UNIVERSITY FOR DEVELOPMENT STUDIES

THE PROVISION AND MANAGEMENT OF PUBLIC TOILETS IN WA TOWNSHIP

ISAAC KWABENA AYEREKA

2017

UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

THE PROVISION AND MANAGEMENT OF PUBLIC TOILETS IN WA TOWNSHIP

BY

ISAAC KWABENA AYEREKA (B.A. INTEGRATED DEVELOPMENT STUDIES)

UDS/CHD/0082/12

A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, SCHOOL OF ALLIED HEALTH SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN COMMUNITY HEALTH AND DEVELOPMENT

APRIL, 2017

DECLARATION

STUDENT

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

Name: Isaac Kwabena Ayereka

Candidate's Signature: …… Date ……...

SUPERVISOR

I hereby declare that the preparation and presentation of this thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies.

Name: Prof. Dr. Juventus B. Ziem

Supervisor's Signature: …… Date ……...

ABSTRACT

Public Toilets (PTs) are used all over the world by transient populations and are usually located in public places. However in Ghana most households also depend on PTs for defecation. Due to the pressure and lack of maintenance of these PTs, it has often resulted in most of them being dirty, smelly, unhygienic etc. This research assesses the provision and management of PTs in the Wa Township of the Upper West Region. All the 44 PTs in Wa Township were selected for the study. A hand-held GPS receiver was used to pick geographic coordinates of various PTs. The results revealed that majority (95.46%) of the PTs were located in the central business area and low-income residential areas, where there is high daily patronage. On average, 8,022 people use the PTs per day with 191 people per facility per day. Most (95.46%) of the PTs do not have adequate and regular cleaners, hand washing facilities and other essential disinfectants to clean them. Also the cesspit emptiers (3) were inadequate to serve all toilets in Wa Township. Some PTs attendants temporarily close down the facility when the septic tank is full until such a time that they are able to engage the services of a cesspit emptier to drain the faecal sludge. Others also hire labourers to use bucket to fetch the faecal sludge from the septic tanks and thrown just beside the facility. These challenges make it difficult for these PTs to be maintained. Finally, about 70% of the GOPTs were not well constructed, not well managed and poorly maintained. Despite these challenges, PTs if well managed can be clean, safe and appropriate. The study recommends that; Government Owned PTs should be privatised to ensure effective and efficient management. People caught disposing faecal sludge at unauthorised places should be punished to serve as a deterrent to others.

ACKNOWLEDGEMENTS

My sincere gratitude goes to the Almighty God for His blessings and mercies upon my life. My unreserved thanks also go to Prof. Dr. Juventus B. Ziem, my supervisor for his excellent guidance and encouragement in the production of this piece of work.

I wish to especially acknowledge the support and encouragement of Mr Raymond Tetteh, Madam Beatrice Kunfah, the Municipal Health Director at the Wa Municipal Health Directorate, Iddrisu Abdul-Nasir B., the Administrative Manager of Wa Municipal Health Directorate and all the members of St. Aidens' Anglican church, Wa especially Canon Moses Banungwiiri and Rev. Cletus Saanibour.

I wish to thank Mr Tony Basingnaa, the owner of The Loo Private public toilet in Kpaguri, Mr George Arthur, the Municipal Environmental Health Officer, Mr Dachaga Oswald, Municipal Health Information Officer.

I also want to thank Mr Ibrahim Abdulai, Mr Eric Awuge Ali, Mr Solomon Gandoma, Mr Maxwell Manpaya and Mr Lucius Somanku N. Lewis for their kind support.

DEDICATION

I first and foremost dedicate this work to the Almighty God for His favour. Also to my late parents, Mr Joseph Ayariga and Madam Laadi Awimma Ayariga, for playing their role as a father and a mother in my life.

To my Diocesan Bishop: Rt. Rev. Bishop Jacob Ayeebo, and to my siblings: Mr Emmanuel Kwesi Ayariga, Gifty Lamisi Ayariga, Peter Ayariga, Simon Ayariga, Joe Ayariga and Samson Austin Ayariga.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

LIST OF ABBREVIATIONS

ATBS – Adarsha Tole Bikash Samstha

ATR – African Traditional Religion

CDRs - committees for Defence of the Revolution

CFR - Case Fatality Rate

CPTED - Crime Prevention Through Environmental Design

CWSA - Community Water and Sanitation Agency

DESF - District Environmental Sanitation Fund

DANIDA - Danish International Development Agency

ESP - Environmental Sanitation Policy

FS - Faecal Sludge

GIS – Geographic Information System

GLSS – Ghana Living Standard Survey

GOPT – Government Owned Public Toilet

GPS – Geographic Position System

GSS - Ghana Statistical Service

GWSRS – Ghana Water Sector Restructuring Secretariat

HOD – Head of Department

JHS – Junior High School

KMA – Kumasi Metropolitan Assembly

KVIP - Kumasi Ventilated Improve Pit

MLGRD - Ministry of Local Government and Rural Development

MMDAs - Metropolitan, Municipal and District Assemblies

MWRWH – Ministry of Water Resources, Works and Housing

NCBDA - Nairobi Central Business District Association

NCC - Nairobi City Council

NESPoCC - National Environmental Sanitation Policy Coordinating Council

NGO - Non Governmental Organisation

PNDC - Provisional National Defence Council

POPT- Privately Owned Public Toilet

PPP - Public-Private Partnership

PPPSD - Public-Private Partnerships for Service Delivery

PTO - Power Take Off

PT – Public Toilet

SHS – Senior High School

SPSS - Statistical Product and Service Solution

STWS - Small Town Water System

SSNIT – Social Security and National Insurance Trust

TMC - Toilet Management Committee

UN – United Nation

UNDP – United Nations Development Programme

UNICEF- United Nations International Children's Emergency Fund

UWR – Upper West Region

VIP - Ventilated Improve Pit

WaMA – Wa Municipal Assembly

WC – Water Closet

WGS - World Geographic System

WHO – World Health Organisation

WSUP - Water and Sanitation for the Urban Poor

CHAPTER ONE

1.1 Study Background

The history of public toilets (PTs) in Ghana can be traced back to the colonial period (Davis, 1986). In the early 1930s, the government of that era constructed PTs in Accra and Kumasi. Subsequently, the number of PTs increased during the post-colonial period not only because of policies pursued by successive governments but also to solve a practical problem of dealing with the rising population (Ayee and Crook, 2003). PTs are toilets open to anybody, in public places or in residential areas: typically there is a charge for each use but it could also be free (WSUP, 2011). They can also be temporary facilities provided for a specific once off purpose e.g. festival (Public toilet strategy, 2012). According to Ghana's Building Regulations, PTs are meant for transient populations, market places and lorry parks but the fact that some homes and workplaces in Ghana do not have toilet facilities, inhabitants tend to use PTs facilities all the time (Planning Standards, 2010).

In Ghana, the Metropolitan, Municipal and District Assemblies (MMDAs) are mandated by national legislation (Act 462) to provide sanitation services and facilities within their respective areas of jurisdiction. This mandate covers the provision, operation and maintenance of PTs, in both commercial and residential areas (Government of Ghana, 2003). Due to financial and institutional challenges, public toilets run by MMDAs have also been criticised for their lack of water and electricity supply, absentee caretakers and infrequent maintenance. These have compelled MMDAs to franchise the management of these facilities to individuals (contractors), and these contractors are often selected on the basis of their political party affiliations. This leads to problem when there is a change of government, where party loyalist start

to seek for the control and management of these PTs to enable them enjoy proceeds generated from these facilities (Sanitation Management Models, 2012).

PTs are found worldwide, in locations like bus stations and markets. Pay-per-use public toilets are most commonly seen in public locations, but may also be constructed in low-income residential areas, serving both residential and transient users (WSUP, 2011). In Senegal, PTs are not widely used except in public places. But in Kenya, PTs for residential use are often very poorly maintained and located in poor settlements. In Ghana, pay-per-use public toilets for residential use are very widespread: in Kumasi, for example, at least 40% of the population is estimated to use PTs, of which there are about 365 serving about 400,000 people. Some PTs in Ghanaian cities offer a good level of service, though many are very poorly maintained (WSUP, 2011)**.** PTs in Ghana are constructed with separate compartments for men and women but these PTs did not have separate place for children. Most of them are also not disability friendly (WSUP, 2011).

A poorly designed and/or maintained public toilet may have very serious impact on the image of a country or a city. Every year there are more than a million visitors coming from all over the world to Ghana for business, sightseeing or some other purposes. These visitors have chance to use public toilets that are located at scenic spots, shopping areas, public transport terminus, parks and playgrounds, etc. It could affect the tourism potentials of this country if these public facilities are not managed well. People often use plastic bags for defecation rather than queue for hours at a public latrine and dispose of them on rubbish dumps which accumulate around latrines particularly abandoned ones (King et al, 2001).Many public toilets are poorly managed and this has implications for public health (UNDP, 2010).

1.2 Problem Statement and Justification

More than 40% of the world's population did not have access to toilet by the end of 2011 (WHO/UNICEF, 2013). These 2.6 billion people (40%), mostly living in low- and middle-income countries in Asia and Africa, face the daily challenge of finding a place to defecate (UN-Habitat, 2003). Although Ghana ranks 152 out of 182 on the Human Development Index, it has the fourth lowest rate of sanitation coverage worldwide (Water and Sanitation Sector Monitoring Platform, 2012). In 2005, the percentage of the population in Ghana with access to improved toilet facilities was approximately 40 per cent in urban areas and 35 per cent in rural areas (GWSRS, 2005).

Public toilets are used all over the world. They are meant for transient populations and are usually located in public places etc (Planning Standards, 2010). As a result of the inadequacy in the provision of household toilets in many cities in the developing world, a large number of residents also use PTs. This has put pressure on the few existing PTs in Ghana, which has resulted in their rapid deterioration (Planning Standards, 2010).

The PTs are often dirty and unhygienic because of poor design, poor construction and/or poor maintenance. PTs may be particularly unsafe at night especially to women and children due to the fact that they are often found in dark places (WSUP, 2011). In some cases, doors may be broken or missing, such that even basic privacy is lost. PTs may be managed by local street gangs (as in Nairobi) or by political factions (as in Kumasi); this may often mean that they are run for excessive profit with little regard to affordability and quality of service (WSUP, 2011).

In developed countries such as the Great Britain, the provision of PTs is a matter of concern due to poor and declining levels of provision. Over the last 10 years for instance, more than 40% of all public toilets have been closed down due to vandalism, lack of funding for maintenance and supervision, and more fundamentally because of an under-estimation of their importance (Greed, 2002). Most of the PTs are poorly ventilated, smelly and unhygienic and this discourages sanitary conscious citizens from using such facilities. Due to these conditions, most people resort to open defecation. They defecate in uncompleted structures, open fields, gutters etc. In the Wa Township for instance, PT is used by only 37.0% of households (Population and Housing Census, 2010).

Open defecation is prevalent in all 10 regions of Ghana, but reported to be widespread in the Upper East Region with about 82% of households without any form of latrine, followed by the Upper West Region with 78.7% (Water and Sanitation Sector Monitoring Platform, 2013). In Wa Township about 72.9% of people use the bush or field for defecation (Population and Housing Census, 2010).

Open defecation can lead to the spread of sanitation and water related diseases. When faeces are disposed off improperly, they tend to pollute water sources and this increases likelihood of infectious diseases (Salifu, 2010). In 2014, Ghana was hit with a cholera epidemic with a total of 16,613 cases, 130 deaths from 91 districts in nine out of the ten regions of the country. The Wa Municipal recorded 18 cases with one death (http://www.ghananewsagency.org/health/wa-municipal-assembly-launches-cholera-prevention-exercise--91208 accessed on 19/10/2015 23:36:56). According to WHO in the year 2015, a total of 434 cholera cases with 4 deaths were recorded in Ghana with a case fatality rate (CFR) of 0.9% reported from 25 districts in 7 regions. The Greater Accra region was the epicentre of the outbreak with 167 cases.

In Ghana, it is estimated that 9 million episodes of diarrhoea occurred each year with about 84,000 children dying from it (Scott et al., 2007). According to the Wa Municipal Health Service (2010) annual report, typhoid and diarrhoea diseases which are closely linked to the problem of open defecation accounted for 624 and 5,300 cases respectively. These have therefore motivated the researcher to study the provision and management of PTs in Wa Township.

1.3 Research Questions

1.3.1 General Question

What is the state of the provision and maintenance of public toilets in Wa Township?

1.3.2 Specific Questions

i. Where are PTs located in the Wa Township?
ii. How is the patronage of PTs in the Wa Township?
iii. How are PTs maintained in the Wa Township?

1.4 Objectives of the Study

1.4.1 General Objective

To assess the provision and maintenance of public toilets in Wa Township.

1.4.2 Specific Objectives

i. To determine the number of PTs and their locations in the Wa township
ii. To assess the patronage of PTs in the Wa township
iii. To assess the maintenance of PTs in the Wa township

1.5 Relevance of the Study

Results from the study would help in proposing recommendations and strategies that will go a long way to improve the management and maintenance of public toilets in Wa Township, ensuring effective enforcement of sanitation bye-laws.

This study would help identify where PTs are located in the Wa Township, which will inform policy makers on where PTs are lacking and the need to establish some.

It will also help identify the usage levels of these PTs, which will help planners and policy makers provide more PTs in areas where there is pressure on existing ones.

The study will also help assess the current management practices and policies undertaken, which will help policy makers decide whether to maintain the status-quo or change existing management policy.

This study has uncovered the hidden challenges in the provision, maintenance and operation of public toilet facilities. The study exposed a lot of unknown facts that have made the management of public toilets difficult. It also adds up to the literature in the area. The study has also suggested some useful ways and methods of addressing the management problems.

Last but not the least, it served as the basis for future research into this area. It will also provoke debate on public toilet management. In the course of debating, better options may be developed.

1.6 Scope of the Study

The study focuses on the provision and management of public toilets in Wa Township. Essentially, the scope of this research is limited to the Wa Township. Wa Township was chosen because of its fast growing rate following the establishment of the University for Development Studies Wa campus, The Health Assistant Training

School and the Wa Polytechnic. Majority of the students live in rented houses off-campus without toilet facilities, residents therefore depend largely on the few public toilets available. The inadequate provision of toilet facilities, the bad nature of the few existing public toilets due to the inability of managers to keep these facilities clean and the distance involved in accessing such facilities have favoured open field defecation. The pressures on the few public toilets which have not been improved add to the need to assess their nature, usage and management.

The major sources of water in the township include the Small Town Water System (STWS), boreholes, hand dug wells as well as rainwater. It is estimated that about 41.3% of the people faced severe water shortages especially in the dry seasons. This affects the management of public latrines because water is needed regularly to keep them clean. The inadequate availability of water to clean the facilities promotes the breeding of flies and bad odour which reduce usage and affect public health. Clients who cannot withstand this odour have to resort to open defecation in the Township, which affects the environment and the public (Wa Municipal Assembly Profile, 2010-2013).

