

International Institute of Social Studies



The Puzzle In Service Delivery Through Public-Private Partnership In Nigeria: The Case Of Household Solid Waste Management In Lafia, Nasarawa State

A Research Paper presented by:

OTEN ITA BASSEY

NIGERIA

In Partial Fulfilment of the Requirements for Obtaining the Degree of
MASTER OF ARTS IN DEVELOPMENT STUDIES

Major:

Agrarian, Food and Environmental Studies

(AFES)

Specialization: (ESD)

Environment and Sustainable Development

Members of the Examining Committee:

Dr. Murat Arsel

Dr. Mindi Schneider

The Hague, The Netherlands

Disclaimer:

This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

Inquiries:

Postal address:

Institute of Social Studies
P.O. Box 29776
2502 LT The Hague
The Netherlands

Location:

Kortenaerkade 12
2518 AX The Hague
The Netherlands

Telephone: +31 70 426 0460
Fax: +31 70 426 0799

Acknowledgement

I remain grateful to NUFFIC for providing the platform for me to embark on the MA degree program. This paper would not have been possible without the guidance of my supervisor Dr. Murat Arsel and examiner, Dr. Mindi Schneider. Your intellectual abilities and reflective questions steered my mind towards approaching a social problem with the view of alternatives that could bring about social change.

I am indeed grateful to the Director General of National Environmental Standards and Regulations Enforcement Agency (NESREA), Dr. Lawrence Anukam and Nasarawa State Field Office Coordinator of NESREA, Toroni Abosede who were instrumental to my approval to embark on the MA degree program on Development Studies.

A further thanks goes to Asmita Vaidya who was keen about my progress by offering words of encouragement when necessary throughout my study period. To all AFES colleagues, I really appreciate the friendship throughout the period of the program.

To Almas Mahmud, I say thank you for the words of encouragement when my back was against the wall. The General Manager of Nasarawa State Urban Development Board (NUDB) Mr Chris Abari was out of his way to assist with the contacts of potential interviewees in the private and public sector and I am grateful to him.

I would like to express my enormous heartfelt appreciation to my husband Ovat Ita Bassey for his love, support and patience and the children Onoasi, Okotasi, Bassey and Ekopasi for enduring my absence for 18 months. To my late father Apostle Ekong Essien Okon whose desire was to educate his children to graduate level, I say thank you for taking the challenge against all odds. To my mum Eno Ekong Essien and my mother-in-law Francisca Ita Bassey I say thank you for your spiritual support and care for the children.

I appreciate God Almighty, the one who made my encounter at the International Institute of Social Studies (ISS), The Hague possible.

Contents

<i>List of Tables</i>	<i>vi</i>
<i>List of Maps</i>	<i>vi</i>
<i>List of Appendices</i>	<i>vi</i>
<i>List of Acronyms</i>	<i>vii</i>
<i>Abstract</i>	<i>viii</i>
Chapter 1 Understanding the Scene	1
1.0 Introduction	1
1.1 Statement of Problem	2
1.2 Research Question	3
1.2.1 Sub-Questions	3
1.3 Research Objectives	3
1.4 Methodology	4
1.4.1 Rationale and Logic of the Case	4
1.4.2 Case Selection Strategy	5
1.4.3 Design and Collection of Evidence	6
1.4.4 Analysing of Data	7
1.5 Risk and Ethical Challenges	8
1.6 The Study Area	9
1.7 Analytical Framework	10
Chapter 2 Literature Review	13
2.0 Introduction	13
2.1 The Materiality of Waste	13
2.2 Public-Private Partnership	16
2.3 PPP and Governance	18
2.4 Models of PPP	20
2.5 Sustainability	22
Chapter 3 PPP in Waste Management: Opportunities and Constraints	26
3.0 Introduction	26
3.1 Institutional Actors in Solid Waste Management	26
3.2 Regulatory Framework for Solid Waste Management	29
3.3 Justification for State Intervention in Household Solid Waste Management	30

3.4	The Process of Marketization	31
3.5	Rationale for Waste Management by Private Company	32
3.6	Operation of the Market	34
3.7	Governance of the Market	35
3.7.1	The Transitional Mode	36
3.7.2	Class Accommodation	36
3.7.3	Control of Access to Service	38
3.7.4	Standard for Control of Access to HHSWM Service	39
3.8	Enforcement of PPP Program	40
3.9	Recognizing the Materiality of Household Solid Waste	42
Chapter 4 Participation and Access to Service Delivery		46
4.0	Introduction	46
4.1	Level of Household Involvement	47
4.2	Level of Participation of Household	50
4.3	Formal and Alternative Waste Management Practices in Lafia	51
4.4	Service Delivery and Distribution of Skip Bins	53
Chapter 5 Implication of Findings		55
<i>References</i>		57

List of Tables

Table 1.1 Health status according to sex

Table 1:

Figure 1.1 Young girls tending cattle

Error! Bookmark not defined.

List of Maps

Map 1.1 Map of Nigeria

Error! Bookmark not defined.

List of Appendices

Appendix 1 Sample table

Error! Bookmark not defined.

List of Acronyms

HHSW	Household Solid Waste
HHSWM	Household Solid Waste Management
LLGC	Lafia Local Government Council
MoE	Ministry of Environment
MOU	Memorandum of Understanding
NASEPA	Nasarawa State Environmental Protection Agency
NESREA	National Environmental Standards and Regulations Enforcement Agency
NUDB	Nasarawa State Urban Development Board
PPP	Public-Private Partnership
SW	Solid Waste

Abstract

Public-private partnership (PPP) is a common development model promoted by the World Bank and other international organizations as what can solve the problem of service provision in diverse sector of the economy. The management of solid waste has been marked with economic crises and the increasing flow of waste drives policy makers in Lafia to adopt PPP. The adoption of PPP has transformed the state institution and changed the mode of governance. The designing and implementation has created different outcome for different classes of citizens, obscured with cultural practices that is not embrace by the state. However, the various practices, human intentions, the resistance in the nature of waste and the commodification of waste by the state has influence the efficiency that is promoted with PPP. Besides, the environmental change that is produced from the mode of regulation by the state has created a clean environment for the wealthy while intensifying the indiscriminate disposal in poor neighbourhood. The role of the state in marketization of solid waste has led to contradictions, inequality and has limited the sustainability of household solid waste management in Lafia.

Relevance to Development Studies

Household solid waste has been uncooperative to human intervention and the commodification by the market, the regulatory mechanism designed by the state has enabled capital accumulation but created unequal access to public service for the poor rather than the gains of PPP. The inability to solve solid waste problem in Lafia has implications on the environment, public health, the society and economy. Solid waste has values in the community where it is generated and the materiality determines how waste circulates and where it is disposed. The current model of household solid waste management which aims at achieving efficiency and environmental protection has produced a win-win situation for the state and the private companies but not for the community and the environment. The disparity and inequality created in the

governance process of PPP promotes unsustainable practices such as open burning and indiscriminate dumping of solid waste in poor neighborhood. Having a sustainable system that promotes environmentally friendly practices and not only collaborating with the market for economic efficiency is essential in the management of household solid waste. Understanding the mode of regulation of PPP in household solid waste management and how it impact on the environment and health of the citizens is important in framing policy on the environment that is sustainable. The hegemonic approach in development policy, the lack of transparency and omission of basic social aspects in policy framing creates disparity and inequality hence re-theorizing the mode of regulation and the role of the state is necessary for environmental protection and sustainability.

Keywords

Public-Private Partnership, Regulation, Household Solid Waste, Sustainability, Inequality, Environment, Materiality

Chapter 1

Understanding the Scene

1.0 Introduction

In the 1970s, the global economic crisis led to significant transformations in international and national institutional arrangements and was imposed on Asia, Africa and Latin America by transnational corporations and the Bretton Woods institutions. The market-based approach through structural adjustment programs advocated that the state should not be involved in direct provision of public services and in the late 1980s, unequal access to service was intensified between the poor and the rich (Baud 2004:1). Also, the World Bank's interest in partnership introduced effectiveness and efficiency as criteria for service provision (Baud 2004:8). But the idea of the role of the state in partnerships aimed at urban development shifted to the state being the 'enabler' and the coordinating agency with other partners (Baud 2004:2; Post 2004:22).

Globally, about 3.5 billion people in countries with low and middle-income have no access to adequate waste management services. Again, about 1.3 billion tons of municipal waste is generated annually and may increase to 2.2 billion tons by 2025 with less than 50% collection rate (Hoornweg and Bhada-Tata 2012:ix). In Nigeria, the projection has been 0.8kg of municipal waste generation per capita per day with a total production of 101, 307 metric tons per day by 2025 (Hoornweg and Bhada-Tata 2012:82). The management of waste in Nigeria has been characterized with inefficient collection, inefficient collection coverage and improper disposal (Ogwueleka 2009:173; Manaf et al. 2009:2906) with no proper documentation (Afun 2000:4).

The study draws on the concern over the growing indiscriminate solid waste dumping in Lafia even with the implementation of public-private partnership (PPP) in household solid waste management (HHSWM). The cost of managing larger waste flow brought about the change in governance to achieve sustainable development effectively (Baud 2004:5). This study has implication in the theoretical and practical sense of it. First, state failure has been justified as the basis for adopting PPP in waste management in Lafia. In

reality, efficiency gains of PPP implementation are derived differently base on class accommodation of citizens. Second, the research paper questions the capability of the market in providing sustainable service to the environment and citizens equitably and argues that environmental change is co-produced by state institutional agents through regulatory governance in PPP, the models of service delivery and by households.

The materiality of waste at the spatial and temporal level is examined in the study. The focus in Lafia is in the social relations, the private practices within the community and intentions in the utilization of waste. The logic of efficiency in the management of household solid waste is investigated. This study will show how institutional agents design and regulate the market and the context in which citizens are excluded from efficiency gains in basic service. Understanding how PPP can improve the environment sustainably, the class of people benefitting from the healthy environment and how the mechanism was created will be explored using Political Economy of Socio-Environmental Change in the case of Lafia. Understanding how the integration of sustainable development principle of access to service beyond the logic of cost efficiency and service effectiveness in partnership but including affordability, equality, broad coverage and environmental concerns (Baud 2004:3) will be unpacked using Bakker's framework.

1.1 Statement of Problem

The responsibility of solid waste management has traditionally been the role of the public sector without payment by citizens¹ but marked with inadequate coverage resulting in indiscriminate dumping, littering and clogged drainages from a chaotic disposal of solid waste in most part of Lafia (Okon 2016:37; Ogah et al. 2014:49; Joseph 2013; Attah 2014). PPP, was introduced in Lafia at a pilot level in 2012 by Nasarawa State Urban Development Board (NUDB) to achieve efficiency, and to improve the quality of urban service provision in solid waste management (SWM). SWM without much attention in the reduction at the point of generation amounts to increase volume and pressure on the resources required for disposal (Hoornweg and Bhada-Tata 2012).

Despite promoting the PPP on the basis of efficiency, cost-effectiveness and technical expertise in service delivery (Contreau-Levin & Coad 2000:3), the switch from government monopoly in solid waste management to public-private partnership has not resulted in clean and litter free Lafia town (Joseph 2013b; Attah 2014b). This study will investigate the regulatory framework, the role of state institutions, households and analyze policy documents, re-theorizing the regulation of household solid waste collection service as no research has been conducted on regulation of PPP in HHSWM in Nasarawa State, Nigeria.

1.2 Research Question

Has the pilot PPP been effective in contributing to the solving of Lafia household solid waste management problem?

1.2.1 Sub-Questions

- a. What are the opportunities and constraints to successful PPP in waste management in Lafia?
- b. How has the regulation of waste collection influenced household participation and access to equitable solid waste management service?
- c. Has the pilot PPP arrangement contributed to equal improvement of the environment for all citizens?

1.3 Research Objectives

The objective of this research is to first, describe the waste management system in Lafia, exploring the opportunities and constraints to successful management of household solid waste under the pilot model of PPP. Secondly,

1 Personal experience having worked in Lafia since 2008 till 2015 and information from the review of literature for policy brief on solid waste disposal in Nasarawa state on course ISS-4237 Political Economy of the Global Food System.

the research seeks to know how the participation of households in the current pilot model of PPP has influenced the outcome and the context of household participation and access to service delivery. Thirdly, to describe how the pilot PPP arrangement contributes to improving the environment of citizens.

1.4 Methodology

Waste management is a global problem and to contribute to the world that we are dealing with waste and waste management, the study on the case of household solid waste management (HHSWM) in Lafia seeks to contribute to the larger class of cases of waste management solution in Nigeria. The case of Lafia is one solution on how PPP in HHSWM was implemented to improve waste management challenges. Shedding light on the design and implementation process of PPP in HHSWM will give the understanding of the basis for the failure of the system in Lafia in improving performance and achieving efficiency in the delivery of SWM services.

The research eliminated other waste generators, considering the limited time for the fieldwork, and focused only on household since the logistics for household waste collection differs from industrial waste and waste from business premises. Again, waste management by the private sector was mainly on waste collection procedure in Lafia and not the entire chain of storage, collection, transportation, processing, treatment and disposal. Also, due to the industrial action by civil servants in Nasarawa state within the period of the fieldwork, being July and August 2016, interviewing different category of public sector officials was hampered.

1.4.1 Rationale and Logic of the Case

Case study research is the presentation of empirical data that deals with in-depth ‘contemporary phenomenon’ within ‘real-world context’ through explanatory, descriptive or exploratory research method with distinct yet overlapping features (Yin 2014). Doing case study requires qualitative, holistic, method of data collection of evidence in the natural but diffuse state, employing triangulation of sources to investigate the properties of a single

observation or phenomenon (Gerring 2007:31). The study of HHSWM in Lafia was qualitative, combining both primary data collected through semi-structured interviews, focus group discussion and secondary data from academic literature review, newspaper publications and policy documents as sources of evidence. The nature of the study was an empirical one and required asking questions to address real life problem.

Ragin (2000:22) refers to the logic in case-oriented strategy as focusing on a small number of cases but “analyzing each case as a whole to understand a complex unity rather than establish relationships between variable” (Cited in Della Porta and Keating 2008:204). According to Jennifer Platt (1992), case study methodology is marked with contestation due to the combination of different subjects in framing its meaning (Cited in Gerring 2007:32). The designing and implementation of case study research has to be linked with the objectives, the design and the findings (George and Bennett 2005:73). Besides, the typology of case study research designs requires both spatial and temporal evidence (loc.cit).

1.4.2 Case Selection Strategy

A single case study of solid waste management in Lafia in the context of Public-Private Partnership was conducted using diachronic and synchronic temporal variation for explanation building. This study required an in-depth inquiry, and therefore, qualitative research was conducted using a case study-based design to have a detailed investigation of a current HHSWM phenomenon in Lafia. The case study population were drawn from key representatives of the Nasarawa Urban Development Board (NUDB), Nasarawa State Environmental Protection Agency (NASEPA), Lafia Local Government Council (LLGC), the Ministry of Environment (MoE), private waste companies and households.

