tsiboe & Marbel, 2004; Owusu et al., 2012).

Table 4. 25. Effect of Waste Collection on Participation in AMA and MDA (% in brackets).

Classification	Affect	Does not affect	Total
AMA	166 (97.6)	4 (2.4)	170 (100)
MDA	29 (96.7)	1 (3.3)	30 (100)
Total in districts	195 (97.5)	5 (2.5)	200 (100)

Source: Field Data, 2017.

Results in AMA are supported by comments from community members. During a FGD in AMA, one lady in Kaneshie made a comment on the issue of refuse collection during the NSD exercise.

> *The major challenge of the NSD exercise is failure of the assembly to collect the refuse after the exercise. The assembly comes around and announces that we should gather the refuse and they will take care of its collection. But after the NSD exercise they do not come to collect them and the refuse flows back into the gutter. Sometimes we have to hire the services of kaya bola to dispose the refuse for a fee. In fact, I am yet to see the effort of government in this exercise* (Response from a 37 year old hairdresser during a FGD in Kaneshie, on the 18/02/2017).

The assemblyman of Kaneshie also made a comment which is worth commenting.

> *As for the cleaning we do it but our biggest problem is collection of the refuse. Enforcement of by-laws is very poor in this community. Unit committee members are supposed to form the environmental sanitation committee; however, they were not even involved in planning the NSD exercise. The conventional top-down decision-*

making approach is not helping at all (Personal interview with assemblyman of Kaneshie, on the 26/01/2017).

At Nima one community activist stated that, the NSD exercise failed because of inadequate landfill sites in Accra. His statement is captured below.

Formerly city authorities used to rely on abandoned quarry sites for waste disposal, but now everyone is smart and does not want his backyard to be used as a refuse dump because the stench alone can cause severe illness. Government must construct more landfill sites so that it can consume the high volume of waste generated during the monthly clean-up exercise (Personal interview with a 51 year old motor repairer in Nima on the 18/12/2016).

Remarks from a private service provider revealed that community members were to be blamed for delay in waste collection during the NSD exercise (see Box 4.4). In addition, the AMA/WMD officer (see Box 4.5) disclosed that the majority of their trucks have broken down and it affects the quality of service delivery during the NSD exercise negatively. Plate 4.3 is a photo of a faulty waste management truck. He further revealed that some community members take advantage of the free waste collection service provided by the service providers and store their waste for a month. It must be noted that, the issues raised by the waste experts fall under the technical aspect of waste management (see Figure 2.3).

Box 4.4. Remarks by Zoomlion officer on why they delay in collecting refuse

After desilting the gutters, we leave it for a while so that the liquid content will drain out of it. We cannot collect them right after desilting because the weight of the load is still intact. The weight becomes less heavy when left to dry and thus eases collection and transportation. However, we have realised that some people take advantage of the situation and add their waste to the existing refuse which quickly heap up and drains back into the gutters during rainfall (Personal interview: 19/01/2017).

Box 4.5. Remarks by AMA/WMD officer on waste collection during the NSD exercise

Since waste collection was free during the NSD exercise, some residents took advantage of the opportunity and stored their waste for a month. With time, we realised that the volume of waste generation during the monthly clean-up exercise was beyond our resource capacity. One needs to bear in mind that service providers already face technical and financial challenges. Currently, some of our trucks have broken down and it affects our service delivery (Personal interview: 26/01/2017).

Plate 4.3. A faulty Waste Truck awaiting Repairs at the AMA/WMD in Kaneshie.

Source: Field Data, 2017.

4.5.5. Attitude of Community Members

In Box 4.5 the AMA/WMD officer confirmed that some residents were storing their waste to take advantage of free waste collection during the NSD exercise. Suffice to add that, the practice of storing waste to take advantage of the free collection system during the NSD day was only practised in AMA. The attitude of respondents is captured as the social aspect

of waste management in the conceptual framework. The poor attitudes of some respondents were also confirmed in an interview with a private service provider (see Box 4.6).

A respondent who was working in Nima but residing in Teshie shared an interesting insight. Even though Teshie was not part of the selected study localities in Accra, the attitude exhibited by the residents was worth commenting on

On the first Friday of every month, a day before the NSD exercise, shop owners in Teshie hire some boys in the community to clean the surroundings of their shop. So on the actual day for observing the clean-up exercise, it is common to find these shop owners operating their business. If the local authorities confront them as to why they are not participating, they reply that their surroundings are already clean (Personal interview with 26 year old Akosua, a mobile money vendor in Nima on the18/12/2016).

It could be deduced from the interviewee's statement that this negative attitude is likely to be replicated in other residential areas in Accra and other parts of the country. This sense of apathy demonstrated by some residents has threatened the survival of the NSD exercise.

4.6. Remarks by Zoomlion officer in Accra on assessing community response in the NSD exercise

We provide human and material resources to augment the effort of the assembly. It is unfortunate that people have not bought into the good intentions of the exercise. Even in communities where we undertake the monthly clean-up exercise, residents stand there unconcerned; meanwhile the exercise is able to mitigate flood in such communities. Personally, I think the objective of the exercise was achieved in the short term, but could not be achieved in the long term because people started losing interest in it. I think the local authorities should revisit past strategies where traditional rulers were empowered to organise successful community clean-up exercises (Personal interview: 19/01/2017).

It could be deduced from the experts' accounts that community members exhibited a sense of apathy towards the exercise, and this means that the initiative lacked local ownership

and acceptability (Oteng-Ababio, 2007). This statement is supported by the remarks of the Chief of Mpohor (see Box 4.7). It could be inferred from the Chief's statement that the planning of the NSD exercise was taken at the national level without involving the traditional authorities to identify possible challenges and potentials before implementing the initiative. It can be also be deduced that, traditional stakeholders were completely side-lined in planning the NSD exercise. His view on the NESP is similar to the PAYD principle which was unilaterally decided by local authorities without the consent of service beneficiaries (Oteng-Ababio, 2010c). Just as the PAYD failed because community members were not consulted in fixing the fee rate, the NSD exercise followed a similar pathway because it lacked local ownership and acceptability. This resonates with earlier findings by Tukahirwa et al., (2010) that partnership in policy implementation is not feasible if the policy design is left in the hands of state actors without involving community members.