1.7 Conceptual Framework

Enhancing effective management of public toilets requires a holistic approach which can be achieved if all sectors in charge with sanitation management coordinate and collaborate. The toilet management system includes cleaning of the facilities, availability of water and hand washing facilities, safe disposal of human excreta and the proper usage of the facilities by clients. Management of public toilets rest on three main pillars; the users/clients/beneficiaries, owners/ managers and MMDAs/Government. Each pillar plays an important role and therefore a

coordination and collaboration among them will promote effective management of these public toilets.

The users are expected not to abuse the facilities during or after use. Users should sit on water closets and squat on holes appropriately when necessary. Users should not defecate on the slaps or at the entrance of the toilet. They should not also spit on the walls of the facility or dump unwanted substance in the squat hole etc.

Owners/managers have to provide quality services to users by ensuring that the facilities are clean and safe. They are to ensure the provision of light and water, cleaners, quality detergents for cleaning to prevent bad odour, the breeding of cockroaches, flies, maggots, snakes and lizards at the facilities. They also have to use technologies that are friendly to the needs of clients, to the local environment, economy and to the health of the community.

MMDAs/monitoring institutions are to ensure that the standards regarding the provision, operation and maintenance of public toilets are met. These regulatory institutions such as the MMDAs, municipal environmental health department, and Tourist board are to monitor and supervise the provision, operation and maintenance of a well-designed public toilet. A well-designed public toilet has to be: Clean and dry, well ventilated, easy to maintain, carefully planned layout, friendly to persons with disabilities and special needs.

Therefore these pillars (the users/clients/beneficiaries, owners/ managers and MMDAs) are expected to play their various roles and responsibilities to promote the proper and effective management of these public toilets. They are to collaborate and work together to achieve this objective.

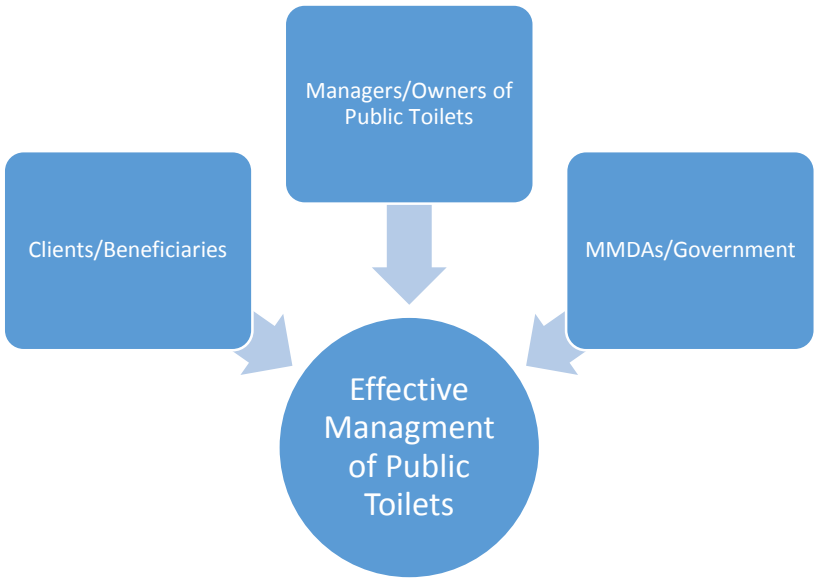


Figure 1.1; Above shows the Conceptual Framework for effective management of public toilets.

Source: by Author, 2015

1.8 Structure of the Thesis

The thesis has been put into six chapters. **Chapter One**, the introduction, contains the background, problem statement and justification, research questions, research objectives, scope and the structure of the study. **Chapter Two** contains the literature review, while **chapter three** is centred on the research methodology and the profile of the study area. **Chapter four** focuses on the results of the study and **chapter five** contains the discussion. **Chapter six** contains the summary of findings, conclusion and recommendations drawn from the study.

1.9 Limitation of Study

Time and money were limiting factors to the study. The researcher had to seek for financial support from relatives and friends to enable him complete the research work. He also had to work hard to complete the research within the limited time.

CHAPTER TWO

Literature Review

2.1.1 Public Toilet

Public toilets are toilets open to anybody, in public places or in residential areas: typically there will be a charge for each use. (WSUP, 2011). They can also be temporary facilities provided for a specific once off purpose e.g. festival. Public toilets can be provided on private bases, as long as they are freely available for general use (Public toilet strategy, 2012).

Public Toilets are also called pay toilet that requires money payment of any individual to use. It may be street furniture or be inside a building, e.g. a mall, department store, railway station, restaurant, etc. The reason for charging money for using toilets usually is for the maintenance of the equipment. (Pay toilet - Wikipedia, the free encyclopaedia: https://en.wikipedia.org/wiki/Pay_toilet assessed on 13 November 2015 13:08:35)

2.1.2 Management

Management in the context of this study is a purposive activity by an individual or group of individuals. They accept responsibilities to operate, maintain and manage public toilets. They are given the mandate to plan, organize, direct and control all the essential activities that would ensure the effective and efficient functioning of public toilets to ensure delivery of services. Management does not do the work themselves.

They work with and through others to effectively attain their goals and objectives.

They motivate others to do the work and coordinate all the work for achieving predetermined objectives of providing safe, hygienic and secured public places of convenience. Management bring together men and women, money, machines, methods and market strategies. They use these resources for achieving these objectives (Akrani, 2011).

2.1.3 Common Methods of Pit/Cesspit/Septic Tank Emptying

According to Nkansah (2009), the technologies used in cesspit tank emptying can be broadly grouped into two; the manual and mechanical methods depending on the kind of technologies involved. Manual pit emptying involves the use of bare hands up to simple rudimentary tools (e.g. bucket). Mechanical emptying involves more sophisticated and conventional equipment such as vacuum or cesspit emptier and pneumatic tankers. Small size technology (e.g. the dung beetle) lies in between the manual and the mechanical technologies (Nkansah, 2009).

Though pit emptying constitute a major problem in many places, both technically and managerially, many countries still offer both mechanised and manual pit emptying services. Mechanical services are rendered by MMDAs or medium to large-size entrepreneurs whilst manual pit emptying is offered by individuals, small groups of individuals or micro enterprises (Strauss and Montangero, 2012)

Manual pit emptying is traditionally done with buckets. Emptiers step into the vault or pit to evacuate the sludge which has turned too solid to be scooped. Therefore the traditional manual pit emptying is associated with considerable health risks – for emptiers in the first place.

The general public is at risk as well, as the emptied sludge is usually deposited into nearby surface drains or into lanes. Manual pit emptying is often done at night and is associated with secrecy (Strauss and Montangero, 2002).

Public toilet managers may rely on the manual pit emptying, either because services for mechanical emptying are not reliable, too costly, solidified deposits are not removable by suction or because the pit is not accessible by emptying vehicles (Strauss and Montangero, 2002).

2.1.4 Equipment for Draining of Toilets-Cesspit emptier

Cesspit emptier is designed to collect, by suction, and transport the sewage and sludge. Cesspit emptier consists of a sub frame connected to the vehicle's chassis. A cylindrical tank, a hydraulically opening full diameter tailgate and the vacuum system powered by the *Power Take Off (*PTO). There is a sub frame made from 'U' profiles and steel is mounted to the chassis with mounting plates. Tank is manufactured from thick sheet steel. Front end is covered with convex plate and welded to the body at both sides. There are baffle plates mounted inside the body on the reinforcing rings. Tank is mounted on the sub frame at a required slope with flexible mounting elements. At the rear there is an acid resistant rubber gasket placed in a full diameter steel housing to prevent leaking from the tailgate. Tailgate is connected to the body with top hinges with bronze bushings. Tailgate is opened upwards by a hydraulic cylinder. There are four or five wheel clamps around the tailgate to provide efficient sealing. There is a ball valve and aluminium quick coupling at the tailgate to which the suction hoses are connected. There is a hydraulic hand pump with control valve on it to open the tailgate easily. It is placed rear right of the equipment. There is a flow control valve in the installation to prevent sudden dropping of the tailgate. Vacuum pump is powered by the PTO controlled from the cab. There is a vacuum meter on the

installation (All Products _Katmerciler: Retrieved: Accessed on 21 November 2015 21:51:02).

2.2 The history of Public Toilets

Some of the earliest documented public toilets were built around 74 AD in Rome. The Roman Emperor of the time Titus Flavius Vespasianus created this method to ease the financial hardships, attained from the many wars that had been fought. This was not a popular choice with his people and he was ridiculed for the decision, to which he reacted with the famous quote 'Money does not smell' (Pay toilet; Retrieved from https://en.wikipedia.org/wiki/Pay_toilet Accessed on 13th November 2013. 13:08:35).

The ancient Greco-Roman city of Ephesus played an important role in ancient times, becoming the trade centre and commercial hub of the ancient world. The Scholastica Baths were built in the 1st century and contained all of the modern amenities for hygiene, including advanced public toilets that had marble seats. To make use of these luxury conveniences, one had to pay a fee to enter, where they could enjoy the use of a pool, use the toilet or socialize (Pay toilet; Retrieved from https://en.wikipedia.org/wiki/Pay_toilet Accessed on 13th November 2013. 13:08:35).

John Nevil Maskelyne, an Englishstagemagician, invented the first modern public toilet in the late 19th century. His door lock for London toilets required the insertion of a penny coin to operate it, hence the euphemism to "spend a penny" (Pay toilet; Retrieved from https://en.wikipedia.org/wiki/Pay_toilet Accessed on 13th November 2013. 13:08:35).

The first pay/public toilet in the United States was installed in 1910 in Terre Haute, Indiana.

Pay /public toilets became especially common in Continental Europe. Paris, in particular, established many of them, and today the streets of the city are forested with self-cleaning coin operated booths (landmarks like Basilique du Sacré-Cœur generally have several) (Pay toilet; Accessed on 13th November 2013. 13:08:35).

Public toilets may be segregated by gender as indicated by written signs or pictograms of a man or a woman, or alternatively may be used without this distinction. In many cultures, separation by sex or gender is so characteristic of public toilets that pictograms of a man or a woman are used to indicate locations of the respective toilets, often without explicit reference to the fixtures themselves. In restaurants and other private locations, the identifications can be designed to match the decoration of the premises. In jurisdictions using the Uniform Plumbing Code, sex separation is a legal mandate via the building code (Pay toilet; Accessed on 13th November 2013. 13:08:35).

Gender-segregated public toilets are a source of difficulty for some people; for example, men caring for babies may find that only the women's toilet has been fitted with a baby changing facility (Pay toilet; Accessed on 13th November 2013. 13:08:35).

People with disabilities who need assistance to use the public toilet have an additional problem if their helper is a different gender to themselves. The blind people find it difficult to identify some of these gender signs and writings. Transgender and gender non-conforming persons also may be subject to embarrassment, harassment, or even assault or arrest by others offended by the presence of a person they interpret as being

of a different gender (whether due to their outward presentation or their anatomical sex) to themselves. (Pay toilet - Wikipedia, assessed on 13 November 2015 13:08:35)

2.3 Public Toilet Policy and Management in Advance Countries

Today, public toilet availability varies worldwide. While many Western countries are closing public facilities, Asian countries are emphasizing them. In preparation for the 2008 Olympics, Beijing committed to having a public toilet every eight-minute walk. In Japan, where cleanliness and order are paramount, toilet facilities and their maintenance are a valued occupation. Australia, which boasts nearly 17,000 public toilets, has created a nationwide registry, accessible online, in order to "improve independence and quality of life" for all people, but especially for those who deal with incontinence ("National Public Toilet Map - About," 2013). The City of Melbourne created a 2008-2013 Public Toilet Plan, which replaced and updated their 2002 Toilet Management Plan, that aims to "maintain a network of safe, accessible, clean and environmentally sustainable public toilets" and "improve the quality of the public toilet stock, ensuring toilets are placed at locations that best meet community needs (City of Melbourne, 2008)." In America, the U.S. Department of Labour, through the U.S. Occupational Safety and Health Administration (OSHA), requires employers provide toilets for employees, citing the adverse health effects that can result from not being able to use a toilet regularly. The U.S. Department of Health and Human Services, which is responsible for protecting the health of the public as well as employees, would be the United States' primary tool for creating a national public toilet policy, but to date it has taken no stance on the matter. Therefore, the issue of public toilet availability in America (as in most other countries) falls to cities (Washington, 2014).

The City of Portland, home to the highly acclaimed Portland Loo – a freestanding public toilet – and renowned for its progressive planning policies, struggles to provide adequate public toilets for its residents, transit users, employees and tourists. The Portland conversation about public toilets dates back to 1915 when Prohibition shut down saloons and created an increased need for more "comfort stations" around the city (Ahmann et al., 2006).

Today, at least six major plans address the need for public toilets even as the City closes public toilet facilities, citing budget, health, Portland State University McNair Research Journal 2014 and safety concerns. Relief Works mapped twenty three toilets that were available to the public at the time and emphasized the need for public toilets particularly as a human dignity issue. They argue that since toilet usage is an issue that crosscuts every social classification we know, because everybody must excrete, provision should be a priority where human activity is sufficiently high (Washington, 2014).

Unfortunately, public toilets are not a common part of the urban landscape today. The primary argument for closing public facilities centres around the budget for their upkeep, but the underlying social reason is the fear of unsavoury behaviour, such as sex and drug use, in these public spaces. Not only do policymakers wish to control public behaviour, but there are also concerns about safety in areas around public toilets (Washington, 2014).

In the UK, underground public toilets do still remain but in smaller numbers. Most were closed as they did not have disabled access, and were more prone to vandalism and sex abuse, especially if there was no attendant. A number remain in London and charge on average 50p, but others have been converted into alternative uses such as cafes, bars and even residential properties (Public toilet – Retrieved from Wikipedia,

the free encyclopaedia: https://en.wikipedia.org/wiki/Public toilet Accessed on 13 November 2015 13:08:35).

In Europe and the US, permanent public toilets are often installed and maintained by private firms which are then permitted to use the external surfaces of the enclosures for advertising. The installations are part of a street furniture contract between the out-of-home advertising company and the city government, and allow these public conveniences to be installed and maintained without requiring funds from the municipal budget. Some public toilets have begun to be provided with flushable paper toilet seat covers which allow the user the comfort of knowing that they are not in contact with a surface previously used by a stranger. However, there is no scientific evidence that these prevent the spread of disease (Public toilet – Retrieved from Wikipedia, the free encyclopaedia: https://en.wikipedia.org/wiki/Public toilet. Accessed on 13 November 2015 13:08:35).

The introduction of a 'Self Cleaning Toilet' known as The Sanisette was first seen in Paris and produced by the French company JCDecaux. It works by cleaning and disinfecting the toilet automatically, within 60 seconds after a person has finished using it (Public toilet – Retrieved from Wikipedia, the free encyclopaedia: https://en.wikipedia.org/wiki/Public toilet. Accessed on 13 November 2015 13:08:35).