To ascertain efficiency in performance in HHSWM through PPP arrangement, a typical case selection strategy was applied in the different neighborhood in the high, the middle and the low income areas of the existing zones in Lafia. A typical case strategy ‘exemplifies what is considered to be a typical set of values, given some general understanding of a phenomenon’ (Gerring 2006:91). Areas where there are common incidents of litter, clogged

drainages and chaotic solid waste dumping even with the current PPP arrangement in Lafia were identified. Households in the low and middle income areas with the common outcome of littered environment were interviewed and engaged in focus group discussion.

Also, a deviant case strategy being an outcome that culminates in a general proposition, which may be applied to other cases in the population (Gerring 2006:106) was applied in the study. A deviant case selection strategy was employed in identifying areas with significant difference in outcome being the neighborhood that is always clean and this was peculiar to the high-income area. The use of typical and deviant case selection strategy was to provide an answer to "has the pilot PPP been effective in contributing to the solving of Lafia HHSWM problem?" Therefore, a case study was useful in having a nuanced view on the practice of SWM applicable in Lafia, investigating the level of participation of households, the materiality of waste and mode of regulation of pilot PPP program.

1.4.3 Design and Collection of Evidence

The nature of the study is an empirical one and required asking questions to address a real life problem. The research findings began with snowball process through phone calls to the General Manager of NUDB to identify potential interviewees. Sources of evidence were from newspaper publication, pictorial representation, policy documents, 32 interviews and 7 focus group discussions (FGD) after reaching the point of saturation and from direct observation to have a good estimation of the realities in each area. The focus group discussions were conducted in an informal way before the interview with households by choosing different categories of persons- male, female, youth, elderly and community leaders from the clean areas and same was replicated in dirty areas. Similarly, participants from different households being single rooms, flats, bungalows, estates and apartment block were interviewed in different zones.

This categorization was based on the different components of specific zones such as the type of households, the clean neighborhood, and the dirty neighbourhood. Embedded units of analysis were drawn from NUDB, MoE, LLGC, households and the 4 private waste management companies. I

interviewed 24 households, 4 key government officials and 4 private waste company representatives. The FGD was conducted before interview in an informal way by choosing different categories of persons from the neighbourhood, the clean areas and same was replicated in littered neighbourhoods.

In all categories of the interview, the use of semi-structured interview guide was used to ensure similar questions apply to specific category of respondents to have a nuanced perspective on the waste management situation in Lafia. For the household, I sought to know how the state of waste management in Lafia, the waste management practices by individuals, and what informs individual's choice. Then I interviewed the respondents on their active involvement in the designing and implementation of the pilot PPP program. Lastly, I interviewed the respondents on the measures they think can prevent open dumping of solid waste in unauthorized places. The focus group discussion with waste generators was based on same interview questions on the state of solid waste management in Lafia, individual's method of disposing waste, the level of involvement in the PPP program and alternative to the present model of solid waste management.

The interview with key representatives from NUDB, NASEPA, LLGC, MoE and private waste managers focused on the obligations and aim of institutions in the design and implementation of PPPs in HHSWM, the regulatory framework and setting of fees. SWM in Nigeria are portrays corruption, inadequate infrastructure, poor funding, lack of manpower and poverty (Nwifo 2010:500;) without investigating the provisions of the tool for environmental governance and the social outcome of the model of solid waste management within the scope of applicability.

1.4.4 Analysing of Data

The analysis of the research findings was guided by a descriptive framework to identify the appropriate causal link on how PPP has contributed to solving HHSWM problem in Lafia. The research focused on relevant explanations where it emerged, analysis of state institutions, policy document, how the arena for PPP was created, the level of participation and how the

regulation of the program was carried out. The qualitative data explains the process and the performance aspect of the PPP arrangement.

Explanation building was used to trace changes that occurred over time in household solid waste management since the adoption of PPP model in 2012. The outcome was matched with the significant theoretical predicted trend of poor funding and lack of infrastructure as limitations to the effectiveness of the public sector service provision and the attraction for the market in public service delivery. Also, the stipulated attraction for private engagement base on logic model of efficiency, innovation and cost effectiveness in service delivery, the chain of events over an extended period, indicating the repeated cause and effect patterns. Specifically, I focused on the logic model of public-private partnership program in reporting of research findings on how it has been experienced in Lafia. However, analytical generalization was drawn from the findings in HHSWM in Lafia.

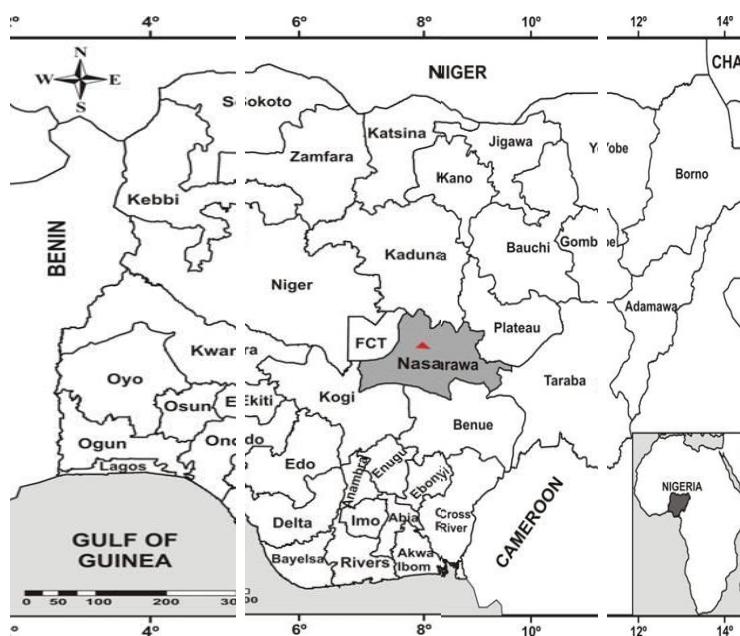
1.5 Risk and Ethical Challenges

Having access to the policy document on PPP was a challenge. I was given the policy documents on waste management to review but was only allowed to sight the document on PPP. The Terms of Reference of the Memorandum of Understanding (MOU), and the functions of institutions were read out without releasing the document. I was open to let the officers responsible for such document know that the research work is purely an academic issue. Since I am not familiar with the zoning of Lafia, I had to seek the assistance of a gatekeeper from NUDB with a good knowledge of Lafia to show me where there are different outcomes. Traveling from The Hague to Nasarawa State, Nigeria and around Lafia and the outskirt when there was fuel hike in the country was a high financial risk for me knowing that my only source of income was my monthly allowance from Netherlands Fellowship Program (NFP).

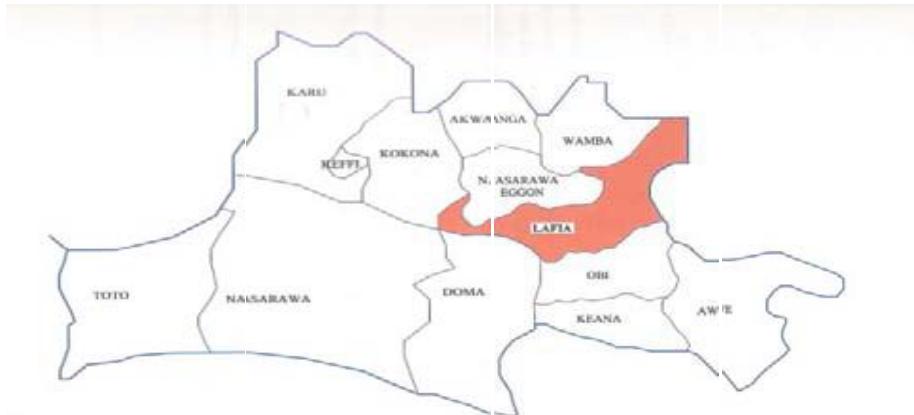
Moving round Lafia especially to 500 Housing Unit on a motorcycle and not finding another bike on time after collecting data was challenging. Also, the control of information by the manager of a private company who interrupted my interview with one on his workers and insisted on being the rightful

participant for any interview influenced the data collection process. Having to deal with individual's perception of my personality, further made me establish honest and open interactions to avoid misrepresentations during the interviews and focus group discussions. However, dealing with communication barrier required the use of an interpreter and Mr Peter Anzaku assisted without making demands and guided me on how to approach certain households with different religious background in Lafia.

1.6 The Study Area



Map 1.1: Map of Nigeria showing Nasarawa State with deep blue
Source: Daniel and Obadiah (2013:572).



Map 1.2: Map of Nasarawa state showing Lafia in red
 Source: Daniel and Obadiah (2013:572b).

The Map 1 above shows the proximity between Nasarawa State and the Federal Capital Territory (FCT), Nigeria making Lafia, the capital of Nasarawa State, a transit town. Lafia connects the north central to south central of Nigeria and is the image maker of Nasarawa State. Lafia serves as the gateway to Benue State and Plateau State in the north-central part of Nigeria with the population of 330,712 (NPC 2007 as cited in Ayuba 2014:134). A peasant town, with traders and civil servants, has the dominant tribes to include Kanuri, Gwandara, Eggon, Alago and Hausa (Ogah et al. 2014:46). The trading in Lafia as a way of life can be significant in the modernization and expansion of the economic sphere leading to the influx of population from neighbouring rural and urban areas to the state capital to make a livelihood increasing the challenge in solid waste management.

1.7 Analytical Framework

Political Economy of Socio-Environmental Change

This study will analyze the concept of public-private partnership in solid waste management using Bakker's work on the Political Ecology of Water Privatization (2003). This lens is relevant in informing policy-makers and analyzing decisions, the economic, social, and the political processes in public

service delivery situating it in the PPPs debate. In particular, political ecology as a lens combines the concerns of ecology and political economy, problematizes issues, and seeks to understand the phenomenon and change it. Bakker work is important in clarifying the transformation in solid waste management and analyzing the political, economic and ecological processes that support marketization of household solid waste (Bakker 2003:36). The approach draws on the extensive political economic analysis of the privatization of public services and the restructuring of state functions (Bakker 2003:52). Bakker views the norms in water management (in this case solid waste) ranging from allocation and supply to corporate control, as

being ceded by the state to private companies, decisionmaking mechanisms are increasingly market oriented or market mimicking, and (to a somewhat lesser extent) decisions about water allocation are increasingly being made via the market rather than (or alongside) public policy mechanisms (Bakker 2003:36b).

Bakker's lens (Bakker 2003:40) is useful in explaining the justification for the emergence and influence of market, the re-theorizing the regulation of waste, the components of waste and the cultural practices involved in waste management. The approach by Bakker is useful in understanding how socio-environmental change is co-produced by state institutions through the regulatory mechanism of PPP.

The design of the PPP program, the participation between the institution, the private companies and citizens are dependent on level of actor's collaboration and the private arena is critical in determining how PPP contributes to urban development and human satisfaction (Harding 1990:110 cited in Osborne 2000:11).

However, the use of the term "private" in current debates implies the corporate control by profit making private companies but not "private" management by local communities (Bakker 2003:38). The market has a limit in the management of the environment due to the "peculiarity in quality, externalities, common property problems and the public goods nature of the environment" (Post 2004:25b).

Though private responsibilities existed in the past as public functions without charges, some scholars have argued that the meaning of PPP is

context specific, with hegemonic features and lacks essential aspects in the design of policy documents (Rosenau 2000:12; Pongsiri 2002:487). The discourse on partnerships in policy and scholarly articles has also been on participatory governance between the public and the private sector to introduce changes in public service delivery (Post et al. 2004:22; Ogu 2000:103).

Deregulation was introduced in the 1970s and 1980s due to “low accountability, political interference, less efficiency and neglect in the performance of public sector roles” which lead to “downsizing of government, policy decentralization, outsourcing of public services and privatization of core public sector” and changes in governance (Rosenau 2000:4). The debate on partnership has focused on problem-solving where there is an inadequacy in public service delivery through synergy between the public, private or non-governmental organizations to harness competency in achieving a socio-environmental goal.

Chapter 2 Literature Review

2.0 Introduction

This section of the research paper reviews research work on waste. The different components in waste, materiality base on value and rationale for managing waste. Contextual meaning and relevant usage of waste were identified in the study with the drivers of development in waste management. The provisioning of waste management service which hitherto was offered as social welfare service, the transformation in institutions and organizations that shaped waste management provision through markets mechanism (Bakker 2003:36b). The concept of public-private partnership was reviewed with the contestation in meaning, adopted as an opportunity for government and as the alternative to public policy. Also, the transformation in the governance of partnership in service delivery and the ceding of corporate control to the private sector was examined. Again, sustainability in policy, commodification and the mix of environmental concerns with the economic aspect in achieving efficiency as co-produced by decision-makers and as factors for enhancing service provision.

2.1 The Materiality of Waste

Waste is known as materials from home or industry that cannot be prevented but has lost the primary economic value and meant to be discarded (Rouse 2008:64; Sridhar 1996 cited in Sridhar and Hammed 2014:195). As stated by McDougall et al., waste is a by-product of human activity, with important property in the inverse relationship between the degree of mixing and value. It is marked with the lack of value when not separated, but the value increases when separated making the physical components of waste materials similar to that of useful products (McDougall et al. 2008:1). The usage of the concept “waste” is context specific as in Russia where waste is synonymous with material that is meant to be re-used (Sridhar and Hammed 2014:195b).

Waste can be classified base on the physical state, its original use, the material type, the physical properties, its safety level and base on the origin

(McDougall 2008:2). Materials like papers, plastics, bottles and metals processed into either spoon, plate, usable bottles and pots. Besides, waste varies in its physical state, it can be liquid, gaseous or solid and is produced from domestic, agricultural and industrial activities (Sridhar and Hammed 2014:195c). For the purpose of this research, solid waste is the focus since other kinds of waste cannot be managed using the same method.

Waste has major components such as carbon, phosphorus, nitrogen, sulfur and heavy metals like mercury, lead, minerals, cadmium and manmade synthetic chemicals contributing to environmental degradation, poor health, disease or even death (Sridhar and Hammed 2014:197). At the solid state, waste includes household refuse, market waste, waste from yard and street sweeping, non-hazardous solid waste from industry, commerce and even institutions (Schubler 1996:18). It is one of the most important by-products that generates from urban lifestyle, but much faster than the rate of urbanization (Hoornweg and Bhada-Tata 2012). Whether as the unwanted primary product or the transformed secondary raw material, waste provides a means of living yet a visible problem due to increasing quantity and constraint in institutional, technical, economic, financial, and social capacity to its effective management (Ogawa 2000 as cited in Manaf et al. 2009:2902).