4.7. Response by Mpohor chief on the planning team in the NSD exercise.

At the National House of Chiefs, we suggested that execution of the exercise should be collaboration between traditional leaders and district assemblies. We were only invited to Kumasi and briefed on the initiative because government had already taken the decision. No copy of the policy was made available for the traditional authorities. No follow up was done by the assemblies to address the challenges facing communities in the exercise. In fact, the initiative was dead on arrival because we threw away a more effective governance system and adopted an alien governance system that did not suit our social political life as Africans. If government is really serious about environmental sanitation, traditional authorities would be key actors in the process (Personal interview: 30/12/2017).

4.5.6. Inadequate Provision of Incentives

Another reason why respondents developed an indifferent attitude towards the NSD exercise was inadequate provision of incentives to stimulate community interest. This is

captured in the study's conceptual framework as the financial aspect of waste management. The researcher asked respondents whether the assembly's inability to provide incentives during the exercise affected their participation in the NSD exercise. Table 4.26 present results from the two research areas. From the data, 67.5% of the total respondents confirmed that inadequate provision of incentives made them less motivated to participate in the monthly clean-up exercise. The remaining 32.5% of respondents were not affected if no incentives were provided to stimulate community interest in the exercise. In AMA, 74.7% of respondents were less interested to participate when no incentives were provided. The remaining 25.3% confirmed that, their participation in the exercise did not depend on incentives. The result from AMA is supported by the remarks of the assemblyman in Kaneshie (see Box 4.8). He bemoaned that, low incentives to support the exercise was making it difficult to involve the youth.

Alternatively, 73.3% of respondents in MDA were not affected when no incentives were provided. However, 26.7% said their participation in the NSD was affected because no incentives were provided. Results from the two study areas can be explained using Redfield's (1930) folk-urban continuum theory. He argues that rural folks participate in civic activities out of duty without expecting any remuneration. However, the rational lifestyle of urbanites compels them to ask for remuneration for any work done. This is further explained using the study's conceptual framework. The framework states that community interest supersedes individual interest in rural communities, therefore it is easier to organise collective activities (Simmel, 2012; Greenfield, 2013; Chen, 2015). However, in urban societies, individual interest precedes collective interest making it difficult to organise communal activities. Even though the majority of respondents in MDA were not affected by inadequate incentives, the remarks of the assemblyman are worth commenting. He disclosed that,

The assembly prepares a budget for the exercise but we do not see anything. I am not involved in the budget preparation, so I find it difficult to refresh the youth after the NSD exercise (Personal interview with assemblyman of Mpohor on the 30/12/2016).

An interview with the Environmental Health Department (EHD) officer of AMA revealed that public officials also lost interest in the NSD exercise because of inadequate incentives (see Box 4.9).

Table 4. 26. Effect of Incentives on Community Participation in AMA and MDA (% in brackets).

Classification	Affect	Does not affect	Total
AMA	127 (74.7)	43 (25.3)	170 (100)
MDA	8 (26.7)	22 (73.3)	30 (100)
Total in districts	135 (67.5)	65 (32.5)	200 (100)

Source: Field Data, 2017.

Box 4.8. Remarks by Kaneshie assemblyman on how he refresh the youth after the exercise.

The assembly gives every assembly member GH ₵100 to refresh community members after the NSD exercise. This money is not enough, and I always end up adding my own money. If you do not buy food and water for the boys they will not show up for the next clean-up exercise (Personal interview; 26/01/2017).

Box 4.9. Remarks by AMA/EHD officer on challenges his outfits face in the NSD exercise.

Our staff members are not given transport fares when they participate in the exercise. I participated some time ago and up till now I haven't received my transportation fare. My staff members at the sub metro level are not involved in the planning of an impending exercise. The WMD is in charge of everything concerning the clean-up exercise. Due to the way my outfit is treated, we are no more interested in participating in the exercise (Personal interview; 27/01/2017).

4.5.7. Political Affiliation of Respondents

During the study, a keen observation of the body language and comments of some respondents who were not actively engaged in the NSD exercise showed that their political affiliation was different from that of the assembly member. Suffice to mention that the NSD exercise was launched by the NDC government so some respondents in the study areas perceived the NSD exercise as a political initiative (see Table 4.6). It was realised during the field study that the political background of the assembly member who organises the NSD exercise in the community influences a residents' participation. Other community members also participated because they belonged to the same political party as the assembly member. An interviewee in Nima disclosed that,

> *When your party is in power, you are motivated to participate in any initiative it rolls out because it will enable the party to score more political points. Personally, I participated in the NSD exercise because I wanted the NDC government to excel in the upcoming elections* (Personal interview with a 30 year community activist in Nima, on the 12/02/2017).

In an interview with a private service provider on whether the national sanitation exercise can be sustained, he replied by saying,

As at now, the fate of the exercise is in limbo because there is a political twist and influence regarding its sustainability. Prior to the 2016 general elections, the NDC government mentioned the NSD exercise as one if its flagship achievement during the campaign season. With the new government in place, we are yet to see whether it will continue from where the previous government ended (Personal interview with Zoomlion officer on the 19/01/2017 at Ashaley-Botwe, Accra).

Perhaps the statement by the Metropolitan Chief Executive (MCE) officer in Kumasi is an indication that the NPP government has completely abandoned the NSD exercise. When the MCE was interviewed about how his administration would improve environmental sanitation, he proposed many measures which were on the drawing board but did not make mention of engaging community members in a monthly clean-up exercise (Daily Graphic, May, 2017: 26). It could be deduced that the NPP government is not considering reviving the NSD exercise.

The preceding section discussed the factors that contributed to the failure of the NSD exercise. It must be noted that the monthly clean-up exercise was geared towards maintaining effective environmental sanitation. The next section will look at an intervention respondents suggested to instil good attitudes towards environmental sanitation.

4.5.8. Restoring Professionalism and Discipline in Environmental Sanitation

It was established in the literature that environmental health officers popularly known as '*Tankas*', used to make unannounced visits to homes and other public places (Crook & Ayee, 2006). Their commitment to ensuring that citizens maintain a clean and hygienic environment cannot be underestimated. This was against the background that city authorities started as public health boards to oversee environmental cleanliness in all its jurisdictions (MLGRD, 2010b). Over the years, their commitments to ensuring hygienic conditions in households has waned considerably (Crook & Ayee). Respondents were asked to share their

view on bringing more environmental health officers into the system. Figure 4.2 presents respondents' view on whether government should employ more environmental health officers to restore discipline in their community. In AMA, 97.6 % supported the idea of employing more environmental health officers. The remaining 2.4 % were not in support of government employing more environmental health officers. Similar observations were made in MDA where 100% of the total respondents wanted more environmental health officers to ensure hygienic conditions in their community.