2.4 Public Toilets management in Nigeria

In Nigeria, the Local governments built and manage public toilets in their respective domains. Some of the public toilets are built and operated by private individuals. The ministry of women affairs and poverty alleviation also built some public toilets and handed them over freely to private individuals to manage, as a sort of poverty

alleviation by the state government (Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toiletsAssessed on 21 November 2015 09:49:42).

The deplorable state of many public toilets recently drew the attention of the Lagos State House of Assembly. The lawmakers stated that the dysfunctional and poor sanitary conditions of most public toilets in the state could result in the spread of diseases. Some of the problems with the public toilets include total disregard for hygiene by the managers and operators of such facilities, a situation often aggravated by irregular water supply, lack of provision of toiletries and disinfectants (Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toilets Assessed on 21 November 2015 09:49:42).

According to the public relations of the ministry of environment, the maintenance of public toilets was not the responsibility of the ministry. But it is under the management of the ministry of women affairs and poverty alleviation (Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toilets.Assessed on 21 November 2015 09:49:42).

In Lagos, it is common to see people urinating in public places and defecating in open gutters in broad daylight. In IyanaIba, an outskirt of Lagos, the public toilets are managed by elderly men who sits on a platform at the entrance leading to the toilet to monitor what goes on there. The charge to use a public toilet ranges from N50 to N100 (Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toilets.Assessed on 21 November 2015 09:49:42).

Clients are either provided with old newspaper or pointed to a container filled with water and a stack of plastic bowls of different sizes and colours in a corner. Some of the bowls are old and dirty. A client picks one and fills it with water, and proceeds to the latrine. Some of the plates which serve as inlets into the pits are darkened with age, while some of the wooden doors which provide privacy for users have given way. Some of the doors have no locks and users/clients may need to either leave them ajar while defecating or look for one that has a lock (Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toilets.Assessed on 21 November 2015 09:49:42).

Inside the toilet cubicle, there is no platform of any kind on which the user of the toilet could put the bowl of water he would use to clean up after use. For this reason the user has to place the water container on the bare ground, and risk possible health hazard in the process. As soon as the user finishes, he/she takes the plastic outside, to replace in the stack placed at a corner. Another user comes and picks among them and the cycle continues. This practice will continue for weeks, months and years (Public Eyesores Called Toilets: Assessed on 21 November 2015 09:49:42).

Most public toilets in Nigeria lack sanitary equipment. Some of them have no disinfectants. They do not regularly clean these Public Toilets. They do not also have permanent workers who will work in these facilities. Most of public toilet managers/operators are not bothered about the insanitary conditions of the toilets but are rather more interested in the money made on a daily basis from those using the toilets (Public Eyesores Called Toilets: Assessed on 21 November 2015 09:49:42).

Angelina Kelechi, businesswoman, said that nothing would make her to visit a public toilet in Lagos again. *"For an average lady, such toilets are the easiest way to contact a disease. I had cause to visit one at IyanaIba but I couldn't stay there for more than 15 seconds, because of the heat emanating from the toilet's opening leading to the septic tank. It was more like a pit latrine. As soon as I was inside, I completely lost the urge to ease myself,"* (Public Eyesores Called Toilets: Assessed on 21 November 2015 09:49:42).

2.5 Importance of Public Toilets

The provision of public toilets is a vital public service, helping to improve the quality of life and the experiences of visitors to cities. By helping people have the confidence to move around towns, public toilets support businesses in boosting customer footfall (Public toilets in London, 2011). They are especially important for certain groups, such as the elderly or those with certain health conditions. Public toilets also help to keep the city clean when the pubs and clubs empty late at night and revellers can be tempted to relieve themselves in other, less hygienic places. They are particularly vital for specific groups who have most need for toilet facilities. These include older people, pregnant women, and parents with young children and people with certain health conditions (Public toilets in London, 2011). For instance, we heard from Crohn's and Colitis UK, an organisation representing people suffering from irritable bowel disease, about the importance of public toilets to this group:

> *"Day to day living is affected by a constant anxiety about suddenly needing a toilet and having very little time to find one, and this can have a devastating impact on the ability to engage in activities away from home. The provision of public toilet facilities is, therefore, an issue of great concern to people living with irritable bowel disease"* (Public toilets in London, 2011).

"It's very common that older people and some disabled people choose not to travel because they cannot be sure of finding a toilet, or an accessible toilet. Concerns about finding a useable toilet are also the source of a great deal of stress and anxiety for older and disabled people when they do travel" (Public toilets in London, 2011).

2.6 Types or forms of PTs

Since the first public toilet was built, the type of structure and range of comfort fittings and fixtures within public toilets have changed. Public toilets have evolved from the traditional separate male and female partly open roofed structure tucked out of sight, to the modern automated unisex 'Exeloo' type, which for user safety reasons are placed in full view of the public. Currently there are three different types of public toilets in differing configurations. These are listed below.**(**Bayside Public Toilet Strategy, 2012).

- ❖ Automated 'Exeloo' Public Toilet

These provide automatic paper dispensing, toilet flushing, hand washing soap, hand washing water and hand dryers. They are fitted with needle disposal and sanitary disposal facilities.

Newer models have automatic door opening and closing and self-cleaning function.

Exeloo toilets are all accessible for people with disabilities **(**Bayside Public Toilet Strategy, 2012).

There are three different types of Exeloo installations:

- Exeloo toilet Stand-alone types, which are single unisex cubicle with 2 double unisex cubicles. They can be found in commercial centres (usually in a car parks), parks and along the foreshore.
- Exeloo toilets installed under the roof line of an existing building.

- Exeloo toilet stand-alone, but adjacent to and incorporated with an existing building.

❖ Pavilion Type Public Toilet Incorporated with Other Structures

Pavilion Type public toilets are incorporated within other structures such as sporting or recreational pavilions and Surf Life Saving clubs. These toilets may have separated facilities for male and female with separated entrances to the building. They may contain more than one cubicle and often incorporate a urinal for males. Access to individual cubicles is mixture of being visible from the public areas or from a common space within the building. Some may also have one or more non-automated unisex separate cubicles providing toilet paper, hand washing, needle disposal and sanitary disposal facilities. Some are accessible for people with disabilities, but may not meet the latest minimum internal space and access requirements **(**Bayside Public Toilet Strategy, 2012).

There are two different types of Pavilion Public Toilets installations:

- Public use only with only external access.
- Both public and pavilion users with external and internal access.

❖ Traditional Stand Alone

These public toilets are more conventional and older solid brick, bluestone or concrete type of structure. Traditional toilets have separate facilities for male and female and separated entrances to the building. **(**Bayside Public Toilet Strategy, 2012).They may contain more than one cubicle and often incorporate a urinal for males. Access to individual cubicles is from within the building. Most offer only basic facilities of toilet paper, hand washing and needle disposal. Some along the foreshore also

incorporate change rooms and external shower facilities. Most Traditional toilets are not accessible for people with disabilities. **(**Bayside Public Toilet Strategy, 2012).

- Willis Lane Toilet

Up until recently the Exeloo type toilet manufacturer offered only fully automated public toilets. In response to some concerns about the capital and maintenance costs and perceived fear by some users of the automation, Council has developed its own unisex toilet. This incorporates the best characteristics of the automated toilet but without the many electronic automated functions. The first of this type of toilet is located at the Willis Lane car park, Hampton and has been successfully in operation since 2009. The automated door opening, flushing, soap and paper dispensing and cleaning were made manual **(**Bayside Public Toilet Strategy, 2012).

The Willis Lane fit-out is being use as a template for the conversion of some older Stand-alone toilets in parks and car parks and pavilion toilets at sporting grounds. The manufacturer of Exeloo and manufacturers of other brands of automated toilets have recently begun to offer toilets with various degrees of automation tailored to the clients' requirements **(**Bayside Public Toilet Strategy, 2012).

2.7 History of Public Toilets in Ghana

The British government constructed public toilets in the early 1930s in Accra and Kumasi (Ayee and Crook, 2003). The metropolitan Assemblies delegated the running and maintenance of public toilets to their sub-metropolitan district councils which by 1989 derived 60% percent of their revenues from toilets user charges .The collection of public toilet fees has become a major revenue item because sub-metropolitan district councils have never received adequate grants from metropolitan assemblies to enable them fulfil obligations to provide services such as building ,installing and

maintaining public toilets, lavatories and urinals and promoting and safe guarding public health in their areas (Ayee and Crook, 2003)

The 1980s saw more rigorous interventions in the sector with the commencement of the International Drinking Water Supply and Sanitation Decade in 1981. Sanitation policy within this period has been cited in relation to the role of public toilets in Accra and Kumasi and this has proven to be fascinating and complex. Nonetheless it provided a basis for understanding the complexities and dynamics at work in sanitation issues in Ghana.

Ayee and Crook (2003) reported that, in 1982 before the PNDC came into power, the use of public toilets in Accra and Kumasi was free. The same source further explained that, management of public toilets in Accra and Kumasi was done by the then city councils of both cities respectively. The public toilets were cleaned by paid sanitation officers but unfortunately they and their supervisors were poorly motivated which led to poor management of public toilets and a deterioration of sanitary conditions (Ayee and Crook, 2003). The PNDC's populist approach to politics, with its insistence on the spirit of public participation and community ownership, motivated the people's Defence Committees and later the committees for Defence of the Revolution (CDRs) to take over the management of the public toilets in the two cities (Dzorgbo,2001).

Minimal fees were charged to enable them to use the proceeds to maintain the facilities. The collection of the fees was quite easy because, with the populist wind blowing at the time, the users were ready to pay for what they felt would be a better, more "locally owned" service. (Ayee and Crook, 2003).

The involvement of the CDRs in the management of public toilets brought some improvements (Frantzen and Post, 2001). However, the misuse of fees led to poor

maintenance and decrease in quality of toilet facilities. The relatively good management provided during the early phase of the CDR experiment left a perception that public toilets could be run effectively by the "community" (Ayee and Crook, 2003).

Following the implementation of an ambitious national decentralisation programme in 1989, the management of the public toilets in the two cities (Accra and Kumasi) reverted to the municipal governments, now termed Metropolitan Assemblies (Ayee and Crook, 2003). However this was not done without a few incidents (Ayee, 1993). For instance, at Alajo a suburb in the Ayawaso Sub-Metropolitan District in Accra, there was a tussle between the Sub-Metropolitan District Council and the CDRs of the area over the ownership of the public toilets which led to the burning down of a CDR office. Similar conflicts between the CDRs and the Sub-Metropolitan District Councils over who owned the public toilets in other parts of the country (Ayee and Crook, 2003).

2.8 Public Toilets Management in Ghana

Since the creation of the democratically elected Metropolitan Assemblies and the 1989 decentralization program, policies for responding to the environmental health public toilet management has been gravitating towards: privatization of waste collection and public sanitation through franchising and contracting out; and encouraging more community-based participation in the provision of local cleansing and sanitation services, principally through engaging "micro-enterprises" for local waste collection, and franchising management of public toilets to approved local businesses and community groups. Where citizen self-help groups and neighbourhood associations have sprung up, officials at the Metropolitan, Municipal and District

level have been attempting to provide support for "clean-up" campaigns (Ayee and Crook, 2003).

Metropolitan, Municipal and District Assemblies (MMDAs) are mandated by national legislation (Act 462) to provide municipal services and facilities for the use of the various communities, organizations and individuals within their respective areas of jurisdiction. Following from the above, this mandate covers the provision, operation and maintenance of public toilets, in both commercial centres and high-density, low-income residential neighbourhoods (MLGRD, 2003).

2.9 Ghana's Sanitation Policy in the Context of Managing Public Toilets

At the national level, there are four ministries involved in sanitation. The Ministries of Local Government and Rural Development (MLGRD) and Water Resources, Works and Housing (MWRWH) have been the primary ministries involved in policy-making with respect to sanitation and water, respectively. The other two ministries involved in sanitation are the Ministries of Education, Science and Sports (which conducts hygiene education), and the Ministry of Health which handles health data, contributes to policy-making, setting standards, and hygiene education.

Ministry of Local Government, Rural and Development (MLGRD) MLGRD is the lead agency in the sanitation sector. It is responsible for creating and coordinating sanitation policy, issuing guidelines on sanitation services and their management, and for supervising the National Environmental Sanitation Policy Coordinating Council (Republic of Ghana 1999). MLGRD is also responsible for the national Environmental Sanitation Policy. The environment portfolio of the ministry has only

recently been added; prior to April 2006 the environment portfolio was part of the now-defunct Ministry of Environment and Science (Daily Graphic April 28 2006).

2.10 The use of Public Toilet in Ghana

Public toilets have become an important feature in Ghanaian urban life for two main reasons; firstly, they have become the main facility for people in low income, densely populated or informal settlement areas (Ayee and Crook, 2003).

Secondly, public toilets serve the interest of public health. Without them, people in low income, densely populated areas will be compelled to practice open defecation, which is likely to aggravate environmental health hazards in a country which is already prone to diseases such as malaria, diarrhoea, dysentery, cholera and bilharzia.

According to Antwi-Agyei (2009), in Ghana the majority of urban households depend on public toilets and other unimproved latrines. In Kumasi, at least 40% of the population is estimated to use public toilets, of which there are about 365 serving about 400,000 people (Burra *et. al.*, 2003).

History of public toilets in Ghana may be traced back to the colonial period. Before colonial rule, residents in Accra, Kumasi and other Ghanaian towns used pit-latrines located at the outskirts of the community to minimise stench and prevent flies, which were considered environmental hazards (Ayee and Crook, 2003). However, as a result of population growth with its attendant public health hazards, the use of pit latrines became obsolete (Ayee and Crook, 2003).

The British government consequently introduced the household "bucket latrine"" system with "night soil"" collection which became dominant and constructed public toilets in the early 1930s in Accra and Kumasi (Ayee and Crook, 2003). The number of public toilets increased during the post-colonial period not only because of policies

pursued by successive governments but also the practical problem of dealing with rising population in the two cities (Ayee and Crook, 2003).

2.11 Public Toilet Policy in Context

The Public Toilet Policy in general should seek to support the Metropolitan, Municipal and District Assemblies' vision and strategic objectives of appropriately managing public toilets and to provide the community with guidelines for the provision and management of public toilets (Central Coast Council, 2013).

The objectives of a comprehensive public toilet Policy are to: Provide quality, accessible and appropriately located public toilet facilities to meet community needs, provide a framework to manage public toilet assets throughout Central Coast, provide a framework to assess the need for new toilets, whether they be renewed or refurbished or be removed and not replaced and promote the sitting and design of public toilets in accordance with Crime Prevention Through Environmental Design (CPTED) principles (Central Coast Council, 2013).