The management of solid waste has high political profile due to the physical contact of the general public with waste and household waste being the hardest source to manage effectively due to its diverse range of mixed materials but varying seasonally and geographically (McDougall et al. 2008:2b). Studies on SWM in developing countries have been framed on two main discourses being the increasing complexity and costs of waste management and the environmental impacts of growing waste flows (Baud 2004:4).

Waste when poorly managed, has an impact on the economy, health, local and global environment due to its components and when improperly managed trickles down-stream through higher cost (Hoornweg and Bhada-Tata 2012). As stated by Rachel Kyte, Vice President of the World Bank, globally, the cost of managing solid waste (SW) will increase from \$205.4 billion annually to about \$375.5 billion in 2025, with a severe increase up to 4-fold and 5-fold in low-middle and low-income countries respectively. Solid

waste (SW) is a large source of methane with fast growing global impact and when uncollected locally, contributes to air pollution, flooding and public health problem like diarrhea, respiratory infections and dengue fever (ibid).

Wilson identified diverse groups of development drivers for waste management from formalized waste collection systems emerging in the nineteenth century with concerns over public health, environmental protection in the 1970s to eliminate chaotic disposal, climate change and resource value of waste in developing countries. He noted that in developed countries, waste management is driven by the move from 'end-of-pipe' to a holistic resource management and concerns over institutional and responsibility issues and public awareness (Wilson 2007:198). Again, waste management is driven by safety hazards and health problem for solid waste workers and sustainability (Baud 2004:4b; McDougall et al. 2008:3).

SWM involves the collection, storage, transportation, processing, treatment, recycling and final disposal of waste (Rouse 2008:64). It includes objectives setting and long-term plans establishment, budgeting, implementation, programming, operation and maintenance, monitoring and evaluation, cost control, revision of objectives and methods (Schubler, 1996:18). Sustainable SWM requires a holistic approach to the control, monitoring and regulation of the production of waste through minimization, prevention of waste production through in-process modifications, reuse and recycling of materials before disposal (Sridhar and Hammed 2014:197b). According to McDougall (2008:10), options for waste management follows the hierarchy of source reduction, repeated use, recycling, composting waste to energy, incineration without energy recovery and landfill. However, the use of waste management hierarchy in determining the preferable options does not directly reduce environmental burden nor promote economically sustainable system.

The major challenge in the management of SW has been in urban areas, rapidly growing cities and towns, particularly in developing countries and globally (Sridhar and Hammed 2014:197c). As an important municipal service, SWM takes the largest budgetary item in lower income countries (Hoornweg and Bhada-Tata 2012b). The pivotal view on PPP has been on the "political

attractiveness” that influences decisions towards adopting PPP in waste management (Valila 2005:95). Achieving efficiency in HHSWM requires application of the sustainability principles and not only economic efficiency.

2.2 Public-Private Partnership

The concept of Public-Private Partnerships (PPPs) was first introduced in the United Kingdom in 1997, as an effective way of delivering value for money, in public infrastructure and services (Ke et al. 2009:1077). It extended in scope in the 1980s, as a market approach and was promoted as an instrument to increase governance effectiveness in sectors like health, human rights, security, sustainable development, finance and development but differs in the institutionalization and the degree of permanence(Chan and Mert 2012:3). The concept of PPP has been a contested one in public policy globally as a “technical tool,” a “technical phenomenon” and a “rhetorical framing device for governments” (Hodge et al. 2010:4).

PPP as a buzzword in public management is synonymous with contracting out and privatization but used under a different and more catchy name in advancing same policy (Hodges and Greve 2007:547; Savas 2000:1). As a phenomenon and a target of service delivery options in debates, the area of convergence centers on PPP as the contemporary form of mix governance between the public and private sector and social organizations. Also, in the political framing and policy instruments, PPP is seen as a political brand that evokes meanings, emotions and attracts supporters (Klijn 2010:68).

PPP promotes leverage investment, expertise and efficiency of the private sector in the delivery of public services that hitherto were solely provided by the public sector (Grimsey and Lewis 2002; Hodge and Greve 2007:546; Brinkerhoff and Brinkerhoff 2011:3; Alam et al. 2014:422). Though a public policy delivery tool, critics view PPP as a language game in political communication (Hodge et al. 2010:4b; Hodge and Greve 2013; Boardman et al. 2015:442). Arrangement in PPP includes issues of efficiency, accountability in public service and infrastructural projects delivery, removal of infrastructure off government balance sheet to have a better value for money through efficient and timely performance (Hodge et al. 2010:10).

The fundamental assumptions on the concept of PPP focus on the transfer of risks and relieving budgetary pressure on government (Hodge and Greve 2007:548). Indeed, proponents of PPP emphasize on the concept as a mechanism for cost effectiveness and sustainability in delivering state functions (Ngowi 2006:5) base on the mutual commitment between the public and private sector organizations (Brinkerhoff and Brinkerhoff 2011:3 Backstrand 2012:176). Though the use of PPP cuts across various sectors, claims from advocates in the development sector are geared towards “participatory development” or a “bottom-up approach” (Manzuk 2008:1) and social justice in the mode of delivery (Manzuk 2008:7).

PPP is considered as an effort that contributes to planning and resources needed to accomplish a mutually shared objective between the public and private sectors sustainably (Capital 2010). However, the sustainability in PPP is unclear in the management of the environment as nature is too complex to be compressed and quantified. Jacobson and Choi have argued that local partnership is more viable when it promotes stakeholder participation in community planning and integration of local modernization that leads to social inclusion. The authors supporting claims highlight that partnerships require joint vision objectives, resource needs, performance measures, and identifications including regular monitoring of targets and streamlined process improvement (Jacobson and Choi 2008).

The purpose for which PPP is adopted differs due to rational, economic and sector that is prioritized for service delivery (Bonvaird 2004:202). PPP is either to enhance efficiency and effectiveness, provide integrated resources and solutions in addressing a problem or for actors to compromise for a win-win situation and to maximize representation and democratic processes for sustainability (Brinkerhoff and Brinkerhoff 2011:5). Also, the value that the private sector can add to PPP services is mainly from specific ownership structure of assets, the bundling together of service production and provision and risk sharing (Valila 2005:99). An unanswered question remains on the extent to which public involvement can actively improve the efficiency of PPP in service delivery (Boyer et al. 2016:48).

According to Linder, PPP is a concept with multiple meanings and concealed intentions on commitments and value. Also, the changes in PPP appears in three categories as in the separation between the public and private on "economistic ground," the political influence over "values and commitment" and managerial reforms base on "flexibilities and innovation" (Linder 1999:35-39). The consideration of PPP by the government in delivering of HHSW collection service in Lafia rest on the need for a new option to provide efficient and quality service to the public. Though the goal of attaining effectiveness and efficiency in public service delivery drives the innovation, the general performance of private and public sector can be optimized when measured over time and when the entire PPP process is evaluated base on outcome.

2.3 PPP and Governance

PPP is a democratic tool that promotes accountability, representation, transparency, and participation in governance (Backstrand 2012:166; Jacobson and Choi 2008). Governance in PPP is an efficient approach to evaluating public service performance, a subsidy to leverage financial risk and a market-based approach with an economic incentive (Savas 2000; Hodges and Greve 2007:548b). There are governance indicators for the PPP. These are the cooperation between institutions service delivery, the collaboration for execution of long-term infrastructure contracts (LTIC), the public policy partnership, civil society and community development, and urban development and economic development (Hodge and Greve 2007; Hodge et al. 2010:5). Governance in PPPs involves contracts, public-private competition, franchises, vouchers, divestment, withdrawal, and voluntary action (Savas 2000b; Li et al. 2005). The policy maker decides on the aspect that will generate efficiency gains to adopt.

The purpose of PPPs governance can be either from the statist position, ensuring the protection of the public interest or from the innovative and risk transfer stance to enhance public interest (Skelcher 2010:292). Similarly, governance in PPP can be in different categories. First, it can be legal governance with legislative framework and constitutional norms for parties. Second, it can be regulatory governance with a focus on legal and contractual

obligations. Third, PPP can be in corporate governance, dealing with the procedures in decision-making and performance control. Fourth, the democratic governance being the most emphasized (Skelcher 2010).

However, PPPs remains problematic as participation in governance arrangement privileges the more powerful actors and has a weak mechanism for accountability (Chan and Mert 2012:1; Backstrand 2012:174; Brinkerhoff and Brinkerhoff 2011:5b; Boyer et al. 2015:45). Therefore, an efficient and comprehensive performance measurement of a project or service provision should be in the process of implementation and the outcome over a span of time (Liu et al. 2014:503).

On the other hand, the long-term contractual arrangement in PPPs which future generations are “forcefully” placed in by current government remains a serious challenge in democratic governance (Hodge et al. 2010:1), and policy promises more optimistic than reality (Hodge et al. 2010:10). Pattberg, therefore, argued that private governance in world politics should extend beyond private cooperation to achieve set objectives but should include shared norms, principles and roles of partners and the public (Pattberg 2005:606). There is the absence of the social aspect in the governance of PPP which conforms with the contemporary emphasis on PPP as “ambivalence and misleading language” (Wettenghall 2010:17).

At the transnational level, PPP is regarded in political economy as neoliberal policy instrument of decentralization that reinforces privatization, marketization, and commodification of global governance. While the democratic theorists argue that transnational PPPs lacks the principle of democratic governance, the realist sees hegemony in the global democratic governance of transnational PPPs and the critical economy claims PPPs discourses promotes good governance and democratic participation (Wettenghall 2010).

2.4 Models of PPP

Source	Meaning of PPP
Canadian Council for PPP (2007) cited in Ke et al. (2009:1076-1077)	“A cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards”. The Canadian Council provides a framework where PPPs categorizations are based on the extent of participation by the public and private sector and the degree of risk that is allocated
The World Bank (2009) quoted in Duffield (2010:189)	PPPs agreements covers management or service contracts to full privatization or divestiture, intermediate leasing, concessions over state-owned enterprise with long-term management or the provision of components of service operation and new infrastructure
The Asian Development Bank(ADB) (2008:27) cited in Duffield (2010:189b)	The Asian Bank provides clarification on “ideal” PPPs contract types which are service contract, affermage or lease contract, management contracts, concessions and joint ventures, and build –operate or transfer but excludes privatization

Table 1: Rationales for the Framing of PPP by Practitioners

Source: Author's Fieldwork (2016)

There are various spectrums of PPP models that are defined by researchers and practitioners, but the scope of emphasis within PPP construct signifies the aspect that is prioritized and frames the complexity in management of public services and infrastructure. A compromise in the scope and contract type can generate a better outcome for policy makers in government who are more interested in improving the quality of public service provision through PPP. Hence, the adoption of PPP has to be suitable to the cultural context of the society for a better outcome (Duffield 2010:213). It could be a formal and informal arrangement between private firm(s) and the collaboration in bearing the financial burden (Bland and Overton 2016:419). PPP can also provide comparative advantages for business, the civil society and governments (Brinkerhoff and Brinkerhoff 2011:2).

However, Dryzek (2010) noted that competing arguments and discourses on PPP remain questionable, and the arrangement marked with coercion and power asymmetries between actors, leading to a distortion in the conveying of information and rational discourse (Cited in Backstrand 2012:174). Moreso, negotiations on PPPs are often concentrated on the inclusion of business actors into the decision-making process (Mert and Chan 2012:26).

Unequal power relation and conflicting interest undermine the legality in the contract terms (Hodge et al. 2010:8) raising the constant concerns over the balance of public and private benefits generated from such partnerships (Brinkerhoff and Brinkerhoff 2011:2). Therefore, having a balanced representation of interest entails professionals from the private and the public sectors trusting the decisions and behaviors of service users and the communities in which they live but not dictating to them (Garvin and Bosso 2008:856). The household being the main service user in the pilot PPP in Lafia can be significant in the sustainability of HHSWM service when involved and allowed to influence the process from the designing of the policy to the implementation.

PPP involves the transfer of significant risk to the private sector in an integrated nature and optimizing the risk allocation with the biggest value generator, but risk management by partners remains the critical condition for the achievement of PPP objectives (Hodge and Greve 2007:546; Hwang 2012:424). Notably, the typology of risk in PPPs infrastructural project includes technical risk, construction risk, operating risk, revenue risk, financial risk, force majeure risk- involving war and other forms of disaster and acts of God. Also, regulatory and political risks, environmental risks and project default from combining other types of risk contributes to project failure (Grimsey and Lewis 2002:111). The duration of the project, on the other hand, can alter the risk (Grimsey and Lewis 2002:109).

Sometimes countries adopt PPP depending on the need for fiscal deficit, budgetary pressure, demand and supply gap, and inefficient public services infrastructure (Hwang 2012:424). Others choose PPPs to achieve efficiency in operations, for innovation in technological and managerial skills, and to be more actively involved with the engagement of actors in the private sector in

public services (Chowdhury et al. 2011; Valila 2005:99b). PPP has evolved over time, from being a policy option for governments in public administration to the preference in policy framing in government (Smith 1999 cited in Boardman et al. 2015:441).

The PPP service and infrastructure provision often introduces payment for services by the users where it was originally free (Boyer et al. 2015:46) and covertly through higher prices rather than open payment through taxes (Savas 2000:8). The imposition of user fees on the public by the private companies is to recover the cost of financing of projects (Valila 2005:99b). Sustainability in PPPs can be achieved when citizens involvement becomes instrumental in the designing and implementation of services and projects (Boyer et al. 2015) and collaboration through innovative approach such that communities are part of the consensus model (Roberts and Siemiatycki 2015). With the difference in the perspectives of scholars on PPPs, decision-making becomes problematic depending on the model adopted in policy-making (Backstrand 2012:169).

2.5 Sustainability

Sustainable development, a contested concept of mainstream development was introduced into policy circles in 1987 after the Brundtland Commission report on global environment and development (Redclift 2005:65; Castro 2004:196). Sustainable development became widely promoted as a new name for progress after the Rio Summit in 1992, the UN Conference on Environment and development (Castro 2004:197). As an “underlying code” in development, sustainable development was identified with behavioral change, minimal impact, reduced consumption, climate chaos, personal blame, localism, intrusiveness, collective guilt, ethical intervention and public conformity (op.cit.). In reality, sustainability involves innovation in addressing existing institutional arrangements (Bromley 2007:18).

Sustainable development is an approach to “meet the needs of the present generation without compromising the ability of future generations to meet theirs” (McDougall 2008:3b). Practitioners define it to fit with their activities. like the World Bank's definition being “development that last” (as cited in Castro 2004:200). Though sustainable development has been a

response to environmental concerns, the framing of the concept with economic analysis neglects basic aspects that promote environmental sustainability (Castro 2004:195). Again, the concept of sustainability has been co-opted by capitalist as a key aspect for accumulation (Misoczky and Bohm 2012:546). Also, the Agenda 21 Agreement otherwise known as the neoliberal agenda provided the market-based approach to sustainable development policy (Castro 2004:198).