The remarks by a public official at the MLGRD confirmed respondents' position for government to employ more environmental health officers. His statement is captured in Box 4.10. It could be inferred from his comments that the retrenchment of public health workers (Asiedu & Agyei-Mensah, 2008) in the environmental health unit was the genesis of poor environmental sanitation conditions in Ghana. Even though the majority of respondents from the two research areas agreed that more environmental health officers should be employed, they added that government should provide them with incentives. This is confirmed in a FGD in MDA. One of the interviewee remarked that,

> *We will be happy if the environmental health officers start their periodic visits to households because some people do not pay any attention to maintaining a clean environment. Offenders should be sanctioned by the officers like how it used to be done in the olden days. However, the biggest challenge is that the officers are not given enough incentive so they collect bribes just like the police* (Comments by Egya Atta, a 39 year old farmer in Mpohor during a FGD on the 30/12/2016).

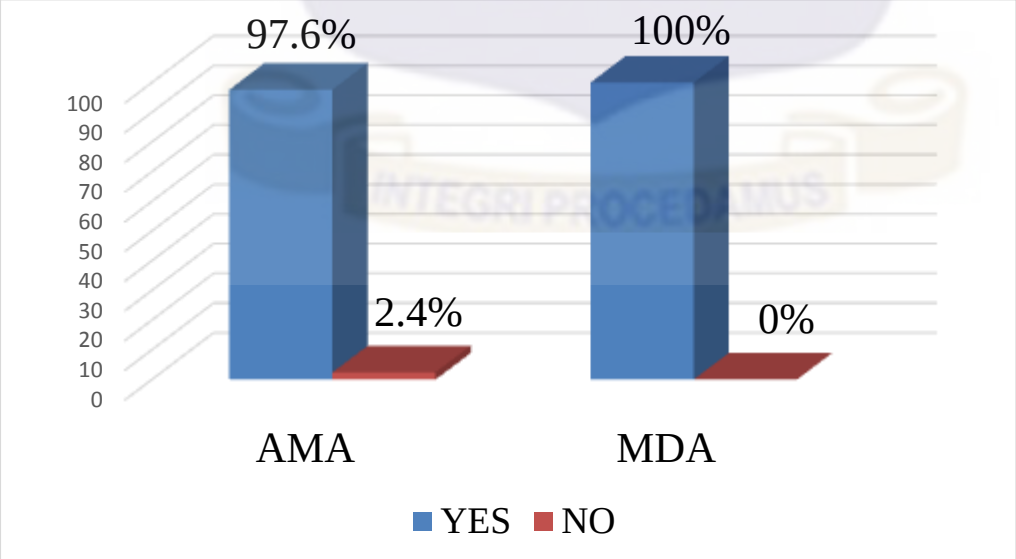
In addition to this statement, an interviewee in AMA said this about the environmental health officer,

Bringing back the environmental sanitation officers to instil discipline in the community is a laudable idea. Accra's population and space have increased rapidly and that means more environmental health officers must be employed. However, the health officers will fail in performing their duties because they often collect bribes from culprits (Personal interview Hannah, a 54 year old seamstress in Nima on the 28/01/2017).

An interviewee did not support the idea of employing environmental health officers and her reason is given below.

If they come to Nima, they will arrest a lot of people because environmental sanitation in this community is very poor. In this entire community there is only one public toilet, so people ease themselves in polythene bags and throw them anywhere they like (Personal interview with Alima, 24 year old seamstress in Nima close to the Kanda highway in Accra, on the 17th January, 2013).

Figure 4. 2. Respondents' view on employing Environmental Health Officers



Source: Field Data, 2017.

Box 4.10. Remarks by MLGRD official on environmental health officers

During the post-colonial period, waste workers were employed by the state to oversee public waste collection. We also had effective sanitary inspectors making unannounced visits to households to inspect their hygienic conditions. Government later informed the various districts to pay 50% of salaries of waste workers whilst it takes care of the other half. Government was able to honour its pledge, but the district assemblies could not pay their share of the salary. As rational human beings, the sanitary workers also worked for 4 hours out of the maximum 8-hour period. With time, government could no longer pay the 50% and this coincided with the structural adjustments and public-sector reform programmes. The reforms led to the retrenchment of many sanitary inspectors and public waste workers in the country. This left a big gap in government's capacity to manage solid waste especially in urban centres like Accra because this was the period when rural-urban migration was at its peak. Until these workers are brought back into the system, our waste management problem will continue to persist. (Personal interview: 19/01/2017).

4.6. Summary

This chapter discussed the socio-demographic characteristics of respondents in the two study areas. Data obtained from the field confirmed that AMA was heterogeneous because of its diverse ethnic composition, while MDA was homogenous because of its uniform ethnic composition. The first three research questions were also addressed in this chapter. In answering research question one, results showed that the majority of respondents in the two research areas were aware of the NSD exercise. In terms of source of information flow, respondents in AMA relied more on electronic media while MDA relied more on the community megaphone. Despite respondents' awareness about the NSD exercise, participation was relatively low. This means that providing information on the NSD exercise does guarantee active response, if enough material resources are made available to community members. It also came out that the majority of respondents perceived the NSD

exercise an example of communal activity. Thus, residents were already engaged in clean-up activities but the NSD exercise was an attempt by government to institutionalise the activity. In answering research question two, it came out that community participation was higher in MDA than in AMA. However, participation in AMA was marked with areal differentials. The presence of youth groups was the main reason why community participation was highest in Nima than in Kaneshie and Airport residential. The Chi-Square test performed also confirmed that there was a significant relationship between residential location and participation in the NSD exercise.