2.12 National Environmental Sanitation Policy

Ghana's national Environmental Sanitation Policy (ESP) was developed in 1999 in consultation with a variety of stakeholders and covers the broad spectrum of environmental sanitation including solid and liquid waste, industrial and hazardous waste, storm water drainage, environmental and hygiene education, vectors of disease, and disposal of the dead The policy identifies many of the major problems and constraints in environmental sanitation, including the lack of assigned roles for governmental bodies, the lack of capacity and skilled professionals at all levels, and the problems associated with the transfer of responsibilities for environmental

sanitation without the corresponding budget, personnel, and equipment transfers (Republic of Ghana, 1999).

The policy then lays out its strategy to deal with these problems. Key items in the strategy include: (i) defining the roles and responsibilities related to environmental sanitation of institutions from the national ministries down to unit committees, community organizations, and the individual; (ii) the privatization of environmental sanitation services; (iii) the creation a National Environmental Sanitation Policy Coordinating Council (NESPoCC) and a District Environmental Sanitation Fund (DESF); and (iv) the phasing out of pan latrines (by 2010). Targets were set for 2020 (except for the phase-out of pan latrines, which was targeted for 2010). This has allowed the government a lot of flexibility. Each of the above components is examined below. (a) Roles and responsibilities. The policy clearly states the role of actors at a variety of levels of government ("MLGRD shall be the lead sector agency (Republic of Ghana, 1999).

However, the policy is in need of an update to include the roles of the MWRWH and Community Water and Sanitation Agency (CWSA), and to clarify the roles of some other institutions and ministries (e.g., Ministry of Heath) (Tayler & Salifu, 2005).

(b) Privatization of environmental sanitation services. Privatization of environmental sanitation services had already occurred in Kumasi by 1999, but the ESP clearly states that this is to be expanded to the rest of the country. Services that are supposed to be provided by the private sector include the provision and management of septic tanks, the construction, rehabilitation and management of all public baths and toilets, solid waste collection (both door-to-door service and from communal containers), and cleaning of specific sites (e.g., markets, lorry parks).

(c) NESPoCC was set up in 2000, and consists of representatives from relevant government agencies (MLGRD, MWRWH, Ministry of Health, etc.), NGOs (represented by ProNet), and the private sector (Republic of Ghana, 1999). Its main purpose is to "coordinate policy and increase the profile of sanitation". For the most part, however, it has been non-functional (DANIDA, 2003).

(d) Phasing out of pan latrines. The KMA "ceased responsibility for emptying bucket latrines" in 1986, though most workers continued their jobs through the private sector (Saywell and Hunt, 1999). Officially, there have been no public bucket latrines for many years, however on a brief tour of public toilet facilities, one such facility was observed. Many homes still use bucket latrines, and it is hoped that these will be converted to some other type of toilet by 2010. The KMA runs an incentive programme for households to build private toilets, and to convert bucket latrines into other types of toilets (e.g., KVIPs).

2.13 Public Toilets usage in Ghana and Upper West Region

In Ghana, the various types of public toilets are; water closet, pit latrines, Kumasi ventilated improved pits (KVIP), bucket /pan latrines. The proportion of households using public toilet facility has increased from 31.4 percent in 2000 to 34.6 percent in 2010. On the other hand, the proportion of households that use Pit latrine reduced from 22.0 percent in 2000 to 19.0 percent in 2010. Similarly, the proportion of households without toilet facility decreased slightly from 20 percent in 2000 to 19.3 percent in 2010. The proportion of households using WC has increased from 8.5 percent in 2000 to 15.4 percent (Population and Housing Census, 2012).

With the exception of the three northern regions, public toilet is the main toilet facility used by large proportions of households in all regions, ranging from 30 percent in

Volta to 44 percent in Brong Ahafo. More than 72 percent of households in the three northern regions have no access to a toilet facility (Population and Housing Census, 2012).

2.14 Types of Public Toilets Constructed and Used in Ghana

Public toilet facilities in Ghana are mainly built for momentary population and places of intense public activities, but these facilities are seriously relied upon by households within their catchment areas. This is because households without toilets at home have to rely on public toilets (MLGRD and LGS, 2010), and those who cannot access one use the bush or beach for their toilet needs.

2.14.1 The Aqua Privy

One of the commonest types is the Aqua Privy, also known as the Septic Tank Latrine or, sometimes, the "bomba" toilet. In a true aqua privy, the water level in the tank is maintained by regular addition of water and the presence of an overflow mechanism leading to a soak away or drain field, as in a conventional septic tank installation. A drop- pipe is attached below each squatting hole, extending about 50mm (2") below the water level in the tank, thus maintaining a water seal to provide odour and fly control, whilst allowing for solid material to be easily displaced from the drop-pipe using a simple plunger device (MLGRD, 2003).

However, nearly all such toilets either have no soak away or, if they once did, it is now completely clogged. They therefore function as cess-pools, simply collecting excreta for periodic removal. This means that the "water" level is either well below the drop-pipes (after the tank has been emptied), causing major odour and fly problems, or too high or even overflowing (when the tank needs emptying), with the same result (MLGRD, 2003).

Such toilets operating in this manner are grossly unhygienic and cannot be considered adequate. They should be converted to proper aqua privies by the addition of a soak away or drain field, suitable plumbing arrangements to ensure adequate water input (possibly wastewater from washing facilities) and the repair of all drop-pipes to ensure a water seal at all times. Where space is restricted or ground conditions are unsuitable, a second tank or soak pit of 20m3 capacity may be constructed so that when the main tank is dislodged, water can be sucked from the second tank to top up the main tank (MLGRD, 2003).

Very often, dislodging is only incompletely carried out, resulting in the formation of a cake of very old sludge in the lower part of the tank. This may over time become almost as hard as concrete and can be very difficult to remove. It also reduces the effective volume of the tank, thus limiting its capacity to treat the wastes it receives (MLGRD, 2003).

Another problem with this type of toilet is that the absence or inadequate maintenance of vent pipes further increases foul odour by the failure to ventilate the gases to atmosphere. More importantly, the lack of proper ventilation allows the build-up of methane gas, which may explode if ignited. Indeed, one of the causes of such explosions is the disposal of cigarettes which users smoke in order to mask the stench arising from the poor ventilation (MLGRD, 2003).

2.14.2The KVIP

Another common type of toilet is the KVIP (Kumasi Ventilated Improved Pit latrine). This operates on the principle of alternating pits. One pit accumulates excreta until full, when it is closed off and the alternate pit is used. The first pit then remains closed for at least two years, allowing for the excreta to decompose and become

harmless and inoffensive through natural processes. This is emptied manually, the pit is put back into use and the second pit is closed off to allow for decomposition (MLGRD, 2003).

Where the two-year cycle can be maintained, this is an excellent technology which is cheap, simple and hygienic. However, experience has shown that in virtually all cases where the KVIP is used as a public facility, the rate of use is such that it fills up within weeks or months and therefore has to be emptied mechanically (using a tanker truck). This in itself can cause problems as most KVIPs are built with no lining on the bottom of the pit. Mechanical emptying can therefore damage the base of the pit and may in severe cases lead to the collapse of the structure (MLGRD, 2003).

It should also be noted that where multiple units are constructed such that two cubicles share a single pit, the ventilation system does not function effectively and odour problems arise. Also, inadequate maintenance of fly screens can lead to poor ventilation if they become blocked or, alternatively, excessive fly breeding if they are damaged (MLGRD, 2003).

2.14.3 Water closet/Flush Toilet

A flush toilet is a toilet that disposes of human liquid and solid waste, by using water to flush it through a drainpipe to another location for disposal, thus maintaining a separation between humans and their excreta. The sanitary fixture is distinctly different from a urinal, which is designed to handle only liquid waste.

Flushing mechanisms are found more often on sitting-style toilets, but many squat toilets also are made for automated flushing. Modern toilets incorporate an "S", "U", "J", or "P" shaped bend that causes the water in the toilet bowl to collect and act as a

seal against sewer gases. Since flush toilets are typically not designed to handle waste on site, their drain pipes must be connected to waste conveyance and waste treatment systems (https://en.wikipedia.org/wiki/Flush_toiletAccessed on 09 October 2015 17:56:17).

2.15 Operation and Maintenance of Public Toilets

The operation and maintenance of public toilets is critical in ensuring the sustainable and hygienic use of the facilities provided for the community. Operation and maintenance activities are to be carried out in accordance with the national standards (Mooijman et al, 2013).

It is very important that the desired population uses the toilet. An excess number disrupts the alternating arrangement and the toilet will not function as designed. Doors to the privy rooms must always remain shut even when the toilet is not in use. The drop hole in use must never be covered. This will disrupt the flow of air into the pit and would cause odour to remain in the rooms of the toilet. The drop hole not in use must be sealed such that it will not be used but should be easily unsealed when it is time to alternate. Only soft materials anal cleansing materials must be used. All anal cleansing materials should be put into the pit. Anal cleansing material must NOT be kept in a basket or box in the chamber for waste paper. This will attract flies and other insects. The immediate surroundings of the toilet must be kept clean and weeded regularly. This will prevent rodents from entering the toilet. Urinals must be checked regularly to ensure water flows through properly to avoid smells. Hand washing facilities, taps and plumbing work must be checked regularly to ensure they are operating as designed and there are no leakages (Mooijman et al, 2013).

Defective vent pipe must be replaced immediately. A little water must be poured down the vent pipe at the end of each month to remove cobwebs. Privy rooms must be swept daily to keep them clean. Privy rooms must be scrubbed to remove remains of faeces and urine. Disinfectants must be diluted before use. Tree branches overhanging the toilet must be cut. This impedes the flow of light down the vent pipe. Cracks that appear on the structure must be professionally assessed and repaired immediately. Fly screen must be inspected and changed half yearly. If found to be torn during inspections, it must be replaced immediately. Repair any locks that get damaged immediately. Pits must be alternated when faecal matter rises up to 500mm below the squat slab (Mooijman et al, 2013).

2.16 Planning standards for public sanitary sites

Private houses should all have their own toilets. Public toilets should therefore be provided for users of public places, such as marketing and recreational areas and public transport terminals which attract mostly out of town visitors, or in areas where the existing settlement is to be left in tack and improved sanitation is provided as part of the upgrading of the area. Institutional areas such as hospitals, clinics, schools etc should be provided with well-maintained toilets for the use of visitors and residents (Planning Standards, 2010).

The selection and development of a site for a public toilet without the water flush should be based on the following considerations:

(i) Availability of regular water supply for clearing and maintenance purpose.

(ii) Adequate light for good visibility for both day and night.

(iii) Adequate ventilation

(iv) A toilet block should consist of eight holes per toilet building (four for men and four for women) minimum, with a recommended standard of one hole for 50 persons for a neighbourhood of 5000 persons (min). Site size should be a minimum of 50sqm (Planning Standards, 2010).

(v) In busy commercial and recreational areas with large number of visitors, public toilets should be located within ½km distance of each other wherever possible (since actual location of facility would depend on the availability of suitable land at desired distance and site conditions) (Planning Standards, 2010).

2.17 Framework for the Management of Public Toilets in Ghana

2.17.1 Public Management

The Assembly may set up a management team comprising personnel from the Waste Management Department/Unit as a centralized organization to operate and maintain all public toilets within the area of jurisdiction of the Assembly. Alternatively, units may be set up at Sub-Metro or Town Council level for the same purpose (MLGRD, 2003).

However, experience indicates that this is not an effective approach, as management may not be able to handle the workload and to respond promptly to the concerns of stakeholders. In addition, problems arise with respect to revenue collection and management of funds, both in terms of leakage and of retaining revenue for purchasing essential supplies, utilities etc. Assemblies are advised to avoid the use of this model except as a last resort and for the short term only (MLGRD, 2003).

It should be noted that previous tendencies to regard public toilets as a source of income for other projects and programmes of the Assembly is one of the main factors

that has led to their deterioration. Significant resources are needed to maintain the toilets in a hygienic and acceptable state, but this may not be recognized by Assembly Members. It has been established through experience that properly supervised private enterprise is capable of delivering a much higher and more consistent standard of service (MLGRD, 2003).

The lack of effective supervisory mechanisms is one of the major shortfalls of public management. Assembly Members are supposed to represent the interests of the residents of their electoral area with regard to the provision of public services; if they are, as managers of public toilets, also the providers of such services, they cannot be effectively called to account (MLGRD, 2003).

2.17.2 Community Management

This is a variation on public management whereby facilities are managed by a committee of public officers of the Assembly and community representatives, referred to as Toilet Management Committee (TMC). The prerequisite for consideration of a TMC is that the community within the catchment area requests the Assembly to grant them the dispensation to operate and maintain their facility and can demonstrate their capability and readiness to do so. The membership of the TMC should comprise the following: Representative of Unit Committee, Chairman, Representative of Traditional authority, Representative of Women's Group and the Assembly Member of the area (MLGRD, 2003).

According to this arrangement these representatives of the various sectors listed above must be selected by their respective entities by accepted democratic and transparent means. The Assembly provides oversight and monitors user fee collection, operation and maintenance. This model may be considered for rural communities and well-

organized low-income urban communities. It is not suitable for units with high usage rates, where the larger sums of money involved may tempt unscrupulous TMC members into malpractices (MLGRD, 2003).

2. 17. 3 Franchise Management

Under this arrangement, the Assembly may outsource operation and maintenance from a duly registered limited liability company, whether sole ownership or partnership, selected as described below and operating under terms and conditions explicitly set out in a Franchise Agreement between the two parties. The terms and conditions of this Agreement may include the following: Establishment of an appropriate management organization; Staffing and their roles and responsibilities; Provision of tools, equipment and materials for Operations and Maintenance tasks; Tasks to be undertaken and standards to be maintained; User fees agreed and published in Fee Fixing Resolution of the Assembly; Franchise Fee to be paid to the Assembly by the franchisee; Sanctions, dispute resolution procedures and termination (MLGRD, 2003).

It is argued that the model has the potential to provide a framework to guide the Assembly discharge its responsibility to provide public toilets with no drain on its resources and also receive income (Franchise Fee). Supervision and monitoring may also be contracted out at no cost to the Assembly by including the cost in the Franchise package (MLGRD, 2003).

2.18 Problems of PTs management in Ghana

According to WSUP (2011), though the public toilet system may be suitable in some areas, there are certain challenges that may be faced with. Some of these challenges include;

- Public toilets are often dirty and unhygienic because of poor design, poor construction and/or poor maintenance (e.g. irregular emptying, no repairs). In addition, they are often not kept clean by users and operators, with insufficient funds for cleaners and cleaning materials. They are often clean and hygienic when first built, but left in very poor condition after a couple of years.
- Public Toilets may be unsafe, particularly at night and particularly for women/children, because they are often in dark places with poor or no lighting.

- Public toilets lack privacy and may be embarrassing for some users: in some cases doors may be broken or missing so that the basic privacy is lost.