Admittedly, sustainable development as a concept has been widely accepted, but on the other hand, it is an oxymoron (Redclift 2005:65), at odds with progress, with hidden danger, emphasizing more on “restraint” and “fear of the future” (William 2015b). The approach to sustainability need not be focused on what would be inherited by the future generation but be integrative, action oriented, exceed technical fixes and socially embedded in the local context (Robinson 2004:369). Enhancing policy formulation through the avoidance of the “imposition of a static goal into a dynamic evolving process” such as the environment is what produces more efficient sustainability (Bromley 2007:679).

Sustainability in waste management depends on the synergy between equality of economic affordability, the level of social acceptance and environmental effectiveness of the system (McDougall 2008:3c). On the other hand, environmental policy requires taking new measures in addressing contemporary phenomenon and not just considering what is efficient for the present generation to pass on to the future persons. Also, the formulation of environmental policy has to be flexible to allow “quasi-automatic updating” of information where earlier ones are extant without undergoing any rigorous legal process to be sustainable (Bromley 2007:678-679).

2.6 Commodification

Understanding the concept of commodification requires the comprehension of what a commodity connotes. According to Marx (1867), commodity is the nested primary value inherent as the properties of an object, it could be the transformed product of an object by human labour for human satisfaction. Marx holds that transfer and exchange of a product base on use

value are necessary conditions to make an object a commodity. Marx noted that the social process of labour and the properties of an object are the significant conditions in commodification process. In the same way, Watts (1999) views commodity as the economic “cell-form” of capitalism with concealed social relations between people but controlled by market forces (Cited in Lind and Barham 2004:48).

Commodification, therefore, involves theoretical and practical management of goods and services as tradable objects (Gomez-Baggethun and Ruiz-Perez 2011:619; Kallis et al. 2013:97; Bakker 2007:544). It is the use of “complex cognitive, analytical, discursive, political, institutional, and material devices in reshaping human-nature relations” (Kallis et. al 2013:99). Commodification becomes a complicated when linked with social, moral, cultural, economic and political issues (Lind and Barham 2004:48b).

According to Kosoy and Corbera (2010), commodification includes an expansion of the boundary of a commodity into the environment which was previously was not tradable (Cited in Gomez-Baggethun and Ruiz-Perez 2011:620). Bakker refers to commodification as contested and transient (Bakker (2005) as quoted in Gomez-Baggethun and Ruiz-Perez 2011:621), a moment and a means for capitalist expansion and accumulation through wage labour (Kallis et al. 2013:98).

The process of commodification is often driven by privatization, commercialization and marketization in a bid to ensure environmental protection (Bakker 2003:54). There have been concerns over market exchange and expansion through commodification. The criticism centers on what should be traded in the markets as all objects cannot be assigned a monetary value. Next is the hidden cost of labour in the capitalist production process rooted in Marx’s work as “commodity fetishism.” Also, the concern over the management of abstract things that were not produced for sale such as land, labour and money as commodities which Polanyi terms as “commodity fiction” (Gomez-Baggethun and Ruiz-Perez 2011:621; Kallis et al. 2013:99b).

Similarly, equity in the commodification process has been criticized since the process does not provide equal access and value to goods and services (Gomez-Baggethun and Ruiz-Perez 2011:622). Commodification

systematically creates an enclosure of the environment for the marketization of HHSWM service that was initially with free access as in social welfare service but now determined by the willingness of individuals to pay for such services. This changes the relationship between the society and nature into that of exchange by assigning a cost to services rendered and trading the value of labour being abstract as a commodity.

The social context of exchanging commodity according to Appadurai (1986) depends on addressing the politics of commodification, the assumptions, social relations and power base on the understanding of the nature of the commodity (as cited in Lind and Barham 2004:49). Private individual's engagement in different kinds of labour independently leads to social division of labour, a complex system that produces commodities. However, in the community that embodies different kinds of labour, the value then depends on the distinction between skilled and unskilled labour, with a higher value given to the skilled labour (Marx 1867). Commodification, as noted by Radin (1996), extends to the exchange value of social reality of material, the quality, the measurement of the value, and assigning a price and trading such value. However, the effect of these indicators extends to social institutions, individuals and places of being commodified and not just the consumption of commodified goods (as cited in Lind and Barham 2004:51).

Chapter 3 PPP in Waste Management: Opportunities and Constraints

3.0 Introduction

The restructuring and transition from the monopoly of public service provision by the NUDB in the collection and disposal of SW to shared arrangement between the state institution and private companies as an emerging phenomenon need be understood beyond the discursive. Institutional actors and policy are important instruments in the transition to PPP and the transformation of public service delivery. The involvement of private companies in HHSW collection introduced changes in method of service provision, the mode of regulation, consumer identity and waste management functions in Lafia. This section is driven by Bakker's notion of marketization that is introduced and promoted by the state into a subsector where it was previously not considered and justified by the inability to cope with specific dilemmas in service delivery (Bakker 2003:50).

Marketization in this context involves the repositioning and devolution of responsibility of state institution from service provision to a supervisory role using market mechanism as the mode of regulation via geographical allocation and setting of the fee. This section addresses the critical role of the state as an active agent in the transition from social welfare service (state hydraulic) to a tradable service (market conservation) mode of waste management (Bakker 2003:55). The changes in solid waste management norms in Lafia, questions the relationship between the state, the market and the public in the pilot PPP arrangement. The repositioning of the state institution from social service provision to an imposition of the socioeconomic factor as a necessity for service delivery is investigated to understand the corresponding impact on the society and the environment in the pilot PPP implementation.

3.1 Institutional Actors in Solid Waste Management

The institutional framework for waste management in Nigeria involves actors at the national, state and local government level. At the national level,

the Federal Ministry of Environment (FMoE) designs environmental policies and collaborates with State Ministry of Environment (SMoE) and State Environmental Protection Agencies (SEPA) on waste management, environmental protection and natural resource conservation for sustainable development (MoE Handbook 1999).

The functions of the FMoE include:

- a. Engineering designs for waste disposal and treatment systems
- b. Giving specification of waste disposal sites with the safety of surface and ground water in focus
- c. Ensuring enforcement standards for adequate sanitary facilities for solid waste disposal
- d. Establishing monitoring of programs, early warning system for waste disposal related problems and clean-up of land-based waste dumps (Adama 2007:106).

To ensure a quality environment that promotes good health the National Environmental Standards and Regulations Enforcement Agency (NESREA) established by NESREA Act 2007 sets the regulatory standards on the environment. NESREA has the responsibility of enforcing compliance with all environmental laws, policies, guidelines, standards and regulations in line with the provisions of international agreements, protocols, conventions and treaties on the environment (NESREA Act, 2007). Nasarawa State Ministry of Environment has responsibilities to design and implement the state policies on environmental management, establish guidelines, standard and monitoring of the environment including solid waste management.

The state MoE collaborates with the FMoE in the implementation of the national policy on the environment (MoE Handbook 1999). Nasarawa State Environmental Protection Agency (NASEPA) established under Edict 16 of 1997 has specific functions to implement. This includes identification of environmental problems such as land degradation and pollution, landscaping and beautification of the environment by planting trees and flowers, registration and regulation of activities of consultants on Environmental Impact Assessment (EIA). The institution engages in sensitization on

environmental problem in schools, markets, communities and general awareness creation on waste management. The staff strength is 16 permanent and 6 casual staff and 13 National Youth Corp Service members (NASEPA official 14/7/16). Nasarawa State Environmental Protection Agency (NASEPA) is the regulatory arm of Nasarawa State MoE, creating institutional environmental management, enforcement of compliance with environmental laws and promotion of environmental issues within Nasarawa State (Director, MoE 13/7/16).

Interview during the fieldwork showed that the Nasarawa State Urban Development Board (NUDB) was established by Edict No. 4 of 1997 and has policy implementation responsibilities. The core functions of NUDB are urban development control, provision of streetlight, construction of urban road, general sanitation and beautification of Nasarawa State. The respondent revealed that NUDB currently under the Ministry of Lands and Urban Development has twelve (12) permanent and thirty (30) casual staff. The Public Health Department of the state institution has the responsibility to ensure clean and healthy environment through urban sanitation, collection and disposal of solid waste within urban areas in Nasarawa State (NUDB official 13/7/16).

It was noted by participant from Lafia Local Government Council (LLGC) during an interview that LLGC is the lower tier of government in Nasarawa state, headed by a Chairman and Councilors who are democratically elected, and empowered by Nigeria Constitution of 1999. LLGC established under military Decree in 1996 functions in the provision of social amenities, construction of health care clinic, construction of primary schools LLGC and remains the closest institution to the people. Social Services and Education Department work in close collaboration with Community Heads in sensitizing citizens on the effects of poor waste handling, its relationship with disease occurrence and the importance of sanitation. The interview revealed that the Primary Health Care Department of LLGC collaborates with NUDB in sensitization and monthly environmental sanitation in collecting waste from the interior part of Lafia (LLGC official 26/7/16).

3.2 Regulatory Framework for Solid Waste Management

At the national level, National Environmental (Sanitation and Wastes Control) Regulations (S. I. No. 28 of 2009) provides the legal framework for the adoption of sustainable and environment-friendly practices in environmental sanitation and waste management to minimize pollution. This Regulation is adopted by state government environmental institutions and includes punishments in cases of wrongful acts. The National Environmental (Sanitation and Wastes Control) Regulations has wide application to food waste from vendors and hotels, industrial wastes and sanitation, and packaging wastes but limited provision for household solid waste. It involves general environmental sanitation matters such as general cleanliness, citizens' obligations, duties of owners and occupants of premises (NESREA Regulations 2009).

Nasarawa State Environmental Sanitation and Waste Management Regulation (2006) has primary objective of general sanitation with obligations for owners, tenants and occupier of buildings to provide covered waste bin and plastic bags for waste disposal. Waste reduction being an important aspect of solid waste management (McDougall 2008:12) is not included in the regulation. Section 24(4) of Nasarawa State Environmental Sanitation and Waste Management Regulation (2006) states “no person shall fail to pay for the services of an accredited waste manager or produce on demand by the Board or other person or body acting on its behalf, evidence of such payment”. The decision on payment for waste collection and the use of accredited waste manager had been made since 2006 before the involvement of stakeholders and the public on the implementation of PPP in 2012.

Another policy instrument for environmental sanitation is the Northern Nigeria Public Health Act of 1963, which has provision on how owners and occupier of household shall clear rubbish and refuse from the streets, drains and surrounding environment. It considers accumulation or deposit of rubbish of any kind as nuisance, but the aspect of minimization at source and collection of such refuse from the various household and the environ is missing in the Act producing less effect in sustainable waste management (Public Health Acts Handbook 1963).

3.3 Justification for State Intervention in Household Solid Waste Management

The respondent from NUDB mentioned in an interview that waste collection and disposal primarily is the responsibility of NUDB with concern over human health, environmental protection and urban development. The institutional functions are undermined by poor funding, bureaucratic bottleneck, shortage of personnel and lack of adequate infrastructure. Waste management is seen to be capital intensive with difficulty in the release of fund by the government. There is lack of political will to tackle waste management problem. The respondent noted that there is high level of indiscriminate waste disposal and the institution has only 5 trucks to collect waste in the urban area. Also, the capacity of the NUDB could not cover the entire Lafia (NUDB official on 13/7/16).

Also, from NASEPA, the respondent stated during the interview that bureaucratic bottleneck delays the release of running cost for state institutions. He noted that approval for 2016 budget was made in the last week of June 2016, which delays service delivery. The release of fund also takes another series even after producing the memo and passing through the Commissioner in Budget Office. He sees waste management as a serious challenge with heaps of refuse in most public places. He noted that lack of timeliness in the release of fund is a serious limitation in taking care of the logistics for service delivery (NASEPA official 18/7/16).

An official of MoE mentioned during personal interview session that NUDB is not adequately equipped and lacks the technology to cope with waste management. He saw population growth rate in Lafia as increasing at a geometric rate of 2.8% birth rate and 4.4% influx of migrants into the state capital. The respondent revealed that there is no structure on ground to manage waste as the NUDB has no sufficient personnel and equipment to function with. He sees waste is a resource that is misplaced and can generate odour, serve as a breeding ground for epidemic magnitude and for mosquito when uncollected. However, the official stated that though MoE has the responsibility for waste management, in Nasarawa state, MoE does not manage waste but NUDB (MoE official 13/7/16).

The inefficient provision of HHSWM services by NUDB due to poor funding, lack of adequate technology, shortage of personnel and bureaucratic failure created the significant opportunity for the engagement of private companies in the pilot PPP program. A justification for the declining quality of service provision and transition to a new mode of regulation, marked with changes in the governance strategy, to achieve efficient service delivery. The private companies and the state cooperate towards the preservation of capitalism as a socioeconomic system, prioritizing environmental conservation as market opportunity and as strategic necessity (Bakker 2003:44).

The use of the principles of exchange by the market conforms with the mainstream approach to environmental sustainability and the commodification that is associated with it (Castro 2004:201). The engagement of private companies by the state introduced exchange of HHSWM for money in Lafia, and limited access due to high cost was initiated and actively guided by the state. However, other members of the community provide other forms of waste collection services such as scavengers, informal household waste collectors but without much value for their unskilled labour. The unequal value given to unskilled labour raises the concern over equity and social justice.

3.4 The Process of Marketization

It was stated by the participant from NUDB that SWM is an aspect of environmental management that is of importance to NUDB. The volume of garbage keeps accumulating making it difficult for the institution to evacuate waste promptly from public domain. He noted that prevention of environmental pollution and effectiveness in service delivery led to the initial engagement of five (5) private companies in waste management in Lafia though one (1) declined afterwards.

The official remarked that the pilot PPP was started with government workers quarters in 2012 and base on people's response, four private companies were engaged in 4 zones with payment of token by consumers". The companies, he noted, brought in their equipment of 2 trucks and drums for waste evacuation from households. We allocated areas of affluent to private waste companies. No private company was assign to the low-income area.

Citizens are not capable of paying for waste collection in low-income and rural areas since they see waste management as government responsibility. They use informal waste collectors to dispose of their waste (NUDB official 13/7/16).

Similarly, the respondent mentioned that the law on waste management has been the Public Health Act (1963) and Nasarawa State Environmental Sanitation and Waste Management Regulations (2006), but private companies engagement was with the use of memorandum of understanding (MOU). The terms of reference in the MOU provides the framework to regulate private waste managers' activities. The companies are Innovative Waste Management Company, Femi and Mathew Company (FEMSMAT), G-Excellent Refuse Management Services (GERMS), Odamasi Waste Management Venture and KASHMUD.

Odamasi Waste Management Venture dropped out since it could not procure the required equipment being two conventional trucks. NUDB plays the supervisory role and regulates in the Pilot PPP arrangement. The official noted that Pilot PPP program has reduced indiscriminate waste disposal in Lafia. Areas covered by private companies have reduced the pressure on government budget (Phone interview with NUDB official 26/4/16).