The factors that motivated or militated against community participation represented research question three. It came to the fore that the absence of remedial action to sanction defaulters, the absence of any legal instrument to back the NSD exercise, failure of service providers to collect waste after the exercise, inadequate provision of tools, the attitude of some community members and inadequate provision of incentives to stimulate community interest militated against community participation in AMA. In MDA, the main factor that militated against community participation was failure of service providers to collect waste after the exercise. However, since the chief sanctions residents who failed to participate, community members were compelled to participate in the exercise. This was the main factor that motivated community participation in MDA.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The primary objective of this study was to unpack the reasons behind the failure of the NSD exercise using Accra Metropolis and Mpohor District as study areas. The conceptual and theoretical frameworks were used to explain the results. The main objective of this concluding chapter is to present the findings in the objectives and proffer recommendations for policy consideration. Finally, the study proposes another area for future research.

5.2. Summary of Main Findings

Summary of the findings based on the study's objectives are presented below.

5.2.1. The NSD exercise was a knee-jerk decision

The study has demonstrated that, the NSD exercise was an impulsive decision by government to address environmental sanitation issues without considering the viability of the initiative at the community level. Thus, the directive followed the conventional top-down decision making approach which created no room for community contribution. Empirical data confirmed that, local actors were side-lined in planning the initiative. This was captured in the conceptual framework as the institutional aspect of waste management. Even at the local level, MMDCEs failed to involve traditional authorities to plan for the exercise. Since community members were side-lined in planning the exercise, it was difficult for local authorities to identify and prioritise the main environmental sanitation challenges facing the communities. Again, no follow-up was done by the local authorities to find the reason behind low community participation. Perhaps, if the local authorities had involved local stakeholders

in the initial stage, the imminent challenges would have been addressed before the initiative was implemented. It could be inferred that the NSD exercise followed the same approach as the PAYD principle. Both policy interventions were unilateral decisions taken by government without community consent. It is not surprising that both policy interventions recorded a short life span.

5.2.2. The use of celebrities/dignitaries to canvass for support lacked local involvement

To whip up public enthusiasm, government used celebrities and dignitaries to organise the NSD exercise. In so doing, the impression was created that the exercise was meant to be spearheaded by dignitaries, celebrities and politicians instead of local actors (traditional authorities, assembly members and community activists). Thus, community members became mere spectators in the exercise and always looking up to state officials and celebrities to participate in the exercise (Manteaw, 2017). This implied that community interest was only rekindled when they caught a glimpse of dignitaries and celebrities cleaning the streets. Once the dignitaries departed, community enthusiasm was virtually lost. The use of celebrities and dignitaries without involving the local actors also created the impression that the NSD exercise was a political affair. The incident in Aboabo, Kumasi, is a case in point.

5.2.3. MMDAs did not provide adequate logistics

During the NSD exercise, local authorities were entreated to create the enabling environment by providing each community with tools (wheelbarrows, shovels, rake and brooms). The study however found that local authorities were technically handicapped and did not have the resources to provide adequate tools for community members. Empirical data showed that majority of respondents in AMA and in MDA were less motivated to participate due to inadequate provision of tools. This supports the study's conceptual framework (technical aspect of waste management), that inadequate provision of tools is likely to cause

residents to lose interest in the exercise. In addition, the theoretical framework (perceived behavioural control) states that the ability for an individual to participate in the exercise is determined by available resources. During an interview session, the assemblyman for Kaneshie intimated that he requested for a tricycle to enable him dispose of the refuse after a clean-up exercise, but the local authority could not provide the tricycle. Since the assembly was already facing financial constraints, it was difficult to provide adequate logistics for community members to participate in the exercise.

5.2.4. MMDAs did not provide adequate incentives

In an attempt to encourage community participation, local authorities were giving financial assistance to assembly members and other public officials. It came out, however, that the amount of money distributed to assembly members was not enough to support the NSD exercise. In effect, the assembly members had to use their own money to add to what the local authorities provided. For instance, the assembly man of Kaneshie was given only GH ₵100 to refresh the youth in the community. In Mpohor, the assembly man indicated that he was aware the assembly prepares a budget for the exercise, but he received nothing. In his opinion, it was difficult to refresh the youth after the exercise and this contributed to low community turn-out in the exercise. The issue of incentives was also raised by public officials. The head of AMA/EHD indicated that the budget for the exercise was solely prepared by the AMA/WMD without involving his outfit. Moreover, he was not given his share of the allocation the last time he participated. This situation compelled him and his staff at the sub-metro level to boycott the exercise. This finding is explained in the study's theoretical framework as perceived behavioural control. This means that peoples' decision to participate in the NSD exercise is determined by available incentives.

5.2.5. Failure of service providers to collect waste after the NSD exercise

One of the tenets of the NSD exercise was that local authorities and private service providers were entreated to collect waste after the exercise. Empirical data showed that service providers (both public and private) performed poorly in fulfilling this task. During an interview with the AMA/WMD officer, he confirmed that most of their waste trucks were faulty and it affected the quality of service delivery. The service providers could not be blamed for this challenge alone because some residents intentionally added their refuse to the piled up waste and expected service providers to collect it. This challenge was captured among the technical aspect of waste management in the study's conceptual framework.

5.2.6. The NSD exercise lacked the legal instrument to make it compulsory

It can be recalled that the NSD exercise was a directive from government for citizens to clean their surroundings on the first Saturday of every month. Citizens were not under compulsion to participate because the exercise exemplified communal labour, which is basically a voluntary activity. Without a legal instrument to make the exercise compulsory, some residents developed an indifferent attitude towards it. Empirical data confirms that the NSD exercise failed in the long run because it lacked the legal backing to make it compulsory. This finding was explained in the conceptual framework as the legal aspect of waste management. It also confirmed the statement made by a law lecturer at the University of Ghana that, until government passes a law to make the NSD exercise compulsory, citizens will develop an indifferent attitude towards it.

5.2.7. Attitude of Community Members

The attitude of some community members also threatened the survival of the NSD exercise, especially in AMA. The misconception held among many city dwellers is that local authorities have an oversight responsibility to collect and dispose waste. Thus, residents expected the assembly and other private waste contractors to undertake the monthly clean-up

exercise while they (residents) go on with their daily activities. During an interview session with the Zoomlion officer he disclosed that some community members were oblivious towards the monthly clean-up exercise. They did not value the essence of participating in the exercise because government has already contracted Zoomlion and other private service providers to clean the streets. Some community members in AMA also took advantage of the free waste collection service during the NSD exercise and stored their waste for a month. This attitude did not go well for service providers and they halted waste collection in those areas.