- Independently of safety issues, the distance to a public toilet may often be dissuasive.

- User charges may be dissuasive, because people cannot pay or are unwilling to pay. In particular, daily use of pay-per-use public toilets is often clearly unaffordable for very poor families.

- Public Toilets should have facilities for washing hands with soap but mostly these facilities are not available.

- Public toilets may lack facilities suitable for use by children or disabled people. In addition they may also lack facilities for sanitary towel disposal for menstruating women and girls.

- Public toilets may be taken over by local street gangs or political factions and this may often mean that they are run for excessive profit with little regard to affordability, quality of service or reinvestment (WSUP, 2011).

CHAPTER THREE

Materials and Methods

3.1 Introduction

This chapter describes the research methods used for the study with the aim of achieving the research objectives. The chapter covers the description of the study area, the study design, sample size determination, sampling techniques, the data collection process and the data analysis.

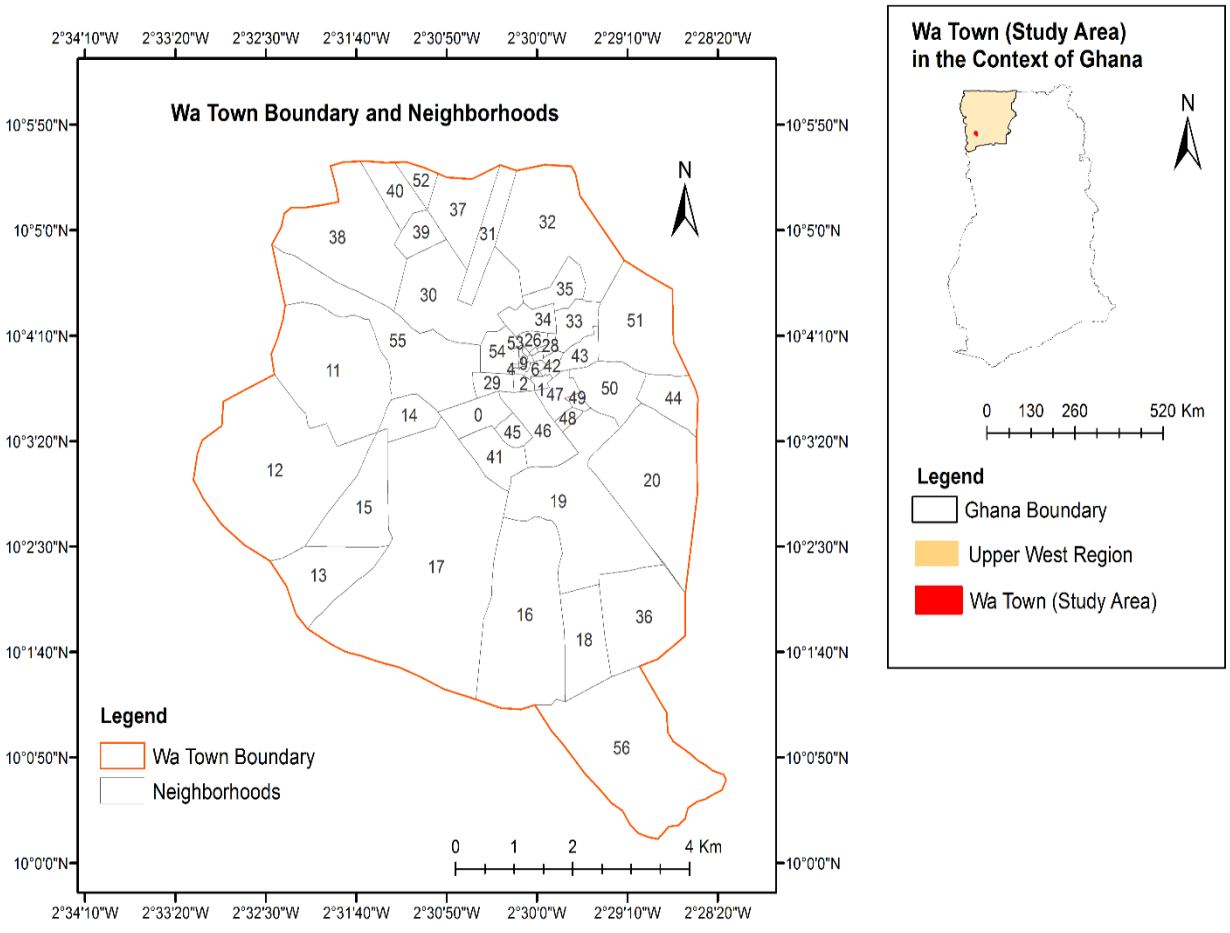


Figure 3.1 Map showing Wa Township, the study area.

Source: Field Survey, 2015

3.2 The study area

3.2.1 Location and size

This study was conducted in the Wa Township, which is also the Upper West regional capital. Wa is located between latitude 10°5′50" N and 10°0′0"S and between longitude 2°33′20"W and 2°28′20"E as shown in figure 3.1 above. It is the largest and most developed town in the Upper West Region (UWR) with an estimated landmass of 56.2 sq km, which is about 32% and 2.6% of the regional and national land mass respectively. The population of Wa Township was estimated at 135,638 (Female 65,887 / Male 69,751) according to the 2010 population and housing census with a growth rate of 2.7%per annum. Wa is the most populous town in the region and surrounded by smaller towns and rural settlements.

3.2.2 Environment and weather

Wa is in the southern part of the Sahel, the semi-arid area south of the Sahara. The average annual rainfall is about 879mm, and almost all of it occurs between May and October. Following the May to October rainy season is a cool dry period called the Harmattan. This north-easterly wind (Harmattan) is a steady, often dusty wind which blows from the Sahara Desert into the Gulf of Guinea between the end of November and the middle of March. The hottest period of the year is between February to April when daytime temperatures can go as high as 40 °C.

3.2.3 Economy and agriculture

Despite its urban nature, Wa is in many ways still an agricultural community and majority of the population make a good portion of their living in small scale farming.

The main crops cultivated include maize, millet, yam, okra and groundnuts. Upland rice is also farmed in few areas of the rural part of Wa.

3.2.4 Education

Wa plays host to a few renowned educational institutions, which include the Wa campus of the University for Development Studies, the Health Assistant Training School and the Wa Polytechnic. Others include; the Wa Senior High School, St. Francis Xavier Minor Seminary school, Wa Technical High School, Islamic Senior High School and Wa Technical Institute.

3.2.5 Water and Sanitation

The water supply and sanitation situation in the township is poor. It is estimated that about 41.3% of the people faced severe water shortages especially in the dry seasons. Major sources of drinking water in the township include the Small Town Water System (STWS), boreholes, hand dug as well as rainwater.

The city authorities have been grappling with the problem of sanitation, especially in relation to the disposal of solid waste. As one of the fastest growing cities in the country, Wa is faced with daunting challenges in the management of both solid and liquid waste, water shortages and congestion. The limited access to safe drinking water and poor sanitation has combined to expose many people to health hazards which accounts for the low standard of living of the people (UN-Habitat, 2009; GLSS, 2010). The town is unsewered whiles refuse are dumped haphazardly. The drainage system is poor and many of the gutters are choked. This affects households hygiene practices and contributes to skin, eye infection and faecal-oral transmission of diseases (WMA, 2010).

Available data from the Wa Municipal Assembly (WaMA) indicates that only 8.3%of the households in Wa Township have access to toilet facilities in use within their homes and 6.2% use pit latrines. Majority of residents in the township depends largely on the few public toilets available. Most people still use bush or open field for defecation constituting about of 72.9% of the population in Wa (WMA, 2010).

However, the extremely bad shape of these public toilet facilities and the distance involved in accessing them may not motivate people in the township to use them. The problem is worsen by population pressure due to the establishment of the University for Development Studies Wa Campus, the Health Assistant Training School and the Wa Polytechnic where a majority of the students live in rented houses off-campus without toilet facilities (WaMA, 2010). Open defecation is increasingly alarming in some sections of the township putting residents at the risk of sanitation related diseases such as cholera, diarrhoea and typhoid among others. Children below ten years are often seen defecating around the premises of these public toilet facilities and waste containers freely giving a very bad smell to residents within that vicinity.

According to the Municipal Health Service 2010 annual report on sanitation related diseases, a total of 73,903 cases were recorded. Out of this, typhoid and diarrhoeal diseases closely linked to the problem of open defecation accounted for 624 and 5,300 cases respectively.

3.3 Study Design

The study design adopted was a cross-sectional survey. This design was chosen in view of the fact that it was a study covering a relatively short duration and it involves a systematic approach to data collection and presentation to reflect a given situation

within the period of study. Thus variables relevant to the study were gathered from a cross section of communities to achieve the objectives of the study.

3.4 Sample Size and Characteristics

All 44 public toilets (PTs) in the Wa Township were included in the study. All the attendants of PTs were also interviewed.

3.5. Purposive sampling

The major officers and institutions who are stakeholders in the sanitation management in Wa Township were interviewed. These people were selected because they had specific knowledge relating to sanitation and PT management. The head of department (HOD) of each department was selected for interview. In the absence of the HOD, the immediate assistant was selected.

Table 3.1 showing the names of the Department and the number of people selected in each department

Name of Department	**Sample size**
Municipal Environmental Health Department	1
Wa Public Toilet Managers Association	1
Building Inspectorate Department	1
Municipal Health Directorate	1
Municipal Disease control Unit	1
Municipal Health Information Unit	1
Community Water and Sanitation Agency	1

Wa Municipal Assembly Planning Department	1
Total	**8**

The interviews covered themes on the number of public toilet facilities, their management and their distribution within the town to enable the spatial mapping of the facilities as well as their detailed knowledge about the enterprise.

3.6 Data Collection and Study Instrument

1. All PTs within the Wa Township were visited.

2. Each time a PT was visited, its geographic coordinates were taken using an etrex SUMMIT GARMIN Global Positioning System Device (Hand-held). A GPS device was placed close to the PT to record the coordinates. The latitude and longitude coordinates of the facility was taken in degrees, minutes and seconds and converted into decimal degrees.

3. Each time a PTs was visited, we observed; types of PT, constructional details, state of PTs and Management structure. This helped in assessing the premises of public toilets in terms of sanitation and hygiene. It was also to understand and experience how it felt to use these toilet facilities.

4. Each time, photographs of premises and surroundings of PTs were taken using a canon PC 2006 4.3 V/16 mega pixels digital camera.

5. The structured questionnaires was designed and used to solicit the views of attendants on issues related to these main headings; demographic characteristics, management, Technical, condition of the public toilets and Hygiene. The questionnaires were administered by the researcher reading the questions to the

respondents and recording the answers accordingly. This was to ensure that all the questions were understood by respondents.

6. An interview Guide was used to interview officers in various institutions charged with the management of sanitation in Wa. The questions on the guide were read to them and the answers recorded. These officers include; Environmental Health Officer, Building Inspectorate Officer, Municipal Health Director, Public Toilet Managers Association of Wa, Municipal Disease control officer, Municipal Health Information Officer, Community Water and Sanitation Agency Officer and the Wa Municipal Assembly Planning Officer. If an officer was not available, his/her assistant or representative was interviewed.

7. The interviews were done with the assistance of two (2) trained research assistants. They were first given a day orientation and training. In all, three months were used to collect the data.

8. After training the research assistants, the instruments for the research study were pre-tested in Tamale Township, which has similar characteristics as that of Wa Township. All possible problems were identified and rectified before the administration of the questionnaires and collection of data during the actual research work.

9. Geographical coordinates were converted into decimal degrees, transported onto an excel sheet, imported into an ArcMap software and converted into points. These points were assigned attribute information such as types of toilets, number of seater etc. The projection parameters were changed from the default World Geographic System 1984 (WGS 84) to projected Universal Transverse Mercator Zone 30 North. It was then overlaid with existing country Shape files and layout maps were produced showing how the various public toilets are spatially distributed within Wa Township.

10. Data obtained from the field was analysed using Statistical Product and Service Solution (SPSS). The data were coded by assigning numbers to verbal responses such that raw data was re-organised into a form easy to enter into the computer software. In the case of open ended questions, simple responses were grouped into one category till all possible categories were obtained to develop a nominal scale category for the variables under study. Data were then cleaned and edited to check for accuracy in data entry and all coding errors in the data entry. Results were presented using descriptive statistics such as tables and frequencies where appropriate.

Data obtained from the in-depth interviews were grouped into themes and categories with reference to the research objectives. The emergent narrative themes were stated and samples of dialogues that captured each theme displayed. This was, done after a transcription and translation of the recorded information from the field. Issues arising from the interviews were then described and analysed.

CHAPTER FOUR

Results

4.1 Public Toilets in Wa Township

In all, 44 Public toilets in the Wa Township were visited and assessed. Of this number, 42 of them (95.46%) were of Kumasi Ventilated Improve Pit (KVIP) type. These were constructed and owned by the Local authority of the Wa Municipal Assembly and leased to private individuals to manage. Only two (4.546%) were constructed and managed by private individuals and these were of the water closet (WC) type.

All the public toilets visited were constructed with separate compartments for males and females. Clear directions or pictures were clearly marked on the walls indicating the compartment for each sex group.

Two (2) of the toilets visited were non-functional and not in use. These two non-functional PTs were owned by the Wa Municipal Assembly. These were located in the Central market (Kejetia) and Zongo areas.

4.2 Sitting Capacity of Public Toilets in Wa Township

Of all the PTs in the Township, the sitting capacity ranged from 10 to 24 squat holes. The capacity of the toilets is shown by Figure 4.1 below.