The engagement of private companies was introduced as a means to capital accumulation with a clear focus on wealthy areas for exchange of service. The allocation process shows the disparity between the rich and the poor, a process of class accommodation that promotes inequality and limit of access to waste management service designed by the state institution.

3.5 Rationale for Waste Management by Private Company

It was deduced from the responses of private company interviewees that one out of four waste managers was involved in waste management base on his academic background in Environmental Geology while others (3 out of 4) were Accountants. The four companies are involved in waste management as a business, and a means of livelihood creating employment for unemployed youth as well. A participant from one of the companies stated *that business is about making profit, but I cannot disclose my profit margin. I cannot disclose the exact number of my clients. It will amount to increase taxing. There is return on investment but*

challenged by the high cost of fueling without corresponding increase in the charges for our services (Private company worker 11/7/16). There is the lack of transparency in the accountability of companies, concealing the value of labour and the relational process of capital accumulation.

The four respondents, each from a private company confirmed their engagement in waste management after proposing in 2012 and gotten approval from NUDB the same year with the aim of reducing the financial burden on the NUDB. Personal observation confirmed that each company had the MOU by NUDB strategically displayed on the wall in the company's office. The duration to renew the terms of the company's operation was not stated in the MOU. Each company has 6 permanent workers who collect waste, including the driver and 1 auxiliary staff who does the sensitization, marketing and registration of customers.

The respondents also stated that they entered into an agreement with the government on the specification in the MOU for operation and for charges. The fee is flexible. The mode of monitoring and accountability is through submission of the list of registered customers and report of weekly activities to NUDB quarterly. The aim of the meeting is to encourage the companies to be more effective in services delivery and to expand. Each company uses two conventional trucks for waste collection. The truck is covered with net when transporting waste to the dumpsite. The respondents noted that there is no landfill in Lafia. The dump sites are spread in different locations, along Jos road, Akuruba, NTA road and Kwandere road. The risk from indiscriminate dumping is only taken out from public view and is replicated in a different location in Lafia. Thus, waste remains by nature uncooperative and cannot disappear.

Moreover, the responses shows that the volume of waste keeps increasing as new buildings were suddenly developed. There is no measurement of waste, but the increase in volume is proportional to the increase in the number of customers. Waste should not be left for too long without evacuation as this can lead to the spread of an epidemic. House-to-house SW collection was introduced by the private companies with provision of drums for storage in 2012. Each company brought their equipment and

bears the risk, we only share the revenue by paying the annual tariff of 20% to NUDB. Our activities are not monitored but regulated. The only sustainable option to waste management is full privatization (Private company worker 11/7/16).

3.6 Operation of the Market

It was mentioned by a company representative during an interview that waste is collected from households once in a week before 7 a.m. The plastic or metal drums provided for customers after registration is perforated for ease of evaporation and to prevent silting. The drum has the company name on it and is placed outside the premises for ease of evacuation. The mode of operation of the private companies does not give room for direct interaction with customers since the company's drums are placed outside the premises.

The only period for direct contact with customers is when the monthly payment is to be made by a customer, either on the point of evacuation or online. It was noted from the interview responses that private companies charge five thousand (₦ 5,000.00) naira¹ as registration fee and this covers the cost of the drum provided for customers. The monthly fee that we charge our customers is set by government, ₦1,000.00 for one drum, and ₦2,000.00 for two drums. Payment can be made online or on point of evacuation at the end of the month.

Households with drums within fenced premises have to open the gate by 6 a.m. on the day of collection. Each company only attend to registered customers who are prompt in payment while defaulters are reported to NUDB for sanctioning and are disconnected after 3 months but will be reduced to 1 month. The interviewee revealed that HHSW is not separated for fear of increase cost in acquiring more equipment for waste collection. Each company uses 2 trucks in transporting waste to the dumpsite. Compactor truck was introduced for recycling of waste but has been packed for 5 months. In the

¹Naira with symbol ₦ is the currency used in Nigeria

author's opinion, the compactor may have been packed due to a high cost of maintenance and fuelling since there was fuel hike in Nigeria within the stipulated period that the compactor truck was packed. The company has plans to expand into fumigation of government offices in the future. Expansion is a peculiar nature of capitalist accumulation and commodification (Private company worker 11/7/16).



Figure 1: Waste collection drum placed outside the premises
Source: Author's Fieldwork (2016)

3.7 Governance of the Market

PPP is controlled by regulation which goes beyond the application of a set of rules or customs but involves the daily human practice of intervention for monetary exchange and for environmental change (Bakker 2003:50). Historically, conceptualization of regulation in PPP arrangement varies. In the 1930s, it was used in France for the provision of public service and for urban regeneration in the USA and from 1950s onwards, mainly for infrastructure service in Germany (Bonvaird 2010:46). Responses from interviewees shows that in Lafia, pilot PPP has been adopted by NUDB, the state institution for the provision of urban service of house-to-house waste collection, transportation and disposal by private companies. The NUDB regulates private companies operation using the standards in the MOU.

3.7.1 The Transitional Mode

Interview with an official of NUDB (13/7/16) revealed that governance of the pilot PPP in HHSWM in Lafia is marked with the change from Public Health Act and Nasarawa State Environmental Sanitation and Waste Management Regulation (2006) as a policy instrument. The regulatory mechanism by the state centers on the terms of reference in the MOU for the governance of PPP. The terms of reference in the MOU shows the collaboration between the state institution and the private sector with the aim of enhancing private companies operations to reduce the increasing volume of waste disposed of indiscriminately through market approach. However, the use of MOU in the regulation of PPP is known to be relevant in community-based partnerships, where functions are performed not by profit-making organizations but on a voluntary agreement to achieve sustainability (Skelcher 2010:295).

The MOU shows the process of marketization in the provision of HHSW collection service. It is an indication of a change in social relation as consumers get transformed to customers and access to waste collection becomes unequal. There are no terms of reference incorporating sustainability principles of economic affordability, environmental effectiveness and social acceptance measure in the MOU governance document.

3.7.2 Class Accommodation

High Income Areas	Middle Income Areas	Low Income&Rural Areas
Government Reserved Area (GRA)	Bukan Sidi	Rimi Ruku
Millionaire Quarters	Sabon Pegi	Emir Palace axis
Nasarawa Agricultural Development Quarters (NADQ)	Shabu	Angwan Maina
Nasara Housing Estate (NHE)	500 Housing Unit	Akuruba
Shendam Road	Tudun Kwandara	Kilema settlement
	Workers Housing Unit (WHU)	Adjargu and Shinge

Table 2: Categorization of Households in Pilot PPP in Lafia
Source: Author's Field Work (2016)

The Table 2 above shows the findings from the fieldwork on the regulation of pilot PPP in Lafia, marked with a geographical allocation of wealthy areas being the high and middle-income parts of Lafia to the private companies and the low income and rural areas to the state institution for ease of HHSW collection. The table shows the new socioeconomic dynamic employed by NUDB, the state institution for the transition to a new mode of regulation of waste management and ease of operation of private companies which Bakker identified as "market conservation" (Bakker 2003:44). Households are classified base on the level of affluent and poverty in the PPP arrangement, an indication of class accommodation for ease of capital accumulation from wealthy households. It is a means to commodification and marketization that excludes the poor from public service delivery.

Personal observation during the fieldwork showed that there is no category of area that is without some form of open refuse dump in Lafia. The only difference in outcome is the volume of refuse that is visible in a particular neighborhood. Areas of affluent have the significant feature of cleanliness with minimal open dump. The high-income area has the widest area always clean; the middle income area has a mix of the clean and dirty environment while low-income and rural areas have the significant feature of littered environment. The state institution has been significant in the distribution of the good and the bad of the environment through geographical allocation of areas as mode of regulation that excludes the poor from benefitting in the efficiency gains of clean environment from private waste collection. Rather, the state enables increased open dump in the low-income neighborhood and at the same time promotes clean environment for the wealthy class of citizens.

The act of categorization excludes the poor who are vulnerable to health and environmental problems associated with poor waste management

through the mode of regulation by the state institution, showing the inequality, social and environmental injustice that is embedded in the system.

Significantly, the system influenced access to waste collection service, the quality of service, the rate of indiscriminate waste dumping, contributing to the transformation of the physical environment in the different areas of the four zones. The state institution mediated the mode of regulation that sustains the market but not the environment.

3.7.3 Control of Access to Service

Zone	Location
Lafia North	Bukan Sidi, Millionaire Quarters, GRA, Shabu
Lafia South	Tudun Amba, WHU, NHE, 500 Housing Unit
Lafia East	Sabon Pegi, NUDB Quarters, Angwan Yazawa, NADQ, Shendam road
Lafia Central	Shinge, Rimi Ruku, Emir Palace Axis, Kilema Settlement, Angwan Maina, Adjargu,

Table 3: Zoning Arrangement in Lafia

Source: Author's Field Work (2016)

The structuring in Table 3 above shows each zone and the locations classified under a particular zone. The objective of the zoning does not reflect environmental effectiveness. Household waste collection and disposal by private companies are in the north, south and eastern zones. Lafia central is the concentration of households in the low income and rural area, excluded in the PPP arrangement but covered by NUDB. Personal observation during the fieldwork shows two different companies operating in the same zone. The spatial arrangement for each zone has a mix of locations that spreads across the socioeconomic categorization. For instance, NHE in the high-income area, 500 Housing Unit in the middle-income area and Adjargu in the low-income area classified as the south zone in Lafia being the common phenomenon in all the zones.

This implies the mix of areas assigned to private companies and areas allocated to NUDB within the same zone. Again, a combination of registered households as service users, registered households but non-service users, non-registered households and non-included households in the PPP arrangement are found within the same location making the process complex and irrational. Further, each zone experiences both the formal method of waste collection and the improvised method by non-service users and excluded households. The allocation of areas of coverage in the PPP program raises the issue of social justice, environmental justice and the commodification of labour by a willingness to pay rather than the ability to pay.

The zoning arrangement in the pilot PPP program, depict the strategic role of the state in the valorization and commercialization of some part of the environment for waste management and neglecting other parts. Again, the geographical delineation of Lafia for ease of private companies operation is a mechanism that promotes capital accumulation from registration and payment of user service fees by customers and for the state as well from 20% annual tariff paid by each private company.

3.7.4 Standard for Control of Access to HHSWM Service

TYPE OF BUILDING	FEE
Household and tenement	₦ 500
Flat	₦ 1,000
Bungalow	₦ 1,500
Duplex	₦ 2,000

Table 4: Service Charges set by NUDB
Source: Author's Field Work (2016)

Table 4 shows the different category of charges for households in Lafia. Notably, during the fieldwork, there was no household charged less than N1, 000.00. Personal interviews with private company workers during the

fieldwork confirmed that the fee is set under government directive but flexible within range. The registration fee is fixed, but the monthly payment is negotiable. Households are categorized base on the number of persons and volume of waste generated for instance, where the company evacuates one drum, a fee of N1, 000.00 is charged but with two to three drums, N2, 000.00 is charged as the monthly fee. One of the respondents noted that "business is about knowing why you are there and treating customers right to exist." The government is expected to make registration for waste collection mandatory and to penalize defaulters (Private company worker 11/7/16).

The NUDB representative and (4 out of 4) private waste management company representatives confirmed in the interview responses that the zoning of Lafia and the setting of fees was exclusively introduced, and controlled by the state institution. The fee is an allocation mechanism to ease private sector's operation and to promote the market in contrast to the public sector waste collection without payment of fees. It redefined service provision principle, a switch from supply, base on citizens right to that of a commodity that is sold to customers on a profit-making basis of willingness-to-pay, rather than ability-to-pay. The fee charged for waste collection became a principle that justifies waste as a commodity that the collection demands payment by those willing and capable of paying to recover the hidden cost of skilled labour and provision of drums. Anderson and Leal (2001), therefore frames the mode of resource regulation (in this case waste) that uses monetary exchange for both economic benefit and environmental protection as "market environmentalism" (as cited in Bakker 2007:543).

3.8 Enforcement of PPP Program

It was established from interviews with private company workers and official of NUDB that two levels of waste collection service were introduced in 2012 as part of the PPP arrangement. These are the communal collection service with a stationary container and the house-to-house service using plastic or metal drum. The NUDB provides communal collection in rural and low-

income areas where a higher volume of waste is generated from agricultural product using skip bins for waste collection. The house-to-house solid waste collection and disposal is the function of private companies' in middle and high-income areas allocated by the state. Each zone has different private companies assigned to it. For instance, along Makurdi road, GERM waste storage drums are in the right lane of the road and drums for KASHMUD Company in the left lane.

The findings of this research paper shows that enforcement of partnership in HHSWM involves the significant phenomenon of the setting of fee and ensuring the payment by households. It connotes a paradigm shift in governance, from free service provision solely by the state institution to shared provision with the private companies. Participants responses shows the mechanism for enforcement of the pilot PPP program as constructively base on the charges for service delivery, determined by the collaboration between the private companies, NUDB and members of the special task force set up by NUDB. The aim is to ensure economic efficiency and effectiveness in realizing the cost of operations of private companies. It was noted by an official of NUDB during the interview that the mobile court enforces sanction on defaulting service users in payment whenever such cases are presented by the special taskforce. However, the claim was refuted by members of the special taskforce from NASEPA, NESREA, MoE, LLGC and households that the special taskforce on environmental sanitation has been dysfunctional for the past 3years due to non-funding by the state government.

Interview with participant from NUDB noted that after consulting with stakeholders in 2012, NUDB embarked on house-to-house sensitization in the same year on the pilot PPP program to enforce household registration with private companies. Subsequently, private companies register households in areas assigned to them, but NUDB monitors their performance through desk officers assigned to each company. The desk officers from NUDB go to allocated areas for monitoring while the company's liaison officer reports to NUDB monthly. By contrast, interview responses from workers in the four

private companies shows that their activities are not monitored but regulated. The interaction between private companies and NUDB is during submission of the monthly report, which sometimes holds once in a quarter to review weekly operations, and when mediating with defaulting customers on payment of fees.

The state official also mentioned that citizens do not complain of high charges, but that civil servants appreciate paying N1, 000.00 to private companies for waste collection. On the contrary, responses from households during the interview sessions and FGD revealed resistance to participate in the HHSWM due to high service charges. The state institution is the active agent in the transition from state provision of waste management services with free access to commercialized mode of regulating waste management. As noted by Bakker (2003:44b), the arrangement that sustains the market is the opportunity in the PPP program, practically between the state and private companies with the sole aim of preserving capitalism while prioritizing environmental conservation.