The attitude of residents in AMA confirmed earlier findings by Konteh (2009). According to Konteh (2009), urbanites in developing countries prioritise basic needs like food, shelter, security and livelihood over environmental sanitation. Proper waste management practices become a priority only when these basic needs have been met. Wilson (2007) adds that proper waste management practices among urbanites become an issue when public health (disease and infections) or environmental damage like flooding, affects their own priorities (basic needs). It can be inferred from Wilson's statement that participation in the exercise was higher after the twin disaster (cholera outbreak and flood) because people became more aware of the devastating effects of poor environmental sanitation.

Perhaps, community members wanted to organise clean-up exercise on their own terms as stipulated in the NESP (MLGRD, 2010a) and empirical data confirm that residents were already organising their own clean-up exercise. However, the decision by government to institutionalise the NSD exercise made it look compulsory, since vehicular movement and trading activities were stopped. In addition, some residents tagged the exercise as a political agenda by the erstwhile NDC government. The comments by Mr. Robert Coleman and the incident in Aboabo, Kumasi, vindicate this statement. According to Mr. Robert Coleman, an official of Zoomlion (a private waste service provider company), the NSD exercise recorded

low community participation in some localities because residents tagged the initiative as a political agenda (Daily Graphic, 2016). Thus, residents who oppose the NDC government were less likely to participate in the exercise.

5.3. Conclusion

The main objective of this study was to explain the conundrum of how an initiative which received massive public support virtually failed in the long run. To achieve this objective, two areas with distinct socio-demographic characteristics were selected. Accra metropolis and Mpohor district were selected to represent heterogeneous and homogeneous areas respectively. The study areas had diverse socio-economic characteristics; therefore a mixed method was used to collect data from respondents.

Based on empirical data, the study confirmed that the NSD exercise was a top-down approach and lacked community ownership and acceptability. Residents saw the exercise as a direct order from the government and were expecting government to take absolute control and to provide all the resources to stimulate community interest. The NSD exercise followed the same implementation approach as the PAYD policy. These two policy interventions were unilateral decisions taken by government without the consent of local stakeholders. Just like the PAYD policy failed, because of low community involvement in the planning stage, the NSD exercise followed the same pathway. It reinforces the point that any policy intervention born out of an empirical vacuum is bound to fail.

The use of celebrities and dignitaries with the intention to canvass for support rather created a wrong impression, because local actors were not involved in organising the exercise. The obvious outcome was that residents only participated when the dignitaries and celebrities were around. Once the exercise was over, community interest also dropped. Thus, community interest was revived when these dignitaries and celebrities are present to observe the clean-up exercise.

In the study, the majority of respondents in the two research areas agreed that the absence of a legal instrument to back the NSD exercise was among the cause of low community turn-out. In addition, the majority of respondents in AMA and MDA cited failure of service providers to collect waste and inadequate provision of tools as the causes of low community turn-out in the NSD exercise. The study also showed that community participation in the NSD exercise was higher in MDA than AMA. However, participation in AMA recorded areal differentials within the study localities. Inadequate provision of incentives affected the majority of respondents in AMA but only very few respondents in MDA were affected by the inadequate provision of incentives. The reason was that rural dwellers perceived the NSD exercise as a duty without expecting any remuneration. Alternatively, urban dwellers were more rational and expected some level of incentives to stimulate their interest. Expert interviews revealed that respondents in AMA were storing their waste to take advantage of the free waste collection during the NSD exercise. This attitude was practised only in AMA and it compelled service providers to halt waste collection in such areas.

The findings have demonstrated that city dwellers and rural folks respond differently to government policy interventions due to their different socio-cultural, political and socio-environmental structures. For instance, Mpohor District recorded a higher participation than Accra Metropolis because the chief led the organisation of the exercise. In Accra Metropolis, Nima recorded the highest participation because a large number of youth groups participated in the NSD exercise.

5.4. Policy Recommendations

Based on the empirical findings, the study recommends the following policy directives to sustain community participation in the monthly clean-up exercise and to

improve environmental sanitation. The recommendations in this chapter are meant to achieve objective four of the study.

5.4.1. Government's policy interventions should be informed by empirical research

Since the NSD exercise was born out of an empirical vacuum, it failed to stand the test of time. It is recommended that any government policy should be underpinned with comprehensive research in order to identify the prospects, opportunities, constraints and challenges before eventual implementation. The failure of the PAYD policy and the NSD exercise should serve as a lesson to policy makers on the need to rely on empirical information before undertaking any initiative. The NSD exercise failed, not only because it was a top-down approach, but because policy makers were ill informed about the viability of the policy at the local level. An empirical study would have assessed the exercise with all the aspects of waste management to identify the potentials, opportunities, challenges and constraints in the communities before implementation.

5.4.2. Engage local actors in policy planning

The study has demonstrated that community participation was different in the two research areas because of the diverse socio-political structure. For instance, Mpohor District recorded higher participation than Accra Metropolis because the chief spearheaded the organisation of the clean-up exercise. At Accra Metropolis, Nima recorded the highest participation because of a large number youth groups. Policy makers should consider these diverse social settings and appreciate their dynamics because there is no one-size-fits-all policy to improve environmental sanitation. It must be added that despite expertise of waste regulators and service providers, community stakeholders provide specialist expertise, local knowledge and support in achieving any waste management policy (Bulkeley et al., 2007). Local authorities should consider local actors as partners rather than beneficiaries of development. Thus, traditional authorities who wield power and authority in rural areas

should not be side-lined in policy planning (Owusu & Afutu-Kotey, 2010). The chiefs and other opinion leaders in rural communities should be empowered and equipped to address environmental sanitation issues. Likewise, CBOs who are active agents in urban areas are key partners in policy planning and must be acknowledged as such. This confirms earlier studies by Oteng-Ababio (2014), that traditional authorities and CBOs play a key role in achieving effective environmental sanitation.

5.4.3. Engage local actors in awareness creation and sensitisation

Based on the study's findings, CBOs played a fundamental role in improving environmental sanitation in communities. The conventional practice of extending contracts to high scale private firms to collect and dispose refuse can equally be modelled to involve CBOs, FBOs and NGOs in the area of sensitisation and education. By using indigenous people in awareness exercises, residents feel a sense of responsibility to maintain a clean environment. Some community members can serve as watch dogs since indiscriminate dumping usually occur at night on the blind side of law enforcement agencies. If local authorities are able to involve CBOs in awareness campaigns, it will strengthen the partnership between their outfit and the community in general. This policy recommendation is justified on the grounds that members of CBOs are community activists who exhibit a sense of readiness to serve their people at any time. As rightly stated in the WHO (2016: 49) report, 'it is also important for local governments to be reminded that people in cities are not merely passive consumers of information and services, they are also the creators of city life'.