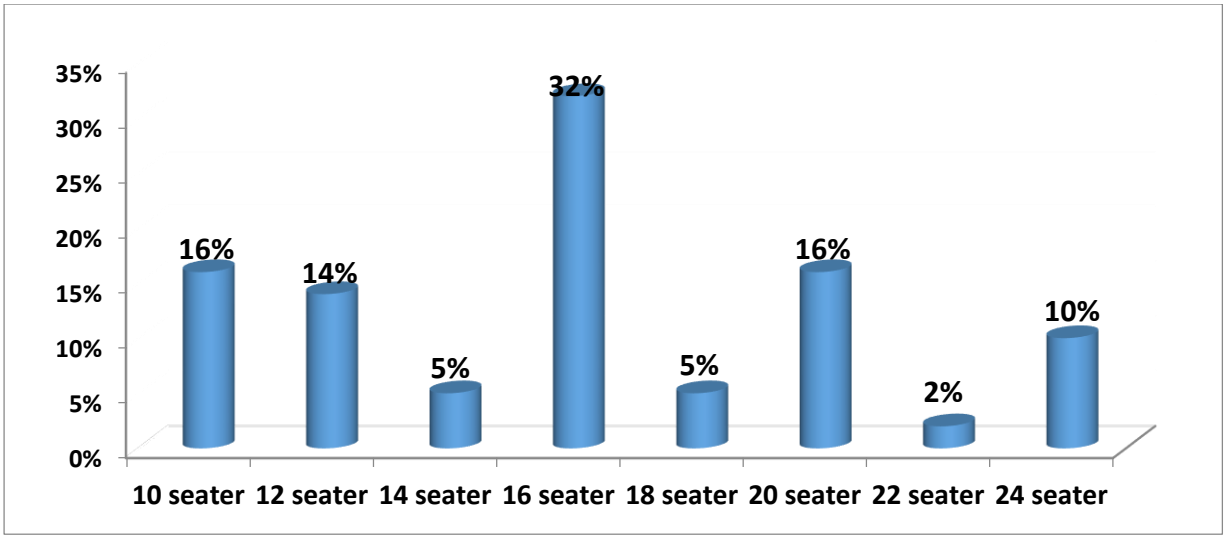


Figure 4.1: Sitting Capacity of Public Toilets

Source: Field Survey, 2015

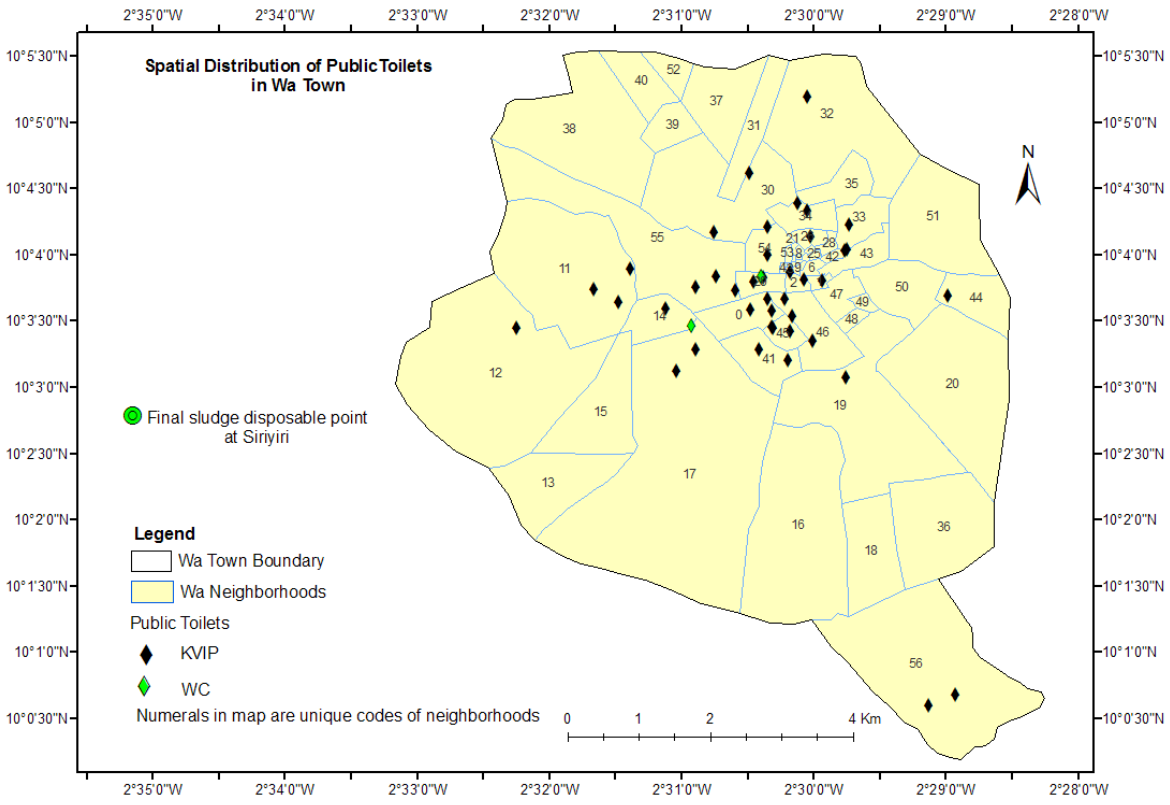


Figure 4.2; Locations and types of public toilets

Source: Field Survey, 2015

The map in Figure 4.2 shows the location of the PTs in the Township. From the map, the two Privately Owned PTs (POPTs) are located in Wapaani and Kpaguri areas with

a capacity of 22 and 24 seats respectively. The remaining 42 Government Owned PTs (GOPTs) are distributed all over the township. All the PTs are located in the low-income residential areas of the township and in the central business areas, serving both residential and transient users. Some of these places included; Zongo, Sokpariyiri and Wapaani. PTs were not found in many modern residential and developed areas such as the SSNIT flats, Catering Rest house and Danko extension areas.

4.3 Type of PT and the state of cleanliness

PTs visited were of two (2) types of designs i.e. KVIP (42 PTs) and Water Closet (WC (2). Both WCs had their water supplied from two mechanized boreholes connected to a water tank in order to provide constant water for flushing and cleaning. An interview with a toilet manger/attendant revealed that most users of the WC were not familiar with their usage. They either broke the handle or squat on it instead of sitting. Plate 4.1 below shows the state of a WC PT in the Kpaguri area.

Source: Field Survey, 2015

Plate 4.1: The state of a typical WC in Kpaguri Area

Source: Field Survey, 2015

Plate 4.2. The state of a typical KVIP in Zongo area

Interviews with public toilet attendants/or managers also showed that all of them had no technical understanding of the working principle behind the KVIP technology. All of them were just concerned about cleaning the facility in the morning and hoping to make good revenue at the end of the day without paying much attention to the effective operation of the technology. The wire mesh meant to be at the tip of the vent pipes were visibly absent on observation. The doors to the cubicles and vent pipes were damaged as well. Plate 4.2 above shows the deplorable nature of a KVIP PT in the Zongo area.

4.4 Ownerships of the PTs and their state of cleanliness

Clients were allowed to smoke in all the GOPTs, which were also the KVIP typebut in the POPTs (WCs) smoking was not allowed in the facilities.

Both Privately Owned PTs were well constructed, managed and maintained whereas 70% of the GOPTs were not well constructed, not well managed and poorly

maintained. The exterior design and state of a typical Government Owned PT is shown by Plate 4.2and that of the privately Owned PT is shown by 4.1.

Plate 4.3; Inside of privately Owned PT located in Kpaguri Ganya area

Source: Field Survey, 2015

The surroundings of the POPTs were also without litter. The sinks, tiles and toilet receptacles were neatly cleaned making the facility user-friendly as showed in Plate 4.3 above.

The GOPTs on the other hand were mostly dirty looking, their roofs worn out, the walls were broken and the doors either removed or hanging. The surrounding of 90.91% (40) of the GOPTs were engulfed with refuse and overgrown with weeds because refuse dams or over flowing refuse containers were located around these toilets. Their surroundings were littered especially with faeces as shown in plate 4.4 below.

Source: Field Survey, 2015

Plate 4.4; showing surroundings of a Government Owned PT in Kambale area

Plate 4.5; showing surroundings of a Privately Owned PT in Kpaguri Ganya area

Source: Field Survey, 2015

The conditions of 70.45% (31) of the GOPTs were deplorable and can best be described as death traps. Maggots and houseflies could be seen both inside and outside these facilities. One can hardly bear the stench that emanated from these GOPTs. In many instances, male users often remove their shirts before entering the facility to reduce the scent on them after using the toilets. The POPTs employed full time cleaners, who are paid monthly unlike the GOPTs, which hired people daily to clean the facilities. Plate 4.5 above showing the clean surroundings of a POPT in Kpaguri Ganya area.

However workers/cleaners in both POPTs and GOPTs did not have protective clothing and equipment to protect themselves from direct contact with the faeces. They worked with their bare hands and feet, which expose them to danger and infections.

4.5 Estimated Average Number of People Who Use Public Toilets

On average, 8,022 people used the public toilet per day in the township with an average of 191 people per facility per day. The patronage was high in the central business area where there were heavy daily human activities.

VARIABLE	**Number (N)**	**% N**
SEX		
Male	**26**	59
Female	**18**	41
TOTAL	**44**	**100**
ETHNIC GROUP		

Waala	22	50
Dagaaba	20	45
Other (s)	2	5
TOTAL	**44**	**100**
EDUCATIONAL ATTAINMENT		
No formal education	26	59.1
Primary	3	6.8
JHS	4	9.1
SHS	4	9.1
Middle sch	7	15.9
Total	**44**	**100**
RELIGIOUS AFFILIATION		
Christianity	21	47.7
Islam	22	50
ATR	1	2.3
TOTAL	**44**	**100**
AGE GROUP		
18 – 30	10	22.72
31 – 50	13	29.54
51 above	21	47.72
TOTAL	**44**	**100**
MARITAL STATUS		
Single	4	9.1
Married	33	75
Divorced	2	4.5
Widowed	5	11.4

TOTAL	**44**	**100**

Table 4.1; Socio-Demographic profile of Respondents

Source: Field Survey, 2015

4.6.1 Sex Distribution of Respondents

A total number of 44 toilet attendants were interviewed of which 59% (26) were males and 41% (18) females.

About 48% (21) of 44 attendants were above 51 years, 30% (13 attendants) were also within 31- 50 years and 23% (10) were within the ages of 18 – 30 years.

The results also revealed that 59% (26) of 44 attendants had never attended formal school. The rest of the 40.9% (18) of respondents had attained some appreciable level of education. Out of the remaining 40.9% (18) attendants who had formal education, about 16.0% (7) of them had been educated to the Middle school level and those who have reached the Primary School, Junior High School and Senior High School levels are 9.1 % (4), 9.1% (4) and 6.8% (3) respectively.

All the attendants had never been given any orientation or training on how to keep these PTs clean.

4.6.2 Marital Status of Respondents

About 75% (33) of the attendants were married, 11.4% (5) were widowed, 9.1% (4) were single and 4.5% (2) were divorced.

4.7 Regularity of Cleaning of Public Toilet Facilities

Only 17% of the respondents asserted that they cleaned the facilities three times in a day. About 29% of respondents said they cleaned the facility once in a day and 54% said they cleaned the facility twice in a day.

Generally, attendants used brooms, liquid soap, Dettol, Parazon, and other chemicals to clean the toilet facilities. About 71% of respondents said they hired other people to clean the facility whiles 27% said they clean the toilet themselves and 2% said they asked their children to clean the toilets.

About 78% of the respondents indicated that they had never done any maintenance work on the facility while 22% of attendants indicated they have done some maintenance work on the facility.

4.8 Hygiene and Facilities in Public Toilets

When knowledge on hygiene was assessed, 61% of the toilet attendants said they had some knowledge on hygienic practices in the operation and maintenance of their facilities but admitted they never received any formal or informal training with regards to hygiene in the management of these PTs. All the 39% of the attendants who did not have any knowledge on hygiene did not also receive any education on proper hygienic practices in the operation and maintenance of the facility.

Of the PTs visited, 11% of them provided water and soap for hand washing after using the toilets, 89% of them did not have any hand-washing facilities. The clients were supposed to find their own water and other sanitizers to wash their hands after visiting the facility. Where water was provided, it was usually not clean and sometimes there was no soap for clients to use.

4.9 Disinfection of Public Toilet Facilities

The study revealed that 82% of the respondents indicated that they sometimes disinfected the toilets while 18% said they had never disinfected their facilities since they started taking care of toilets. Those who indicated that the toilet facility was sometimes disinfected said the disinfection was done by the Wa Municipal Assembly or Zoomlion Ltd. Common disinfectants used include Dettol, Parazon and other chemicals. About 47% indicated that disinfection was done between two to three month whiles 53% said it was done between four months and above.

4.10 Use and Management of Toilet Roll and Paper in Public Toilets

The study revealed that 92% of the attendants provided old newspaper for anal cleansing and 5% and 3% provided toilet roll and water for cleansing respectively. The study further revealed that 76% of the public toilet facilities provided containers for the disposal of the newspapers and toilet roll used by clients while 17% of public toilets do not provide any container. The paper was littered on the floor of the toilets.

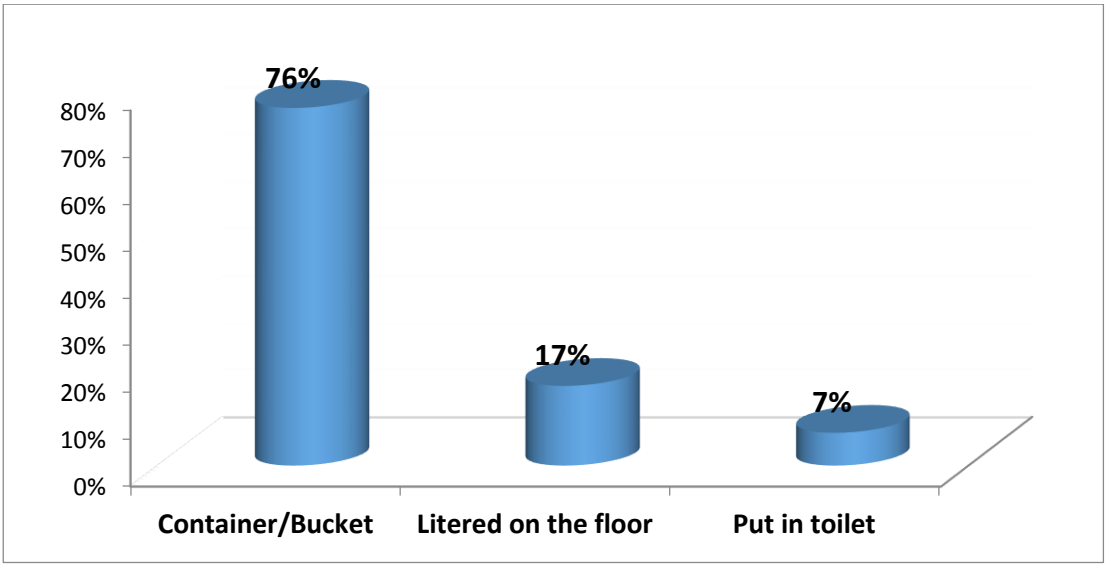


Figure 4.3Use and Management of Newspaper and Toilet Roll

Source: Field Survey, 2015

However 61% of the containers that were provided were in good condition. Anal cleaning materials were eventually burnt or put in communal/waste containers as means of final disposal of the used materials.

4.11 Institutional Role in PTs Management

4.11.1 Drainage of Faecal Sludge

Majority of the attendants said, the Wa Municipal Assembly and Zoomlion Ltd were the two main bodies responsible for the drainage of faecal sludge in Wa Township. Empting septic tank is not regular and therefore compelling PT operators to resort to manual empting of septic tanks shown in 4.11.2. This was supported by the fact that 79% of the respondents indicated that the Municipal Assembly's septic emptier drained their facility whiles 16% said it was the private waste management company Zoomlion's septic emptier that drained their facility. The rest of the 5% of respondents said the sludge was converted into biogas.