3.9 Recognizing the Materiality of Household Solid Waste

Bakker's framework holds that state intervention with public interest by allocating the environment for redistribution of water supply is erroneous and proposed community-based water management as a more viable option for developing countries (Bakker 2003:55c). A rethink of the community-based management option proposed by Bakker requires an understanding of the characteristics of water, and that of waste and how these qualities enable and limits the circulation of these resources in the social life of a community. Bakker gave a distinction of H₂O as circulating through natural process and water distributed through a social process in a complicated network of pipes, meters, water law, garden hoses, quality standards, leaking taps, consumers, runoff and evaporation. Also, demand patterns, exchange relationships, customers' expectations about water quality and pressure, rainfall patterns, national and international laws on water quality, and climate change determines the circulation of water through pipes.

Various factors affect the distribution of water; these are institutions, daily human practices and the natural cycle of water (Bakker 2003:49). Water as a flow resource is a necessity in the hydrological cycle. Besides, it flows in a unified form without substitute in quality and is essential for urbanization and industrialization. However, water distribution is marked with obscurity in establishing boundaries for property rights (Bakker 2003:47). Water has biophysical characteristics that is cheap, but expensive to supply when comparing the quantity that is utilized by individuals in their daily practices with the cost of transporting water, making it difficult to commodify water by the market (Bakker 2003:48).

By contrast, waste is a by-product of urbanization and economic growth that is increasing faster than urbanization and making solid waste an urban issue (Hoornweg and Bhada-Tata 2012:2). Waste cannot cease to exist even after being removed from the primary point where it was generated. Rather, it increases rapidly, even when evacuated to landfills and incinerations. It regenerates and contaminates the soil and the surroundings through emission of greenhouse gas, a more harmful component into the environment (Gille 2007:25; Hoornweg and Bhada-Tata 2012:4). Waste has physical properties that can rot, spoil and even rust depending on the type but other types of waste accumulate and circulate over time, borders and generations with ease, like greenhouse gases causing health challenges.

Hence increasing efficiency in waste management does not directly result in waste reduction without a corresponding decrease in growth rate since the distribution of waste is directly linked with waste generation (Gille 2007:26). The complexity in the circulation of waste involves identification of waste as mixed materials. Also, as a discursive object and of exchange, waste passes through the society though the lack of clarity in culture and poor knowledge of the value embedded in waste and waste models contributes to institutional transformation and changes in social relations (Gille 2007:27). Nevertheless, a holistic concern over waste combines the cultural, materiality

and economy simultaneously (Gille 2007:28). An understanding of the unique nature of waste within a given community is necessary for determining how waste can be managed, transformed and recycled (Gille 2007:29).

Household solid waste is typically generated in residential areas and readily a physical characteristic in public spaces in Lafia due to population increase, at a geometric rate of 2.8% as birth rate and 4.4% as influx rate (MoE official 13/7/16). Personal observation during the fieldwork in Lafia and responses from participants in FGD and interviews shows that waste stream from households in Lafia comprises of food remains, old clothing, electronics, plastics, glass, agricultural waste, metal, wood, ashes, polythene and papers from packaging. HHSW is also collected and disposed of in diverse ways informally and with the regulated method of collection. Items such as basins, buckets, polythene bags, refuse bins and sacks are used in storing and disposing waste. At the formal level, waste is disposed with the use of skip bins, drums and trucks. The use of trucks by the state institution and private companies in transporting HHSW regenerates waste at increased volume through emission from increased number of trucks into the environment. Hence, the formal practice of disposing waste is unsustainable.

At the informal level, waste remains a valued resource to individuals and is used in different ways like old clothes given out to relatives, old electronics sold out in tokumbo shops, agricultural waste buried in a constructed pit or heaped within the premises to decompose and taken to farm as fertilizer. Also, scavengers pick valuable metals from dumpsites which they sell to intermediaries in Angwan Dadu, Lafia, who transport the metals to either Kano state or Kaduna state for recycling. Again, at the approved dumpsites, individuals level the dump heaps and cultivates maize which is sold out in the market to make a living. Conversely, the dumping of a mixture of the household waste stream in public spaces becomes a nuisance, a disorder and a political concern requiring the use of law and change in institutional arrangement through partnership with private companies in controlling waste flow.



Figure : Scavenger picking valuable materials from bola

Source: Author's Fieldwork (2016)

As a nuisance in public space, waste sets the new order for state intervention, commercialization, and regulation of HHSW collection service by setting user fees and allocation of wealthy areas to facilitate the market. The state promotes the economic efficiency that goes with skilled labour from private companies. There are concealed cost in the provision of drums to households, the cost of fueling of trucks embedded in service charges.

The different practices by individuals shows the utilization of waste base on the value that is derived from either the natural or transformed nature of waste and without payment. The cultural practices also reveal the meaning of what is known as waste in Lafia, the social relation that exist and the difficulty in setting a fixed standard to commodify waste. However, these practices in utilizing waste by individuals have contributed to waste reduction in an environmentally and socially friendly way. Hence, the convergence in the management of water and waste centers in the resistance to commodification by the nature of waste and water, the resistance of individuals to payment for the supply of these resources, and the rate of utilization, as both are socially and temporally dependent on human intentions within the community where the resources are circulated. Therefore, community-based management remains a more viable option for water and waste, in their production, distribution and consumption.

Chapter 4 Participation and Access to Service Delivery

4.0 Introduction

Lack of proper waste management technique, the attending effects of poor waste management on human health and the environment (Bassey et al. 2015), and the need to achieve efficiency has driven the adoption of PPP by policy makers. The dimension in which PPP is conceptualized has shifted from contested to prevalent practice in diverse sectors of a given system (Bonvaird 2004). However, the intentional selection of affluent neighborhood and the classes of consumers for private companies' service provision has limited the private companies from extending their service coverage to the poor in Lafia. The high service charges influenced the level of participation of household, the willingness to pay and the ability to pay for HHSW service under the pilot PPP adopted as a mechanism for public service delivery.

The context in which waste is valued, and various practices by individuals in utilizing and reducing waste circulation is examined. The hidden cost in the economic efficiency of private companies' service provision and the transformation of the state is the focus in this section of the research paper. In all of this, the state remains the 'enabler', a 'co-ordinating agency' in facilitating the market for urban development (Baud 2004:2b). However, the role of the state in service provision and fixing of charges has implication on the level of participation and improvement of the environment and health for different classes of citizens. Hodge and Greve (2007:545) argue that the rationale of effectiveness of PPP contradicts the outcome when evaluating a long-term contract. Failure to include all citizens and interest in the HHSW collection and waste in public places threatens environmental sustainability and human health.

4.1 Level of Household Involvement

ZONE	NO. OF REGISTERED HOUSEHOLD	NO. OF HOUSEHOLD AS SERVICE USERS
Lafia North	2, 530	530
Lafia South	1, 500	700
Lafia East	6, 150	760
Lafia Central-commercial centre	No statistics	No statistics
Total	10, 180	1,990

Table 5: Registered Households and Users of Private Waste Collection in Lafia

Source: NUDB Public Health Department, Lafia

Base on an interview with NUDB official, it was confirmed that stakeholders were involved before the concession and commissioning of private waste companies in 2012. Stakeholders were drawn from different sectors including community leaders (Mai Angwa)², Federal Road Safety Corp, MoE, NESREA and NASEPA. The community leaders were assigned with the responsibility to advise their ward to register with private companies for waste collection. Discussions also were on the reduction of indiscriminate waste disposal in public places but not at the point of generation. Areas of affluent were allocated to private waste companies, but no private company was assigned to low-income areas. The official's perspective on the performance of private companies in the pilot PPP program was in consonance with the views of households, both service users and non-service users that PPP has reduced indiscriminate waste disposal drastically. There is the intention by NUDB and the private companies to privatize HHSWM fully (NUDB Official 13/7/16).

It was deduced from interviews with households that the intention to privatize HHSW fully is not in the interest of the public as service charges by private companies are too high to cope with. Also, that privatization of waste collection would only be appreciated when cost recovery is not embedded in the service charges. On a similar note, it was mentioned that there was no awareness nor involvement of households in the designing of the pilot PPP program. Announcements over the radio and television on waste management

were focused on “stop dumping of refuse in waterway to prevent flooding” as Lafia is flood prone area in Nasarawa State

I know of the PPP program, but MoE was not involved in the process. There is no collaboration between MoE, NASEPA and NUDB. NASEPA is an organ of MoE and is supposed to implement MoE policies. Waste reduction is the primary aspect of waste management using Polluter Pays Principle (PPP). The MoE is waiting for approval from the government to implement this PPP program. We want practical application in the field. The program will use unskilled labor, tax primary polluters being industrial producers for environmental damage and not households. The intention is to use recycling plant not scavengers in the separation of degradable and biodegradable. Biodegradable will be bag and sold to the public as fertilizer when the program commences (MoE official 12/7/16).

A follow-up interview was conducted with NUDB official for clarity on the lack of collaboration between complementing public institutions in the pilot PPP program, the non-involvement of the community leaders and the public to reflect their interest in the designing of the program.

Those community leaders may not have been involved, but stakeholders were drawn from different sectors and community leaders were informed and asked to encourage their wards to register with private companies before the commissioning of the private waste management program. There is no conflict of role. The MoE is the policy formulating institution on the environment, NASEPA is the regulatory institution while NUDB is the policy implementing institution. We collaborate with NASEPA in sensitization of the public on the environmental impact of indiscriminate waste disposal and with LLG in the evacuation of waste in public places (Follow-up interview with NUDB official 28/7/16).

2Mai Angwa is the title for community leaders in the northern part of Nigeria

The conflicting interest of complementing institutions and lack of collaboration in the framing of policy as indicated by interviewees from the public sector has been a challenge to effective participation of public sector officials in the partnership program.

The interview response from MoE official confirms the complexity in collaboration due to partners roles in public service (Boyer et al. 2015:45c). The designing of environmental policies cannot be sustainable when the interest of the society and environment does not override the interest of policy makers. The response from the follow-up interview with NUDB official raise the question of “how much of an impact citizens can have on some of the complex and technical dimensions of public-private collaborations?” (ibid). The designing and implementation of the program questions the social inclusiveness and sustainability of PPP policy in Lafia as the state institution remains the main agent collaborating with private companies to conserve the market through the bureaucratic decision-making process.

According to La Porte (1994), the exchange in the relationship, demand, and expectations of customers on the quality, pressure, laws, institutions and waste practices are co-produced, physically and socially (Bakker 2003:49). Again, Escobar (1995) noted that development is “a top-down, ethnocentric, and technocratic approach” where public participation is required, [.....]5, not necessarily to empower the people or to question the objectives of a project or program. Rather it was to explain to the people what those targets are and to ask them for the best way of achieving those goals (Castros 2004:208).

5Some text omitted from the quote by the author

4.2 Level of Participation of Household

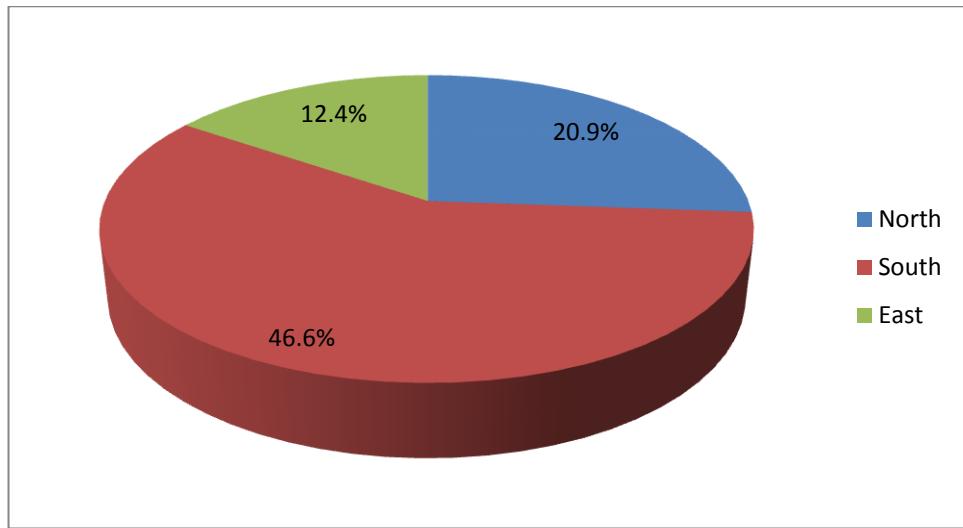


Chart 1: Percentage of private service users in each zone in Lafia
Source: Author's Field Work (2016)

The Chart 1 above also shows the low level of participation by households in the pilot PPP program. Only 20% from Lafia North, 12.4% from Lafia East, 46.6% from Lafia South are service users but none from Lafia Central zone. The state systematically excludes the poor in low-income and rural areas through the zoning arrangement. This makes the environment in poor neighborhoods significantly littered and vulnerable to health effect of poor waste handling. Changes in the provision of solid waste services must not only be based on “cost efficiency and service effectiveness”, but to ensure sustainability, considerations must include issues of equality in access, broad coverage, affordability, and environment (Baud 2004:3b).

The percentage of service users on Chart 1 also shows the lack of mandatory participation by households located in high and middle-income areas allocated to the services of private companies. Sustainability of waste management policy can be effective when the objective supports and strengthens the local participation of communities (Assembly 2015:23). In developing countries, community-led resource management is more practicable

than the state-led development models that impose control over local resources through allocation (Bakker 2003:55b).

4.3 Formal and Alternative Waste Management Practices in Lafia

PUBLIC SECTOR	PRIVATE SECTOR	NON-SERVICE USER HOUSEHOLDS
<p>*Storage in Skip bin</p> <p>*Collection with truck</p> <p>*Disposal in temporary dumpsites</p>	<p>*Storage in perforated plastic or metal drum</p> <p>*Collection with truck</p> <p>*Disposal in temporary dumpsites</p>	<p>*Throwing into flowing water in drainages</p> <p>*Open burning</p> <p>*Dumping in farmland</p> <p>*Open dumping in “Bola”</p> <p>*Burying in pits</p> <p>*Use of informal waste collectors</p> <p>*Recycling</p>

Table 6: Waste Management Practices in Lafia

Source: Author's Field Work (2016)

It is not possible to find refuse heap around this environment. I do not generate much waste. Poor waste management technique is common where poverty and illiteracy abounds. Poor people do not know the environmental impact of improper waste disposal. The government has to develop individuals so they can be responsible for their waste.

There was no consultation in my area before implementing PPP on waste management. Only had contact with a marketer from a private company who requested that I should register with N5, 000.00 and pay monthly fee of N1, 000.00 that is excessively expensive. Children come here every two days to sweep and pick waste for a token of N100.00. The children are less than 10 years. I have no idea where they drop the waste. Certainly, it will not be in this environment. Full privatization will be more exploitation. Construction of pit at the household level and the community level with the use of informal waste collector can be a modern technique (Interviewee High-Income Area 22/7/16).