5.4.4. Equip community members with logistics

During the field survey one of the issues that came out was the inability of service providers to collect waste after the clean-up exercise. On many occasions, refuse that remain uncollected drain back into the gutters and this causes disinterest among community members to participate in the NSD exercise. It is recommended that local authorities provide assembly members with tricycles to assist in waste collection and disposal during the NSD exercise.

Other tools like wheelbarrows, shovels, rakes, gloves and safety boots should be made available during the exercise and be in the care of the assembly member. Provision of these logistics will create a sense of commitment, ownership and responsibility among community members. Subsequently, these tricycles should be distributed based on waste demand and the spatial extent of the community.

5.4.5. Provide sufficient incentives to stimulate community interest

During the interview sessions, assembly members in the two research areas together with a government official confirmed that a budget is prepared to support the NSD exercise. However, the assembly members and other public officials claimed they were side-lined in preparing the budget. This situation created a sense of apathy, not only among community stakeholders, but even among public officials. Even in a situation where money was disbursed, the amount was insufficient to refresh the youth in the community. For example, in a middle-income area like Kaneshie, GH ₵100 is not enough to refresh the youth, taking into consideration the population density and the large spatial layout of the area. This statement was confirmed by the assemblyman during an interview session. This explains why the majority of respondents in AMA complained about inadequate incentives to stimulate community interest in the exercise. It is therefore recommended that MMDAs with the support of community members increase the budget allocated for communities and ensure fair distribution of funds to stimulate community interest in the NSD exercise.

5.4.6. Employ and motivate environmental health officers.

Before the introduction of the structural adjustment which coincidentally led to the dismissal of employees in the public sector (Songsore & McGranahan, 2000; Asiedu & Agyei-Mensah, 2008), there was some level of environmental discipline in Ghana. People took to their heels upon hearing of the presence of environmental health officers. Today, the state of the environmental condition in Ghana is appalling. So far, the majority of respondents interviewed in this study have demonstrated their support for government to introduce

sanitation officers known in the local parlance as '*Tankas'* literally meaning sanitation inspectors. They also admitted that the officers, if not remunerated adequately, might collect bribe which and thus compromise their duties. To offset this, the MLGRD and local authorities should provide the necessary support and motivation to the environmental sanitation officers.

Most importantly, capacity building and training workshops should be organised for the environmental health officers. A study by Crook and Ayee (2006) shows that the majority of the staff working under the Environmental Health Department (EHD) possesses low educational qualifications. Surprisingly, the younger officers were the least educated. Their finding also shows that the EHD is becoming an ageing workforce, since 53% of the staff was over 40 years old, and 34% were above 45, which is quite high for the Ghanaian public service.

The urban population has increased considerably and will require more environmental sanitation officers to make unannounced visits to households. Restoring environmental discipline will require strong commitment from political leaders. If this challenge is addressed, enforcing environmental sanitation by-laws can be achieved in a satisfactory manner. It must be noted that community stakeholders (chiefs, imams, church leaders, assembly members, CBOs and community activists) must equally play a key role in restoring environmental discipline and must be acknowledged as such.

5.4.7. Public actors must intensify awareness creation and sensitisation.

The Human Settlement and Environmental Health Unit of MLGRD and Information Services Department (ISD) together with MMDAs should make awareness creation a continuous exercise. Empirical data and other studies (Obiri-Opareh & Post, 2002; Oteng-Ababio, 2014) have confirmed that the main challenge of environmental sanitation in the country is attitudes of citizens which affects the way they handle waste. For instance,

providing dust bins in public spaces does not necessarily influence people to desist from littering the environment. A keen observation in our major public places justifies this statement. In most public spaces, one can find a refuse container, yet people choose to throw refuse indiscriminately. This situation resonates with Oteng-Ababio's (2014) comment that the throwaway mindset of citizens is a major challenge to managing waste in Ghana. One of the measures to address this attitudinal problem is to embark on intensive awareness creation and education which targets all citizens, regardless of age, gender and background. This exercise should be done continuously to remind citizens of their responsibilities to maintain a clean environment. Target groups should include schools, private and public institutions as well as informal institutions. Informal stakeholders like traditional authorities, community activists, opinion leaders, members of CBOs, FBOs and NGOs and assembly members should be empowered to participate in the awareness creation exercise. Sensitisation should not be limited to attitudinal change in handling waste, but must be extended to workers in the informal waste picking business. Their activities should not be labelled as jobs for vagrants, but rather as a pro-environmental action. Studies (Medina, 2008; Oteng-Ababio, 2011) have demonstrated the indispensable role of informal waste pickers to augment effort of official service providers in the solid waste industry.

5.4.8. Introduce environmental sanitation task force.

Studies are replete with evidence of indiscipline among some Ghanaian citizens regarding waste handling. It behoves local authorities to introduce environmental sanitation officers on the street. The city guards who are stationed in the commercial areas in Accra should be more vigilant to spot perpetrators. Anybody found littering should be made to pay a spot fine, just like we often see (*do no urinate here, spot fine ₵ 50*) notices around peoples' buildings. This decision by the local authorities can be bolstered if grassroot community members like religious leaders, assembly members, opinion leaders, community activists, women groups and youth groups are involved in the combat against indiscriminate littering.

Youth groups can serve as community watch dogs because individuals who engage in indiscriminate dumping usually operate at the blind side of law enforcement agents. Once the community is engaged in the planning of this policy intervention, the probability of the task force gaining community ownership and support is high. This is evident in the findings of the study where the NSD exercise was a top-down approach and marginalised the citizens who would ensure the sustainability of the exercise.