4.11.2 Disposal of Faecal Sludge in the absence of Mechanical Cesspit Emptiers

Manual methods of draining were used when operators were not able to secure the service of a septic emptier when the facility was full to capacity. The study uncovers that 48% public toilet facilities disposed their faecal sludge by using a bucket to fetch from the septic tanks and thrown just beside the facility. Also, 21% of the respondents indicated that when the facility was full and they were unable to secure the services of the septic emptier, they usually temporarily close down the facility until such a time that they were able to dispose of the faecal sludge. The analysis further revealed that 16% of attendants used club to pound the sludge so that the dried sludge reduced to provide space for the continual usage of the facility and the rest of the 15% of

respondents resorted to manually fetching and carrying the sludge to the nearest pit they could find to dump it there.

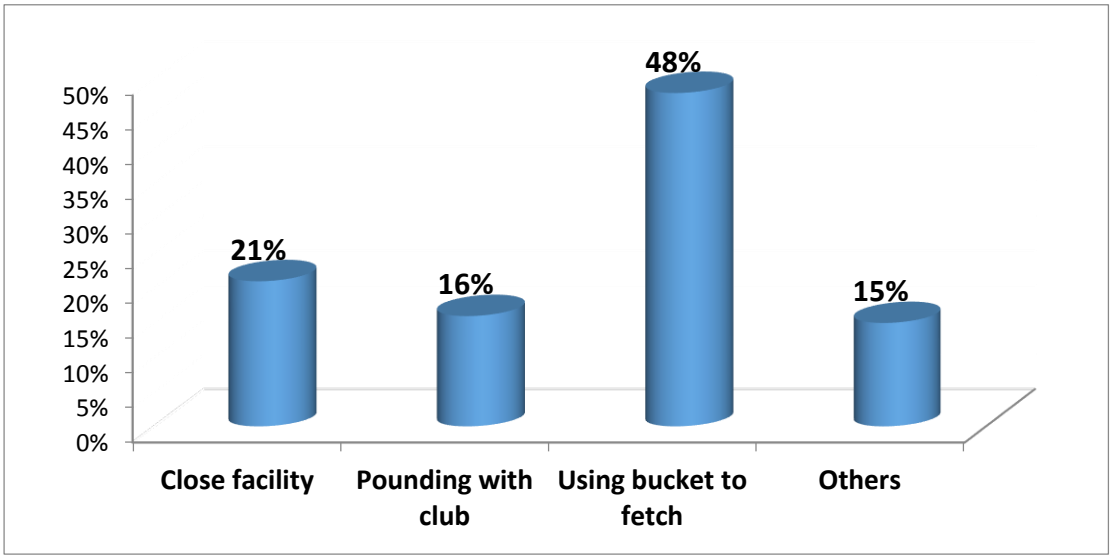


Figure 4.4: Various methods of Faecal Sludge disposal in the absence of Mechanical Cesspit Emptiers

Source: Field Survey, 2015

4.11.3 Availability of Mechanical Cesspit Emptiers and Cost of Draining

The fees charged by the mechanical cesspit emptiers was dependent on the type of toilet, the size of vehicle, the distance and the institution offering the service but within the Wa Township the following was the charge per service provider.

Name	No. of Vehicles	Capacity (Gallon)	Charge per trip (Ghana cedis)
Zoomlion	1	3000	100
WaMA	2	1750	45

Table 4.2 showing fees charged by service providers

Source: Field Survey, 2015

The managers of these public toilets paid Gh¢ 30 to the Wa Municipal Assembly every month as monthly surcharges.

4.12 Challenges in the Operation and Maintenance of Public Toilets

In the operation and management of public toilets in the Wa Township, there were certain challenges that attendants and operators faced. One of such challenge was the fact that most septic tanks were not well covered and sometimes overflew their walls. This situation posed health hazard to the people living around the facility and the Township at large.

Another challenge confronting the operators of public toilets was the absence of electricity in the facilities. About 58% of all the 44 facilities had no electricity in the facilities.

Furthermore, about 95% of the 44 public toilet facilities in the Township were not disability friendly and this became a problem when a disabled person visited the facility.

Inadequate and ineffective maintenance was identified as one of the major challenges confronting usage of public toilets in the Wa Township. The management problem associated with public toilets was mainly operation and maintenance. Water was needed to clean the toilets and, for water closets, a greater amount of water was needed for flushing.

There was also the issue of delay in dislodging of faecal sludge from the facilities and this sometimes led to the closure of the facility or overflowing of the faeces into the surrounding areas of the facility.

Respondents also mentioned that some members of the public sometimes did not have money to pay for the patronage of the facility or some deliberately did not want to pay. This affects the daily sales of the facility and consequently the operation and maintenance of the facility.

CHAPTER FIVE

Discussions of Findings

5.1 Introduction

The discussion section of the report seeks to draw linkages between existing literature and the findings of this study. It also highlights the differences that exist between literature and the findings of this study.

5.2 Types of Public Toilets

The study uncovered that out of the 44 public toilet facilities in Wa Town, only 2 were Water Closet (WC) facilities and these are those owned by private individuals. The rest of the 42 facilities owned by the Assembly were Kumasi Ventilated Improved Pits (KVIPs). An interview with the Wa Municipal Director of Environmental Health Department also revealed that it was cheaper building KVIP than WC. The study also conforms to the report of the MLGRD (2003) that the common type of toilet in Ghana is the KVIP. In Ghana, Metropolitan, Municipal and District Assemblies (MMDAs) are mandated to provide municipal services and facilities for the use of the various communities including the provision, operation and maintenance of public toilets, in both commercial centres and high-density, low-income residential neighbourhoods (MLGRD, 2003). The study agrees with this report since over 90% of the public toilets in the Wa Township are owned by the Municipal Assembly.

5.3 Functionality of PTs in Wa Township

Only two out of the 44 PTs were not working because they were under renovation. These two PTs were owned by the Wa Municipal Assembly. According to the Director of Wa Municipal Environmental Health Department, those facilities were in deplorable state and therefore needed to be renovated. The attendants for both toilets were still found around the premises of these toilets, awaiting the completion of the renovation. These were located in the Central market (Kejetia) and Zongo areas. This was in line with franchise agreement (MLGRD, 2003) that major repairs should be done by the Municipal Assembly.

5.4 Location of Public Toilets

All the PTs were located in the low-income residential areas of the Township and in the central business areas, serving both residential and transient users. Some of these places included; Zongo, Sokpariyiri, Wapaani etc.These arrangements can be attributed to the fact that over 70% of the people mainly in low income residential areas in Wa Township did not have household toilets(Population and Housing Census, 2010). However in some of the low-income areas where PTs were not located, people resorted to other alternatives such as open defecation in nearby bushes or uncompleted buildings than to walk for long distances to nearby areas to use PTs. This confirms the findings of Ayee and Crook (2003).

PTs were scare in high residential areas such as the SSNIT flat, Catering Rest house, Danko extension etc. These areas have modern residential facilities each with toilet facilities.

5.5 Type of PT and the state of cleanliness

Both WCs had their water supplied from two mechanized boreholes connected to a water tank in order to provide constant water for flushing and cleaning. There was constant flow of water for regular cleaning. This made the inside of these facilities clean all the time.

All the KVIP PTs did not have regular water connected to their facilities. They bought water for the cleaning of the facilities. This limited the availability of water for the cleaning of these facilities. Interviews with all public toilet attendants or managers showed that all of them had no technical understanding of the working principle behind the KVIP technology. All of them were just concerned about cleaning the facility in the morning and hoping to make good sales at the end of the day without paying attention to the effective operation of the KVIP technology. The wire mesh meant to be at the tip of the vent pipes were visibly absent on observation. The doors to the cubicles and vent pipes were damaged as well. Per the technical design of the KVIP, they were supposed to be odourless and flies free (WHO, 1992) if the wire mesh and the doors were in good condition. This means that the odour and flies which were found in these KVIPs, could have been handled if the attendants understood the technical principle of keeping the doors shut and only opening them on entry, then the principle of keeping the chambers relatively dark to enhance the control of flies and odour.

Unlike the KVIP technology, the WC toilet disposes off human liquid and solid waste, by using water to flush it through a drainpipe to another location for disposal, thus maintaining a separation between users and their excreta. These therefore make the WC easier to clean and maintain, making them cleaner than the KVIP facilities. WC much cleaner and well-kept than KVIP.PTs should be WC.

5.6 Ownerships of the PTs and their state of cleanliness

Majority of the GOPTs were in deplorable states. They are poorly managed as compared to the POPTs. Therefore Privatisation will reduce cost, improve cleanliness and increase usage. An interview with the Director of the Wa Municipal Environmental health revealed that the situation wasprobably attributed to the lack of consistency in management due to party politics. Whenever there was a change in government there was also corresponding change in the management of GOPTs. This is confirmed by the findings of Ayee and Crook (2003). Management of GOPTs were mainly franchised to Assembly members. They had the power to decide who should be managers of these PTs. These toilets managers did not follow the franchised agreement, they managed the PTs poorly.

The POPTs employed full time cleaners, who were paid monthly unlike the GOPTs, which hired people daily to clean the facilities. These managers were only there to make profits without taking good care of these PTs.

Workers/cleaners in all the PTs did not have protective clothing and equipment to protect themselves from direct contact with the faeces. They worked with bare hands and feet, which is dangerous and could easily be infected.

However, the common problem faced by both ownership types was the use of water for anal cleansing. It sprinkled water on the floor and made the facilities wet, slippery and dirty.

5.7 Usage of toilets

According to Mooijman et al, (2013) only soft anal cleansing materials must be used in public toilet facilities. All anal cleansing materials should be put into the pit. Anal cleansing materials must not be kept in a basket or box in the chamber for waste paper

as this will attract flies and other insects. On one hand, the results of the study corroborates with the argument of Mooijman et al as attendants provided clients with newspapers and toilet roll to be used as anal cleaning materials. However, on the other hand the results disagree with that of Mooijiman et al (2013) with respect to management of anal cleaning materials. In contrast, this study revealed that only few public toilet attendants provided containers for the disposal of the newspapers and toilet roll used by clients.

5.8 Estimated Average Number of People Who Use Public Toilets

On average, 8,022 people used the public toilet per day in Wa Township. The patronage was high in areas such as the central business area and surrounding areas where there were heavy daily human activities. The high patronage was attributed to the combined usage by both residents and people who came to the area to do business. E.g. Market men and Women, Passengers and Drivers. This is in conformity with results of Ayee and Crook (2003), Puopil (2010) and WSUP (2011).

The required standard for KVIP is one squat hole to 50 people (CWSA, 2010 and Planning Standards and Zoning Regulation, 2010). The number of squat holes of the PT ranges in our study area from 10 and 24 which is suppose to serve 500 and 1,200 people respectively. However according to the Population and Housing Census,2010, the total number of people within the Wa Township who did not have Household toilet was about 60,247.This means that the population without household toilets in many areas within the Wa Township exceeded the capacity of the public toilets. The capacity of the few available public toilets will probably not meet the high number of people who may want to use them.

5.9 Usage of Government Owned Public Toilets (GOPTs) and Privately Owned Public Toilets (POPTs)

The fee charged by the POPTs ranged from 50 pesewas to 1 cedi compared with the GOPTs which charged between 20 to 30 pesewas. According to the Director of the Wa Municipal Environmental Health, it was cheaper establishing and managing a KVIP than Water Closet toilet facility. The cost was however transferred to clients or users, which made the POPTs (WCs) relatively more expensive than the GOPTs which were mainly KVIPs.

5.10 Management of PTs at the facility level

From the analysis, it showed that the job of attendants of public toilets in the Wa Township is male dominated (59%). This will affect the cleaning of these PTs because females traditionally get involved in cleaning than males.

More than 48% of attendants were above 51 years. This shows that more of attendants were old and could not do much of the physical work involved in cleaning and scrapping these facilities. These could have an impact on the daily management of these PTs.

5.11 Regularity of Cleaning and maintenance of Public Toilet Facilities

Responses from the respondents indicated that public toilet facilities in Wa Township were not regularly cleaned as expected as less than 20% of respondents asserted that they cleaned the facilities three times in a day.

Most of the PTs are not regularly maintained. The reason given for the non-maintenance of the facilities was that they only collected the money and gave it to the

Toilet Manager and so had no money to undertake such maintenance on the facility in contrast to the Franchise agreement stated in MLGRD, 2003.

5.12 Hygiene and Facilities in Public Toilets

The results of the analysis revealed that some of the KVIPs toilets in the Wa Township were not managed well, making them unclean. This often attracted flies and produced bad odour and this corroborates with the report of MLGRD (2003) that indicated that where the ventilation system does not function effectively, odour problems arise. The report further indicated that inadequate maintenance of fly screens can lead to poor ventilation if they become blocked or, alternatively, excessive fly breeding if they were damaged.

The results of the analysis also revealed that about 89% of the 44 public toilets did not have hand-washing facilities. The clients were supposed to find their own water and other sanitizers to wash their hands after visiting the facility. This is in contradiction with the recommendation of Mooijman et al, 2013 that hand washing facilities; taps and plumbing work must be provided and maintained regularly to ensure they were operating as designed.

In the Wa Township, PTs were cleaned by paid sanitation officers but unfortunately they and their supervisors were poorly motivated which led to poor management of public toilets and a deterioration of sanitary conditions which is confirmed by Ayee and Crook (2003).

5.13 Use and Management of Toilet Roll and Paper in Public Toilets

From the study, majority of the PTs attendants provided their clients with newspaper for anal cleansing. This is in contradiction with the principle behind the KVIP and

WC technology, which states that only soft materials (toilet roll) should be used for anal cleansing. However these attendants explained that the newspaper was cheaper than the soft material. This is in contradiction with the report of Mooijman et al, 2013 that only soft materials must be used.

The study further revealed that all the anal cleaning materials were burnt or put in communal/waste containers as means of final disposal of the used materials. This also contradicts with the recommendation by Mooijman et al, 2013 that all anal cleansing materials should be put into the pit. Anal cleansing material must NOT be kept in a basket or box in the chamber because these will attract flies and other insects.

5.14 Institutional Role in PTs Management in Wa Township

5.14.1 Drainage of Faecal Sludge

The Wa Municipal Assembly and Zoomlion Company Ltd were the two main bodies responsible for the drainage of faecal sludge while majority of respondents employ the services of the Municipal Assembly's septic emptier to drain their facility, a few hired Zoomlion's septic emptier to drain their facilities.

Since some toilet operators/attendants still want to stay in business when mechanical emptiers are unavailable due to one reason or the other, they had developed other manual methods of reducing the quantity of excreta in the septic tanks just to keep them in business until the cesspit emptiers arrived. Other public toilet operators who do not resort to these manual methods were left with no other option than to close their facilities from the public. This corroborate with the findings of Nkansah (2009) and Strauss and Montangero (2002). Again, the closure of PTs during such periods leaves no other alternative to regular users than to practice open defecation, which may lead to the contamination of the environment.