Figure 2: Children providing informal waste collection service in high income area within GRA

Source: Author's Fieldwork (2016)

FGD and interviews with households in the four zones and rural part of Lafia revealed the rationale behind the resistance to the commodified waste collection and the attractiveness to the alternative methods of collecting and disposing of household waste. Responses from participants during the fieldwork gave the insight into the various HHSWM practices in Lafia. When waste is uncollected, it is unhygienic. It can cause air pollution from the emission of offensive smell. It can even lead to death. The government is not helping us. There is no dustbin around this area. There is no civil society to defend our right. Lack of political will is killing the system. Paying for waste collection will be difficult. The government should provide dustbin in all the streets in Lafia (FGD Low-income area 18/7/16).

Interactions during the FGD show the disposal pattern by households in public places. These are throwing of HHSW into flowing water, dumping in the bola, burning during the dry season and dumping in undeveloped plots. The accumulation of the various practices makes indiscriminate waste disposal visible in most part of Lafia. Participants mentioned that NUDB distributed forms in 2013 for households to pay ₦1, 500.00 as monthly charges for waste collection but it was rejected. Paying that amount for waste collection is exploitation. Our income level is quite low and has been cut down by 50% leading to the industrial action in the state. There are two options available, the use of the skip bin provided by NUDB for the entire estate or the private collection by a company with the payment of ₦2, 000.00 monthly after the initial registration with ₦5, 000.00. The alternative method of disposing solid

waste is cheaper when compared with the payment of ₦7, 000.00 to a private company. Privatization of waste collection is a form of exploitation. Investing for 10 to 15 years without cost recovery will be appreciated (FGD Middle-income area 14/7/16).

Households have not widely accepted the introduction of marketization by NUDB in waste management. The various practices in public places have been enabled by the state through zoning arrangement that excludes the low-income areas. Prioritizing economic efficiency without equitable access to service delivery promotes inequality and the socioeconomic mode of regulation by the state creates the standard for class accommodation. Other factors are high service charges, unwillingness to pay and non-mandatory enforcement of participation of households in allocated areas. The resistant to participate by households due to high charges contradicts the underlying claims in PPP by Cointreau-Levine and Coad (2000:3) that private companies provide services at a low cost. Incidents of free riding in the high-income area to avoid high cost of service provision contributes to increasing the degree of environmental change in middle and low-income areas from the waste collected by minors to dispose in other neighborhoods.

Thus, the state is implicated as administering environmental degradation by not providing equal access for households to be involved and to influence the commodification process of waste collection. A reflection of a win-lose situation framed with social and environmental injustice. The state benefits from the partnership in leveraging funding and 20% annual tariff from private companies at the expense of the health of the poor in middle and low-income areas and the environment.

4.4 Service Delivery and Distribution of Skip Bins

The respondent from NUDB mentioned during the interview session that waste collection is at the communal and house-to-house level in Lafia. The communal collection is by NUDB and the house-to-house collection is by private company. NUDB is carried out using 5 trucks for collection and 10 skip bins for storage. The skip bins are distributed thus: 3 along Shendam Road, 3 along Jos Road, 1 in 500 Housing Unit and 3 along Makurdi

Road. NUDB collects waste by route schedule in interior and low-income areas at monthly intervals without charges on a daily basis. 12 staff and 30 casual workers including the driver handle waste collection from designated locations from 9 a.m. The area covered by NUDB is larger than where the private companies operate. The volume of garbage keeps accumulating making it difficult to evacuate waste promptly from public domain. There is no policy on waste reduction and separation. When waste is collected, it is transported with covered truck and dispose of in official dumpsites. Waste has negative impacts on human health and the environment. In Nasarawa state, the perception about waste management is that it is the government responsibility. There is no willingness to pay for waste collection. It is difficult to regulate households since citizens are not capable of paying. There is no civil society organization on waste management in Lafia. Visualize sustainability in waste management by strengthening the PPP arrangement. Soon, waste management will be fully privatized, and everyone will have to pay for waste collection (NUDB official on 13/7/2016).

Exclusion of rural and low-income areas, inadequate provision of bins and weak enforcement administered at the expense of the environment. The sustainable waste management principle of waste reduction at source is not applied in Lafia. Personal observation shows inadequacy and irrationality in the distribution of the skip bins that are positioned along the major streets of Lafia with exception to one skip bin in 500 Housing Unit within the estate. Base on the zoning arrangement in Lafia, 3 out of the 10 skip bins are located in the high-income area along Shendam Road while 7 out of 10 are in middle-income areas. The skip bins are position in areas already assigned to private companies for waste collection. The skip bins are strategically position in areas with the concentration of business premises. The low-income and rural areas that are excluded from the PPP arrangement do not have skip bins allocated to the area. The state has ceded citizens' right to proper waste management through inadequate distributive model of service delivery that cannot ensure sustainability.

Chapter 5 Implication of Findings

The main aim of the study was to understand the effectiveness of the pilot PPP program in contributing to solving waste management problem in Lafia exploring the opportunities, constraints, the context and equality of access to participate in the HHSWM program. Poor funding, lack of adequate infrastructure and technology, bureaucratic bottleneck enabled the adoption of PPP as a policy that has been effective in the management of HHSW in wealthy areas in Lafia. Conversely, population growth, mode of regulation and increasing flow of waste with resistant to intervention threatens the sustainability of the pilot PPP program in waste management. The design of policy instrument was without appropriate education and equal involvement of citizens, thus influencing the level of participation of households. The study used the Political Economy of Socio-Environmental Change to understand how the environmental change in Lafia was produced, the practices by households, and the role of the state in the regulation of the pilot PPP.

The study revealed the constraint in HHSWM, being population growth as contributing to increase waste generation in Lafia. It shows the political and social approach in controlling the flow of solid waste, which by nature cannot disappear but regenerates at the dumpsites intensifying the effect of its components such as the greenhouse gases that spreads beyond borders affecting both human and environmental health. The study also reveals the unique cultural value and waste management practices that are affordable and environmentally friendly but not utilized by the state. However, the state institution enabled marketization of HHSW through the geographical mode of allocation, service charges and service delivery model. Hence, social exclusion and resistance by citizens to the socioeconomic standard of regulating waste management limited the level of participation, obscured the sustainability of PPP and increased the rate of littering in low-income areas.

The main research question was *has the pilot PPP been effective in contributing to the solving of Lafia household solid waste management problem?* The main research question and the sub-questions guided the study, giving insight on the active role of the state in the formulation of pilot PPP, how it transformed and repositioned the state institution (NUDB) from a service provider to a regulator with a change in policy document for efficient service delivery. Also, the reregulation of HHSWM creates class accommodation and commodification of waste as a resource for capital accumulation by the market. The regulatory mechanism employed by the state in the implementation of pilot PPP has promoted efficiency in reducing financial burden for the government and improving the quality of the environment in wealthy areas but not in poor neighbourhood creating a win-lose situation.

The findings of this study agree with wide claim by UNCHS/UNEP 1997; Satterthwaite 1997; Hardoy et al. 2001 that degraded urban environment affects public health of the poor negatively (cited in Post 2004:24). Also, the findings agree with the account that urban environmental management marginalizes environmental concerns and raises tension from the control and regulation of private sector to avoid environmental degradation (Post 2004:25). Again, the study agree with Adekunle (n.d) in Dabak (2014:143) on the lack of consensus among stakeholders, poor design, and implementation of PPP projects by policy makers, lack of transparency, risk perception by private investors and lack of funds as primary constraints to the effectiveness of service delivery under PPP program.

This study contradicts the claim that PPP is an approach to improve environmental sustainability, reduce poverty, low the cost of production and increase productivity in public service delivery in Nigeria (Okoye et al. 2011). The limitation of this study is the inability to follow-up on where informal waste collectors dispose of the waste from high-income areas and accessing the health impact of indiscriminate waste disposal on the poor. Future research is required when the PPP program is fully implemented. A comparative study on community-based waste management approach and the PPP could contribute to future debate on efficiency and sustainability of environmental policy.

References

- Afun, S. (2009) 'Government Regulations and Legislations Will Ensure Sustainable Waste Management in Nigeria', *Solid Waste Management Services Limited*.
- Agbesola, Y. (2013) 'Sustainability of Municipal Solid Waste Management in Nigeria: A Case Study of Lagos'.
- Agwu, M. (2012) 'Issues and Challenges of Solid Waste Management Practices in Port-Harcourt City, Nigeria-a Behavioural Perspective', *American Journal of Social and Management Sciences* 3(2): 83-92.
- Alam, Q., M.H. Kabir and V. Chaudhri (2014) 'Managing Infrastructure Projects in Australia A Shift from a Contractual to a Collaborative Public Management Strategy', *Administration & Society* 46(4): 422-449.
- Arnold, C.A.T. (2005) 'Privatization of Public Water Services: The States' Role in Ensuring Public Accountability', *Pepperdine law review* 32(3): 561.
- Assembly, U.G. (2015) "Transforming our World: The 2030 Agenda for Sustainable Development", *New York: United Nations*. Accessed on 23/7/16 <https://sustainabledevelopment.un.org/post2015/transformingourworld>
- Attah, Allahnana (2014) 'Ridding Nasarawa of Environmental Waste', *Daily Trust* 30 April, p.1-2.
- Awotokun, K. (2005) 'Local Government Administration Under 1999 Constitution in Nigeria', *Journal of social science* 10(2): 129-134.
- BABADE, J.A. (2014) , *SCHOOL OF POST GRADUATE STUDIES* .
- Bäckstrand, K. (2012) 'Are Partnerships for Sustainable Development Democratic and Legitimate', *Public-private partnerships for sustainable development: emergence, influence and legitimacy*. Cheltenham .

Baizakov, S. (2008) 'Guidebook on Promoting Good Governance in Public-Private Partnership'.

Bakker, K.J. (2003) 'A Political Ecology of Water Privatization', *Studies in Political Economy* 70.

Bakker, K. (2005) 'Neoliberalizing Nature? Market Environmentalism in Water Supply in England and Wales', *Annals of the Association of American Geographers* 95(3): 542-565

Bassey, I., A. Bassey, A. Brooks, B. Asikong and I. Andy (2015) 'Environmental and Public Health Aspects of Solid Waste Management at the Lemma Dumpsite in Calabar, Cross River State, Nigeria.'

Baud, I. (2004) 'Markets, Partnerships and Sustainable Development in Solid Waste Management: Asking the Questions'.

Bingham, L.B. and R. O'Leary (2014) *Big Ideas in Collaborative Public Management*. Routledge.

Bland, R.L. and M. Overton (2016) 'Assessing the Contributions of Collaborators in Public-Private Partnerships Evidence from Tax Increment Financing', *The American Review of Public Administration* 46(4): 418-435.

Boardman, A.E., C. Greve and G.A. Hodge (2015) 'Comparative Analyses of Infrastructure Public-Private Partnerships', *Journal of Comparative Policy Analysis: Research and Practice* 17(5): 441-447.

Börzel, T.A. and T. Risse (2005) 'Public-Private Partnerships: Effective and Legitimate Tools of International Governance', *Complex Sovereignty: Reconstructing Political Authority in the Twenty First Century*, edited by Edgar Grande and Louis W. Pauly : 195-216.

Bovaird, T. (2010) 'A Brief Intellectual History of the Public-Private Partnership Movement', *Chapters* .

Bovaird, T. (2007) 'Beyond Engagement and Participation: User and Community Coproduction of Public Services', *Public administration review* 67(5): 846-860.

Bovaird, T. (2004) 'Public–private Partnerships: From Contested Concepts to Prevalent Practice', *International review of administrative sciences* 70(2): 199-215.

Boyer, E.J., D.M. Van Slyke and J.D. Rogers (2015) 'An Empirical Examination of Public Involvement in Public-Private Partnerships: Qualifying the Benefits of Public Involvement in PPPs', *Journal of Public Administration Research and Theory* : muv008.

Brinkerhoff, D.W. and J.M. Brinkerhoff (2011) 'Public–private Partnerships: Perspectives on Purposes, Publicness, and Good Governance', *Public Administration and Development* 31(1): 2-14.

Bromley, D.W. (2007) 'Environmental Regulations and the Problem of Sustainability: Moving Beyond “market Failure”', *Ecological Economics* 63(4): 676-683.

Capital, A. (2010) 'Public Private Partnerships–The Answer to Nigeria's Infrastructure Problems', *Alitheia Capital* .

Castro, C.J. (2004) 'Sustainable Development Mainstream and Critical Perspectives', *Organization & Environment* 17(2): 195-225.

Chan, S. (2012) 'Partnerships for Sustainable Development Beyond the OECD World: Comparing China and India', *Public-private partnerships for sustainable development: emergence, influence and legitimacy*, Cheltenham, UK: Edward Elgar: 115-137.

Cointreau-Levine, S. and P. Gopalan (2000) *Guidance Pack: Private Sector Participation in Municipal Solid Waste Management*. Skat.

Compagnon, D. (2012) 'Africa's Involvement in Partnerships for Sustainable Development: Holy Grail Or Business as Usual?', *Public-Private Partnerships For*

Sustainable Development Emergence, Influence and Legitimacy, Cheltenham, Edward Elgar Publishing : 137-164.

Constitution, N. (1999) 'Constitution of the Federal Republic of Nigeria', *Abuja, Federal Ministry of Information and National Orientation* .

Cooper, T. (2010) 'Recycling Modernity: Waste and Environmental History', *History Compass* 8(9): 1114-1125.

Dabak, Panmun Dantala (2014) 'Public-Private Partnership: The Answer to Nigeria's Development Challenges' *Economic and Sustainable Development* 22(5): 143-147.

Dada, M.O. and M. Oladokun (2012) 'Public-Private-Partnerships in Nigeria: Public and Private Sector Perceptions about Critical Success Factors', *Journal of International Real Estate and Construction Studies* 2(1/2): 55.

Daniel, B. and B. Obadiah (2013) "The emerging central business district (cbd) in Lafia Town, Nigeria, and its related urban planning problems", Proceedings of World Academy of Science, Engineering and Technology, World Academy of Science, Engineering and Technology (WASET) pp97.

de Bettignies, J. and T.W. Ross (2010) "The Economics of Public-Private Partnerships: Some Theoretical Contributions", *Chapters* .

Della Porta, D. and M. Keating (2008) *Approaches and Methodologies in the Social Sciences: A Pluralist Perspective*. Cambridge University Press.

Dellas, E. (2012) *Partnerships for Sustainable Development in the Water Sector: Privatization, Participation and Legitimacy*. Edward Elgar: Cheltenahm, UK.

Douny, L. (2007) "The Materiality of Domestic Waste the Recycled Cosmology of the Dogon of Mali", *Journal of Material Culture* 12(3): 309-331.

Duffield, C.F. (2010) 'Different Delivery Models', *Chapters* .

Farley, J. and R. Costanza (2010) 'Payments for Ecosystem Services: From Local to Global', *Ecological Economics* 69(11): 2060-2068.