5.4.9. NESP should reflect an African and national agenda.

In examining why the NSD exercise failed, it was expedient to consider the policy framework guiding environmental sanitation in Ghana. Previous studies (Songsore & McGranahan, 2000; Marshall & Farahbakhsh, 2013) show that the MDGs are driven by the agenda of developed countries. The 'green agenda' which focuses on mitigating human activities on the ecosystem takes centre stage in global policy discussions at the expense of 'brown agenda' (environmental threat to human health) which is a major challenge for city authorities in developing countries (Konteh, 2009). Yet the NESP was reviewed to reflect policy targets in the MDGs without considering the challenges and achievements in the previous policy.

Marshall and Farahbakhsh, (2013) argue that developing countries find themselves in the mainstream brown agenda but are compelled to ignore their present challenges and focus on achieving global targets which reflects the green agenda. In effect, local policies are designed to meet targets of the green agenda while the more fundamental brown agenda is left unattended, partly because these international agencies set the agenda and provide local authorities with funds and other forms of financial support. Konteh (2009: 72) points out that 'when sanitation and communicable diseases were a serious problem in Europe and North America, the public health focus was exclusively on those same issues which today fail to

receive adequate attention in the developing world. In spite of being a major threat to public health; green environmental issues were not on the agenda then'.

Konteh's remarks explain why the original MDGs were silent on sanitation (a major issue facing developing countries). Sanitation was only squeezed into the MDGs during the World Summit on Sustainable Development (WSSD) in 2002. For instance, infectious diseases such as diarrhoea were left out of the many diseases prioritised in the MDGs (Marcotullio & McGranahan, 2007). One may ask, were those who drafted the MDGs not aware of the environmental and health risks associated with sanitation? This is a wakeup call for developing countries to give a second thought on the SDGs. Perhaps it is a way of helping developed countries solve the mess they created (green agenda) at the expense of challenges (brown agenda) facing developing countries. In the opening remarks of their work, Marcotuillo and McGranahan (2007) comment that we must think globally and act locally while to understand the spatial dimensions of environmental burdens. Their statement tends to support a local content in policy development which epitomises the bottom-up approach in dealing with environmental sanitation issues.

5.5. Suggestion for Future Research

Previous research findings (Owusu, 2010: Oteng-Ababio, 2011) show that those who practise indiscriminate dumping have no formal arrangements with service providers. Their tiny purse cannot cater for themselves let alone subscribe to accredited service provision. A careful review of the research findings reveal that the majority of defaulters are unskilled migrants who have come to seek for greener pastures in Accra. They usually engage in street hawking along the highways in Accra. During the field work, a large section of these migrants were found at Kaneshie and Nima seeking refuge in front of kiosks. These migrants hustle on a daily basis to make ends meet and would ordinarily pay no heed to proper waste disposal (Konteh, 2009). It is therefore suggested that a future research is carried out to

examine solid waste management among informal migrants in the Accra Metropolis. The target group ought to include lorry conductors, head porters, truck pushers and street hawkers.

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APPENDICES

APPENDIX 1: Household Questionnaire on Community Participation in the NSD Exercise. Please tick/state the appropriate response in the space provided. Confidentiality of your response is fully assured.

SECTION A

BACKGROUND INFORMATION

1. **Location** [i] High-Income [ii] Middle-Income [iii]Low-income [iv] Rural
2. **Sex** [i] Male [ii] Female
3. **Age**…..
4. **Religious affiliation**

   [i] Christian [ii] Muslim [iii] Traditionalist [iv] Others [please specify] ……..

5. **Ethnicity**

   [i] Akan [ii] Ga-Adanbge [iii] Ewe extraction [iv] Northern extraction [v] Expatriate

6. Educational status [highest level reached by respondent?

[i] University [ii] Diploma/ Polytechnic/Nursing [iii] SHS/Vocational/Technical [iv] Primary/Middle/JHS [v] None [vii] Other [please specify]

7. Which employment sector do you work?

[i] Civil/Public servant [ii] Private formal [iii] Private informal [iv] Unemployed [v]Retired

8. Marital Status [i] Married [ii] Single [iii] Divorced [vi] Widowed

9. What is your approximate monthly income?

[i] < 100 [ii] 100-500 [iii] 510 -1,000 [iv] >1,000

10. What is the size of your household (per one eating unit)? [i] 1-3 [ii] 4-6 [iii] 7-10 [iv] >10

11. Type of housing facility?

[i] Apartment/Flat [ii] Compound house [iii] Detached/Single Family Homes [iv] Others (please specify)……

SECTION B

LEVEL OF RESPONDENTS' KNOWLEDGE AND PERCEPTION

12. Have you heard about the NSD exercise? [i] Yes [ii] No

13. If Yes to 12, how were you informed about the exercise?

[i] Information van [ii] E-Media [iii] Print media [iv] Community Info Centre [v] Neighbours

14. How will you rate effectiveness of awareness creation in the NSD exercise?

[i] High [ii]Fair [iii] Low

15. Before the NSD exercise, was there any form of community clean-up initiative in this community? [i] Yes [ii] No

16. If yes to 15, how often was this clean-up exercise organised?

[i] Weekly [ii] Every Two Weeks [iii] Monthly [iv] Once a while

17. Have you participated in the NSD before? [i] Yes [ii] No

18. If Yes to 15, where did you clean?

[i] Immediate surrounding [ii] Public space [iii] Others (please specify)……

19. How will you rate the level of community participation in the exercise?

[i] High [ii]Fair [iii] Low

20. How will you rate your own level of participation in the exercise? [i] High [ii]Fair [iii] Low

21. What motivated you to participate in the exercise?

[i] Moral Obligation [ii] Peer influence [iii] Community norm [iv] Others……..

SECTION C

FACTORS THAT MOTIVATED OR MILITATED AGAINST THE NSD EXERCISE

22. Did you receive any tools from the assembly during the NSD exercise? [i] Yes [ii] No

23. Do you have an environmental sanitation committee to organise clean-up exercise in this community? [i] Yes [ii] No [iii] Not aware

24. If yes to 17, did the community receive any support from the assembly in establishing the sanitation committee? [i] Yes [ii] No

25. Are the FBOs, NGOs, and CBOs in this community? [i] Yes [ii] No

26. If yes to 21, do they support the community in observing NSD exercise? [i] Yes [ii] No

27. Who organises the clean-up exercise in this community? [i]MP [ii] Assemblyman/ woman [iii] Traditional leader [vi] Residents [v] Local authority [vi] Nobody

28. Have you ever been sanctioned for refusing to participate in the clean-up exercise?

[i] Yes [ii] No

29. If Yes to 28, what form of penalty did you face? [i] Payment of fine [ii] Prosecuted [iii] Verbal Warning [iv]None [v] Others (please specify)……..

30. To what extent are you involved in decision making in this community? [i] High [ii] Fair [iii] Low

31. Does your answer in 30 affect your participation in the NSD exercise? [i] Yes [ii] No

32. To what extent is sanitation bye-laws enforced in this community? [i]Strong [ii] Fair [iii] Weak

33. Do you think absence of a legal instrument has affected your participation in the clean-up exercise? [i] Yes [ii] No

34. Will you support legalisation of the NSD exercise? [i] Yes [ii] No

35. If Yes to 34, what form of punishment should be given to defaulters? [i] Payment of fine [ii] Prosecution [iii] Verbal Warning [iv] Clean the community [v] Others (please specify) ……

36. Does attending a social function (wedding/funeral) restrict you from your participating in the NSD exercise? [i] Yes [ii] No

37. Do you receive support from service providers (private/public) in celebrating the NSD exercise? [i] Yes [ii] No

38. What is the main challenge you face in the NSD exercise? [i] Failure of service providers to collect waste [ii] Inadequate provision of tools [iii] Inadequate provision of incentives [iv] Absence of sanctions [v] Others…….

39. Does inadequate provision of cleaning materials/ tools by the assembly affect your participation in the NSD exercise? [i] Yes [ii] No

40. Does inability of the service provider to collect piled up refuse after the clean-up exercise deter you from participating in subsequent clean-up exercise? [i] Yes [ii] No

41. Does the absence of incentives from the assembly after the exercise deter you from participating in subsequent clean-up exercise? [i] Yes [ii] No

42. Do you agree government should equip environmental health officers and employ more to ensure residents maintain clean environment? [i] Yes [ii] No

THANK YOU

APPENDIX 2: Interview guide for FGDs and Households' in the NSD Exercise.

Confidentiality of your response is fully assured.

1. Name of respondent: …….

2. Sex: ……3. Age: ……

4. Educational status: …….

5. Years stayed in Community:

…….

6. Name of Community: ……

Mode of Solid Waste Practices in the Community.

7. Do you engage in any waste minimisation practices like recycling, reuse and composting?

8. Are you satisfied with the current institutional arrangements?

9. How will you describe your relationship with the service provider?

10. Do you pay for CCC service? If yes, to who and why?

Knowledge, Attitude and Perception on the National Sanitation Exercise.

11. What is your view on the national sanitation exercise?

12. Do you think the major task of the clean-up exercise lies on the WMD?

13. Do you think participation in the exercise should be mandatory or voluntary?

Level of Community Participation in the National Sanitation Exercise.

14. How will you describe the level of social cohesion in the community?

15. Will you agree the level of social cohesion affect participation in the clean-up exercise?

16. How will you assess the level of residents' participation in the clean-up exercise?

Factors Influencing Community Participation in the National Sanitation Exercise.

17. What socio-economic activities clash with the period of the sanitation exercise?

18. Do you think political affiliation influences participation in the clean-up exercise?

19. What can the assembly and community do to whip up interest in the clean-up exercise?

THANK YOU

APPENDIX 3: Interview guide for Traditional Leader.

Confidentiality of your response is fully assured.

1. Name of respondent: …….

2. Sex: ……

3. Age: ……

4. Educational status: ……..

5. Name of Community……..

6. Before the NSD exercise was there any community clean-up exercise?

7. What was the level of community participation in that clean-up exercise?

8. What measures were used to maintain community interest in that exercise?

9. How will you describe community awareness and perception on the NSD exercise?

10. What plans do your make for an impending NSD exercise?

11. What sort of motivation do you give to your community members on the exercise?

12. How will you describe your relationship with the assembly staff?

13. What was your level of participation in the policy planning?

14. What are the challenges you encounter in performing your roles in the NSD exercise?

15. How can these challenges be addressed?

16. What factors do you think have affected community participation in the exercise?

17. Do you agree the NSD exercise as achieved its objective?

THANK YOU

APPENDIX 4: Interview guide for Service Providers: WMD, EHD, and Zoomlion.

Confidentiality of your response is fully assured.

1. Name of respondent: …….

2. Sex: ……

3. Age: ……

4. Educational status: ……..

5. How would you describe the efficiency of your staff?

6. How will you rate the services you render to the communities?

7. According to the 1999 and 2010 National Sanitation Policies, communities are expected to establish sanitation norms. How far has this policy directive been achieved?

8. What plans has your outfit developed to improve environmental sanitation?

9. What form of support do you offer the community in the sanitation exercise?

10. What are the challenges you encounter in performing your roles in the NSD exercise?

11. How can these challenges be addressed?

12. What factors do you think have affected community participation in the exercise?

13. How can community participation in the national sanitation exercise be improved?

14. Do you agree the sanitation exercise should be legalised?

15. Do you agree government should employ and equip more environmental health officers?

16. Do you think the sanitation exercise has achieved its objective?

THANK YOU

APPENDIX 5: Interview guide for official at MLGRD

Confidentiality of your response is fully assured.

1. Name of respondent: …….

2. Sex: …… 3. Age: ……...

4. Educational status: ……..

5. According to the 1999 and 2010 National Sanitation Policies, communities are expected to establish sanitation norms. How far has this policy directive been achieved?

6. Did your outfit receive a feedback on the outcome of awareness creation and education on the sanitation exercise? If yes, what has been done about it?

7. What provisions were made to ensure sustainability of the sanitation exercise in the communities especially the middle and low-income areas?

8. What role did traditional leaders, CBOs, FBOs and NGOs play in the planning of the sanitation exercise?

9. How will you describe the level of participation demonstrated by your own staff members?

10. What kind of support has your outfit given to the MMDA's to facilitate the clean-up exercise?

11. Do you think the first Saturday is inappropriate to celebrate the exercise judging by the numerous social activities that takes place?

12. How has the absence of a legal instrument affected the MMDA's enforcement of the sanitation exercise?

13. What indicators are used to assess the strength and weakness of the NSP?

14. What percentage of the National Sanitation Policy has been achieved?

15. Do you think the national sanitation exercise has achieved it objective?

16. Do you agree the sanitation policy has to be reviewed? If yes why? If no why?

THANK YOU