Federal Environmental Protection Agency (FEPA) Act of 1988.

Flanders, L. (1997) 'The United Nations' Department for Policy Coordination and Sustainable Development (DPCSD)', *Global Environmental Change* 7(4): 391-394.

Garvin, M.J. and D. Bosso (2008) 'Assessing the Effectiveness of Infrastructure public—private Partnership Programs and Projects', *Public Works Management & Policy* 13(2): 162-178.

George, A.L. and A. Bennett (2005) *Case Studies and Theory Development in the Social Sciences*. Mit Press.

Gerring, J. (2006) *Case Study Research: Principles and Practices*. Cambridge University Press.

Gille, Z. (2007) *From the Cult of Waste to the Trash Heap of History: The Politics of Waste in Socialist and Postsocialist Hungary*. Indiana University Press.

Gómez-Baggethun, E. and M. Ruiz-Pérez (2011) 'Economic Valuation and the Commodification of Ecosystem Services', *Progress in Physical Geography* 35(5): 613-628.

Gómez-Baggethun, E., R. De Groot, P.L. Lomas and C. Montes (2010) 'The History of Ecosystem Services in Economic Theory and Practice: From Early Notions to Markets and Payment Schemes', *Ecological Economics* 69(6): 1209-1218.

Gregson, N. and M. Crang (2010) 'Materiality and Waste: Inorganic Vitality in a Networked World.', *Environment and planning A*. 42(5): 1026-1032.

Henkel, M. and S. Schering (2007) 'Public-Private Partnerships', *Biotechnol J* 2: 172-175.

Henry, R.K., Z. Yongsheng and D. Jun (2006) 'Municipal Solid Waste Management Challenges in Developing countries—Kenyan Case Study', *Waste Management* 26(1): 92-100.

Heynen, N., J. McCarthy, S. Prudham and P. Robbins (2007) *Neoliberal Environments: False Promises and Unnatural Consequences*. Routledge.

Hodge, G.A. and C. Greve (2007) 'Public–private Partnerships: An International Performance Review', *Public administration review* 67(3): 545-558.

Hodge, G.A., C. Greve and A.E. Boardman (2010) 'Introduction: The PPP Phenomenon and its Evaluation', *Chapters* .

Hoornweg, D. and P. Bhada-Tata (2012) 'What a Waste: A Global Review of Solid Waste Management'.

Hwang, B., X. Zhao and M.J.S. Gay (2013) 'Public Private Partnership Projects in Singapore: Factors, Critical Risks and Preferred Risk Allocation from the Perspective of Contractors', *International Journal of Project Management* 31(3): 424-433.

Ibrahim, A., A. Price and A. Dainty (2006) 'The Analysis and Allocation of Risks in Public Private Partnerships in Infrastructure Projects in Nigeria', *Journal of Financial Management of Property and Construction* 11(3): 149-164.

Ikiara, M.M., A.M. Karanja and T.C. Davies (2004) 'Collection, Transportation and Disposal of Urban Solid Waste in Nairobi', 'Collection, Transportation and Disposal of Urban Solid Waste in Nairobi', *Solid Waste Management and Recycling*, pp. 61-91. Springer.

Ikpefan, O.A. (2010) 'Challenges of Public-Private Partnership in Infrastructure Financing in Nigeria', *The Nigerian Accounting Horizon, University of Jos* 4(1): 61-76.

Ikpeze, N. (2015) 'Safe Disposal of Municipal Wastes in Nigeria: Perspectives on a Rights Based Approach', *Journal of Sustainable Development Law and Policy (The)* 3(1): 72-86.

Jacobson, C. and S. Ok Choi (2008) 'Success Factors: Public Works and Public-Private Partnerships', *International Journal of Public Sector Management* 21(6): 637-657.

Joseph, Hir (2013) 'A Look at Lafia's Garbage Heaps', *Daily Trust* 11 September, p. 2.

Kallis, G., E. Gómez-Bagethun and C. Zografos (2013) 'To Value Or Not to Value? that is Not the Question', *Ecological Economics* 94: 97-105.

Ke, Y., S. Wang, A.P. Chan and E. Cheung (2009) 'Research Trend of Public-Private Partnership in Construction Journals', *Journal of Construction Engineering and Management* 135(10): 1076-1086.

Kettl, D.F. (2011) *Sharing Power: Public Governance and Private Markets*. Brookings Institution Press.

Klijn, E. (2010) 'Public Private Partnerships: Deciphering Meaning Message and Phenomenon'.

Kosoy, N. and E. Corbera (2010) 'Payments for Ecosystem Services as Commodity Fetishism', *Ecological Economics* 69(6): 1228-1236.

Kruljac, S. (2012) 'Public–private Partnerships in Solid Waste Management: Sustainable Development Strategies for Brazil', *Bulletin of Latin American Research* 31(2): 222-236.

Ladan, M.T. (2012) 'Review of NESREA Act 2007 and Regulations 2009-2011: A New Dawn in Environmental Compliance and Enforcement in Nigeria', *Law Env't & Dev.J.* 8: 116.

Lember, V. 'Public-Private Partnerships, Public Service Delivery and Innovation: A Market-Centered Approach'.

Lind, D. and E. Barham (2004) 'The Social Life of the Tortilla: Food, Cultural Politics, and Contested Commodification', *Agriculture and Human Values* 21(1): 47-60.

Linder, S.H. (1999) 'Coming to Terms with the Public-Private Partnership a Grammar of Multiple Meanings', *American behavioral scientist* 43(1): 35-51.

Liu, J., P. ED Love, J. Smith, M. Regan and M. Sutrisna (2014) 'Public-Private Partnerships: A Review of Theory and Practice of Performance Measurement', *International Journal of Productivity and Performance Management* 63(4): 499-512.

Manaf, L.A., M.A.A. Samah and N.I.M. Zukki (2009) 'Municipal Solid Waste Management in Malaysia: Practices and Challenges', *Waste Management* 29(11): 2902-2906.

Manzuk, G. (2008), *THE PRIVATE SIDE OF PUBLIC-PRIVATE PARTNERSHIPS IN RURAL DEVELOPMENT*.

Marx, K. (1867). The Fetishism of Commodities and The Secret Thereof. In Marx, K. *Capital*, Volume 1.

McDougall, F.R., P.R. White, M. Franke and P. Hindle (2008) *Integrated Solid Waste Management: A Life Cycle Inventory*. John Wiley & Sons. Accessed on 21/10/16 <https://books.google.nl/books?isbn=0470999667>

Mert, A. and S. Chan (2012) 'The Politics of Partnerships for Sustainable Development', *Public-private partnerships for sustainable development. Emergence, influence and legitimacy* : 21-43.

Ministry of Environment (MENV) (1999) Policy Handbook, Nasarawa State, Nigeria.

Misoczky, M.C. and S. Böhm (2012) 'From Sustainable Development to Green Economy: The Constant and Accelerated Onslaught of Capital on Nature', *Cadernos EBAPE.BR* 10(3): 546-568.

Morrissey, A.J. and J. Browne (2004) 'Waste Management Models and their Application to Sustainable Waste Management', *Waste Management* 24(3): 297-308.

Mouraviev, N. and N.K. Kakabadse (2012) 'Conceptualising Public-Private Partnerships: A Critical Appraisal of Approaches to Meanings and Forms', *Society and Business Review* 7(3): 260-276.

Nabegu, A.B. (2010) 'An Analysis of Municipal Solid Waste in Kano Metropolis, Nigeria', *Journal of Human Ecology* 31(2): 111-119.

National Policy On Environment. Accessed on 24/10/16 www.nesrea.gov.ng/

Nasarawa State Environmental Sanitation and Waste Management Regulation 2006.

Nasarawa State Urban Development Board (NUDB), Edict No. 4 of 1997.

National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007. Accessed on 24/10/16 www.nesrea.gov.ng/

National Environmental (Sanitation and Wastes Control) Regulations, S. I. No. 28 of 2009. Accessed on 24/10/16 www.nesrea.gov.ng/

Ngoc, U.N. and H. Schnitzer (2009) 'Sustainable Solutions for Solid Waste Management in Southeast Asian Countries', *Waste Management* 29(6): 1982-1995.

Ngowi, H.P. (2006) 'Public-Private Partnerships (PPPs) in the Management of Municipalities in Tanzania—Issues and Lessons of Experience', *African Journal of Public Administration and Management* 17(2): 29-31.

Nwufo, C. (2010) 'Legal Framework for the Regulation of Waste in Nigeria', *African Research Review* 4(2).

Ogah, A., M. Alhassan, N. Medugu and A. Mohammed (2014) 'Household Solid Waste Management Methods in Lafia, Nasarawa State Nigeria'.

Ogwueleka, T. (2009) 'Municipal Solid Waste Characteristics and Management in Nigeria', *Journal of Environmental Health Science & Engineering* 6(3): 173-180.

Okon, E.O. (2016) 'Business Development in Nasarawa State: Effect of Poor Sanitation and Waste Management System', *International Journal of Economics, Business and Management Studies* 3(1): 36-46.

Okoye, E.I. and O. Tennyson (2012) 'Public-Private Partnership for Efficient Public Service Delivery in Nigeria: The Case of Delta State Govt of Nigeria', *Available at SSRN 2022162* .

Olga, Tyunina (2014) 'The Role of Environmental Movements in Establishing of Municipal Solid Waste Management in Urban Areas-Comparing Russia and Japan' *Journal of Global Environmental Studies*

Olusola Babatunde, S., A. Opawole and O. Emmanuel Akinsiku (2012) 'Critical Success Factors in Public-Private Partnership (PPP) on Infrastructure Delivery in Nigeria', *Journal of Facilities Management* 10(3): 212-225.

Oluwasanmi, O. and O. Ogidi (2014) 'Public Private Partnership and Nigerian Economic Growth: Problems and Prospects', *International Journal of Business and Social Science* 5(11).

Onibokun, A.G. (1999) *Managing the Monster: Urban Waste and Governance in Africa*. Idrc. Accessed on <https://www.idrc.ca/en/book/managing-monster-urban-waste-and-governance-africa>.

Osborne, S. (2002) *Public-Private Partnerships: Theory and Practice in International Perspective*. Routledge.

Pattberg, P. (2005) 'The Institutionalization of Private Governance: How Business and Nonprofit Organizations Agree on Transnational Rules', *Governance* 18(4): 589-610.

Pattberg, P., F. Biermann, S. Chan and A. Mert (2012) 'Introduction: Partnerships for Sustainable Development', *Public Private Partnerships for Sustainable Development: Emergence, Influence and Legitimacy* : 1-18.

Pessoa, A. (2010) 'Reviewing Public-Private Partnership Performance in Developing Economies', *Chapters* .

Pongsiri, N. (2002) 'Regulation and Public-Private Partnerships', *International Journal of Public Sector Management* 15(6): 487-495.

Post, J. (2004) 'Evolving Partnerships in the Collection of Urban Solid Waste in the Developing World', 'Evolving Partnerships in the Collection of Urban Solid Waste in the Developing World', *Solid Waste Management and Recycling*, pp. 21-36. Springer.

Public Health Act Of 1963.

Redclift, M. (2005) 'Sustainable Development (1987–2005): An Oxymoron Comes of Age', *Sustainable Development* 13(4): 212-227.

Roberts, D.J. and M. Siemiatycki (2015) 'Fostering Meaningful Partnerships in public-private Partnerships: Innovations in Partnership Design and Process Management to Create Value', *Environment and Planning C: Government and Policy* 33(4): 780-793.

Robinson, J. (2004) 'Squaring the Circle? some Thoughts on the Idea of Sustainable Development', *Ecological Economics* 48(4): 369-384.

Rode, S. (2011) 'Public Private Partnership in Solid Waste Management in Municipal Corporations of Mumbai Metropolitan Region'.

Sanger, T. and C. Crawley (2009) , *The Problem with Public-Private Partnerships* .

Savas, E.S. and E.S. Savas (2000) *Privatization and Public-Private Partnerships*. Chatham House New York.

Skelcher, C. (2010) 'Governing Partnerships'.

Soyeju, O. (2013) 'Legal Framework for Public Private Partnership in Nigeria', *De jure* 46(3): 814-832.

Sridhar, M. and T. Hammed (2014) "Turning Waste to Wealth in Nigeria: An Overview', *J Hum Ecol* 46(2): 195-203.

STEPHEN, H. (2000) 'Coming to Terms with the Public-Private Partnership', *Public-private policy partnerships* : 19.

Syrett, S. and M. Bertotti (2012) 'Reconsidering Private Sector Engagement in Subnational Economic Governance', *Environment and Planning A* 44(10): 2310-2326.

Taiwo, A. (2009) 'Waste Management Towards Sustainable Development in Nigeria: A Case Study of Lagos State', *International NGO Journal* 4(4): 173-179.

Troschinetz, A.M. and J.R. Mihelcic (2009) 'Sustainable Recycling of Municipal Solid Waste in Developing Countries', *Waste Management* 29(2): 915-923.

Tvärnå, C.D. (2010) 'Law and Regulatory Aspects of Public-Private Partnerships: Contract Law and Public Procurement Law', *Chapters* .

United Nations (1997) Commission on Sustainable Development, New York

Välijä, T. (2005) 'How Expensive are Cost Savings? on the Economics of Public-Private Partnerships', *EIB papers* 10(1): 95-119.

Vučković, B. (2014) "Tackling Waste Issues".

Welivita, I., P. Wattage and P. Gunawardena (2015) 'Review of Household Solid Waste Charges for Developing countries—A Focus on Quantity-Based Charge Methods', *Waste Management* 46: 637-645.

Wettenhall, R. (2010) 'Mixes and Partnerships through Time', *Chapters* .

Williams, A. (2015) *The Enemies of Progress: The Dangers of Sustainability*. Vol. 40. Andrews UK Limited. Accessed 10 October 2016.
https://books.google.nl/books?hl=en&lr=&id=cHXZCgAAQBAJ&oi=fnd&pg=PP1&dq=Williams,+A.+%282015%29+The+Enemies+of+P&ots=wXk2fxHp3V&sig=9lq3yk3WVcENQWYyIsPdXfQ7Bj8&redir_esc=y#v=onepage&q&f=false Accessed on 15 October 2016

Wilson, D.C. (2007) 'Development Drivers for Waste Management', *Waste management & research : the journal of the International Solid Wastes and Public Cleansing Association, ISWA* 25(3): 198-207.

Winpenny, J. (2005) *Managing Water as an Economic Resource*. Routledge.

Yescombe, E.R. (2011) *Public-Private Partnerships: Principles of Policy and Finance*. Butterworth-Heinemann.

Yin, R.K. (2013) *Case Study Research: Design and Methods*. Sage publications.

Zabaleta, A. (2008) 'Sustainability Indicators for Municipal Solid Waste Treatment Case Study: The City of Stockholm: Landfill Vs. Incineration'.