Public toilet operators interviewed stated that, the cost of draining does not deter them from hiring the services of the mechanical emptiers but rather they were unreliable. This was as a results of the pressure put on them since they were inadequate (3 emptiers) to serve the whole Upper West region.

PTs operators do adhere to the modus operandi of PTs. One pit accumulates excreta till it gets full, which is then closed off and the alternate pits used. The first pit then remains closed for at least two years, allowing for the excreta to decompose and become harmless and inoffensive through natural processes. This can be emptied manually and the pit is put back into use during which the second pit is closed off to allow for decomposition.

MLGRD (2003) reports that nearly all public toilets either have no soak away or, if they once did, it is always completely clogged. They therefore function as cess-pools, simply collecting excreta for periodic removal causing overflowing. Our study results agrees with the report of the MLGRD because the absence of soak away and delay in dislodging of fecal sludge from the facility led to the overflowing of faeces into the surrounding areas. This in itself can cause problems as most KVIPs are built with no lining on the bottom of the pit. Mechanical emptying can therefore damage the base of the pit and may in severe cases lead to the collapse of the structure (MLGRD, 2003).

5.15 Public Private Partnership Applied in the Management and Operation of Public Toilets

The study uncovered that public private partnership was applied in the operation and management of public toilets in Wa Township. The facilities were provided by the Wa Municipal Assembly but operated by private individuals. The public toilets had

been franchised to private individuals and per the agreement they were responsible for the day-to-day operation and maintenance of these facilities. These individuals are profit making and paid little attention to the proper management of the toilets.

5.16 Challenges in the Operation and Maintenance of Public Toilets in Wa Township

Government owned toilets were poorly managed as compared to the private ones. This was attributed to the lack of consistency in management due to the effects of party politics. Whenever there was a change in government, there was also corresponding change in the management of the government owned PTs. Management of government owned PTs were mainly in the hands of the assembly members.

They have the power to decide who should be managers of these PTs. Hygiene education among attendants were unsatisfactory as a reasonable number of toilet attendants have no knowledge of hygiene in the operation of PTs. They indicated that they had never been educated on proper hygienic practices in the operation and maintenance of the facility. This could be attributed to the fact that, some of these attendants were new on the job due to frequent changes in management of these facilities. Some attendants revealed that hygiene education was heard on radio occasionally by personnel from the Wa Municipal Assembly, it was irregular and inadequate hence the need to be broadened and intensified.

CHAPTER SIX

Summary of Findings, Conclusion and Recommendations

6.1 Introduction

This chapter summarises the research findings. It also gives recommendations as possible measures for solutions to the problems identified out of the research work.

- There are 44 PTs in Wa Township. Of this number, 42 of them (95.6%) are of the KVIP type. These were constructed and owned by the Local authority of the WaMA and leased to private individuals to manage. Two (4.5%) were constructed and managed by private individuals and these were water closet (WC) type. Two (2) of the toilets were non-functional and not in used.
- All the PTs were located in the low-income residential areas and in the central business areas, serving both residential and transient users. PTs were not found in high-income and modern residential areas.
- The two WCs type of PTs had mechanized boreholes connected to a water tank in order to provide constant water for flushing and cleaning. The other 42 PTs which were all KVIPSs did not have pipes connected to the facilities and had to buy water for use in the facilities.
- All the Privately Owned PTs were well constructed managed and maintained. The POPTs employed full time cleaners. About 70% of the GOPTs were not well constructed, not well managed and poorly maintained. GOPTs hired cleaners on daily basis. The GOPTs were mostly dirty looking, their roofs worn out, the walls were broken and the doors either removed or hanging.

- On average, 8,022 people used the PT per day in the township with an average of 191 people per facility per day. The usage was high in the Central Business area where there were heavy daily human activities.
- Only 17% of attendants clean their facilities three times in a day. The other 83% clean once or twice in a day. Majority (78%) of attendants had never done any maintenance work on the facility. All the 44 attendants had never received any formal or informal training with regards to the operation and management of these PTs. Also only 11% of attendants provided their clients with water and soap for hand washing after using the facilities.
- The study revealed that 82% of attendants indicated they disinfected the toilets. The disinfection was done by the Wa Municipal Assembly or Zoomlion Ltd. While 18% said they had never disinfected their facilities since they started taking care of them. About 47% indicated that disinfection was done between two to three month whiles 33% said it was done between four months and above. They use brooms, liquid soap, Dettol, Parazon, and other chemicals to clean the toilet facilities.
- It was also found that 92% of the attendants provided old newspaper for anal cleansing and 5% and 3% provided toilet roll and water for cleansing respectively. The study further revealed that 76% of the public toilet facilities provided containers for the disposal of the newspapers and toilet roll used by clients while 17% of public toilets do not provide any container. The paper was littered on the floor of the toilets.
- The Wa Municipal Assembly (two emptiers) and Zoomlion Ltd (one emptier) were the only two bodies responsible for the drainage of faecal sludge in Wa Township. Only two PTs (WCs) converted their sludge into biogas. Other manual

methods of draining faecal sludge were used when operators were not able to secure the service of a septic emptier when the facility was full to capacity. Some of these included; the use of bucket to fetch from the septic tanks and thrown just beside the facility, temporarily closing down the facility and using clubs to pound the sludge so that the dried sludge reduced.

- The Environmental Health Department (EHD) of the Wa Municipal Assembly is tasked with the responsibility of managing PTs within the study area. They play the role of providers of PTs and services and are therefore, technically and legally, the sole owners of the public toilets, except where ownership resides with the private sector.

6.2 Conclusion

From the results, majority (95.46%) of the PTs are located in low-income residential areas and the central business areas of the Wa Township.

Most (95.46%) of the PTs do not have adequate and regular cleaners, hand washing facilities and other essential disinfectants to clean them. All the attendants have to rely on the WaMA or Zoomlion Company Ltd to disinfect their facilities which is not reliable. All the Privately Owned PTs were well constructed managed and maintained. The POPTs employed full time cleaners. About 70% of the GOPTs were not well constructed, not well managed and poorly maintained. GOPTs hired cleaners on daily basis. The GOPTs were mostly dirty looking, their roofs worn out, the walls were broken and the doors either removed or hanging.

Averagely, 8,022 people used the public toilet per day in the township with an average of 191 people per facility per day. The patronage was high in the Central Business area where there were heavy daily human activities.

The cesspit emptiers are not adequate to serve all toilets in Wa Township. Most managers hire labourers to use bucket to fetch faecal sludge from the septic tanks and thrown just beside the facility. Others temporarily close down the facility until such a time that they are able to dispose of the faecal sludge. Some use club to pound the sludge to compress the dried sludge to provide space for the continual usage of the facility. Finally these challenges make it difficult for these PTs to be maintained. Despite these challenges, PTs if well managed can be clean and safe and appropriate.

6.3 Recommendations

Based on the findings, the following recommendations are made;

- More PTs should be established especially around the central business area.
- Government Owned PTs should be privatised to ensure effective and efficient management.
- Government should provide more cesspit emptiers to provide regular drainage services when cesspit tanks are full.
- All PTs should have boreholes, pipers or wells to ensure constant supply of water for cleaning the facilities.
- Hygiene education among PT operators must be intensified to ensure proper hygiene and cleanliness at PTs premises.
- The Municipal Assembly must also enforce the building codes, so that new offices and houses under construction would have in built toilets.
- People caught disposing faecal sludge at unauthorised places should be punished to serve as a deterrent to others.

LIST OF REFERENCES

Ahmann, J., Bond, K., Greaser, W., Selden, S., Springberg, A., &Srinivas, K.(2006). Going Public! Strategies for Meeting Public Restroom Need inPortland's Central City (p. 140). Nohad A. Toulan School of Urban Studies and Planning. Retrieved from http://archives.pdx.edu/ds/psu/8664.

Akran, G., (2011).What is management? Definitions, meaning and features. http/kalyan-city.blogspot.com.

Akvopedia, (2009). Sanitation Products, (On-line) http://www.akvo.org (Accessed on 25/10/2011).

All Products -Katmerciler: Retrieved from: http://www.katmerciler.com/L/EN/mid/343/g/0/c/2/id/10/Cesspit-Emptier-&-Cesspit-Emptier-Trailer-.htm. Accessed on 21 November 2015 21:51:02.

Antwi-Agyei, P., (2009). Faecal sludge management: the case of Medina. Thesis. Kwame Nkrumah University of Science and Technology, Ghana.

Ayee, J., & Crook, R., (2003). Toilet wars: urban sanitation services and the politics of public-private partnerships in Ghana. IDS Working Paper 23. Institute of Development Studies, Brighton, Sussex, England.

Ayee, J.R.A., (1993). Decentralisation and Conflict: Ghana's Decentralisation Programme, 1987-1992, Africa Institute of South Africa Occasional Paper 57: pp.11 – 19.

Batley, R., (1996). 'Public and private relationships and performance in service provision', Urban Studies 33 (4–5): 723–51.

Bayside Public Toilet Strategy, (2012). "Lifting the convenience of public toilets through performance based asset management"Version 10. Bayside City Council.

Corporate Centre, 76 Royal Avenue, SANDRINGHAM VIC 3191. Produced by: gilbert consulting pty ltd with the assistance of Bayside Staff and Contractors.

Benneh G., Songsore, J., Nabila, J.S.,Amuzu, A.T., Tutu, K.A., Yangyuoru, Y., McGranahan, G., (1993). Environmental problems and the urban household in the Greater Accra Metropolitan Area, Ghana. Stockholm:Stockholm Environment Institute.

Bernard, H.R., (2002). Research Methods in Anthropology: Qualitative and quantitative methods. 3rd edition. Alta Mira Press, Walnut Creek, California.

Burra, S., Patel, S., & Kerr, T., (2003) Community – designed, built and managed toilet blocks in Indian cities. Environment and Urbanisation 15(2): pp.11 – 32.

Central Coast Council, (2013). Public Toilet Policy. Central Coast 19 King Edward Street Ulverstone Tasmania 7315.

Daily Graphic, (April, 28, 2006). "Shake-Up in Gov't". Retrieved from: www.graphicghana.info/article.asp?artid=11774.

DANIDA, (2003). "Water and Sanitation Sector Programme Support Phase II (WSSPSII): SPS Document" Ghana.

Davis, P., (1986). 'Public-private partnerships: improving urban life', Proceedings of the Academy of Political Science, Vol 36 No 2.

Fiszbein, A., (2000). 'Public-Private Partnerships as a Strategy for Local Capacity Building: Some Suggestive Evidence from Latin America', in P. Collins (ed.), Applying Public Administration in Development: Guideposts to the Future, Chichester: Wiley —— 1997, 'The emergence of local capacity: lessons from Colombia', World Development, Vol 20 No 7: 1029–43.

Fiszbein, A., & Lowden, P., (1999). Working Together for a Change: Government, Civic and Business Partnerships for Poverty Reduction in Latin America and the Caribbean, Washington, D.C.: World Bank.

Frantzen, A., (1998). Improvement of the management of public toilet facilities in Kumasi-Roles of public and private sector, Ghana Research Paper No. 9.

Frantzen, A., & Post, J., (2001). Public Toilets in Kumasi: Burden or Boon? In: K.K.

Ghana Statistical Service, (2003). Ghana Demographic and Health Survey Report.

Ghana Statistical Service, (2012). 2010 Population and Housing Census Results, Ghana. Ghana Statistical Service, Accra, Ghana. (On-line) http://www.ghanastatisticalservice.com.

Ghana Statistical Service, (2012). 2010 Population and Housing Census Results, Ghana.

Ghana Statistical Service, Accra, Ghana. (On-line) http://www.ghanastatisticalservice.com (Accessed on 5/6/2012).

Government of Ghana, (2003).Ministry of Local Government and Rural Development: Guidelines for the Provision, Operation and Maintenance of Public Toilets, Carl Bro a|s ,PEM consult CMS Ltd., Ghana.

Greed, C., (2002). 'Downtown toilets: inclusive urban design, paper presented at World Toilet Organisation conference, New Beginnings in the 21st Century, Conference proceedings, World Toilet Summit, Seoul, Korea, 31 October - November 3, 2002.

GWSRS, (2005). Ghana Water Sector Restructuring Secretariat Report, Accra, Ghana.

Katz, H., (2006).Israeli Center for Third-sector Research (ICTR) and Dept of Business Administration Ben Gurion University of the Negev.

King, R., Inkoomi, D., & Abrampah, K.M., (2001). 'Urban governance in Kumasi: Poverty and exclusion', Urban Governance, Partnership and Poverty Working Paper, May 2001, University of Birmingham IDD.

Lewis, J.L.,& Sheppard S.R.J., (2006). Culture and Communication: Can landscape visualization improve forest management consultation with indigenous communities? Landscape and Urban Planning 77:291–313.

Ministry of Local Government and Rural Development (MLGRD) & Local Government Service (LGS), (2010). Guidelines for the Provision, Operation, Maintenance and Management of Public Toilets in Ghana (Revised August 2010). Accra: MLGRD.

MLGRD, (2003). Guidelines for the Provision, Operation and Maintenance of Public Toilets. Ministry of Local Government and Rural Development (MLGDR), Government of Ghana: Accra, Ghana.

Montangero, A., Koné D., &Strauss M., (2002). Planning towards improved excreta management. Paper submitted to the IWA 5th Conference on Small Water and Wastewater Treatment Systems, Istanbul, Turkey.

Montangero, A., & Strauss, M., (2002). Faecal Sludge Treatment. Lecture Notes, IHE Delft, February. SANDEC.

Mooijman, A., Esseku H., & Tay, V., (2013). WASH in Schools Facilities Planning and Management Guide. Ghana Education Service.

Nachmias, F.C., & Nachmias, D., (1992). Research Methods in the Social Sciences, 4th ed. J. W. Arrowsmith Ltd, Bristol, United Kingdom.

National Public Toilet Map – About, (2013). Retrieved July 14, 2013, from http://www.toiletmap.gov.au/staticpage.aspx?page=about

Nkansah, A., (2009). Management of Faecal Sludge in the Urban Areas of Low-Income Countries: a case of Tamale, Ghana. Thesis. Loughborough University, United Kingdom.

Parahoo K., (1997). Nursing Research. Principles, Process and Issues. Basingstoke: Macmillan.

Pay toilet - Wikipedia, the free encyclopaedia: https://en.wikipedia.org/wiki/Pay_toilet assessed on 13 November 2015 13:08:35

Planning Standards and Zoning Regulations, (2010). Planning Standards Volume Two (Fourth Draft).

Polit, D.F., Beck, C.T., & Hungler, B.P., (2001). Essentials of Nursing Research: Methods, Appraisal, and Utilisation (5th edn). Philadelphia: Lippincott.

Public Eyesores Called Toilets: http://realnewsmagazine.net/health/public-eyesores-called-toilets. Assessed on 21 November 2015 09:49:42.

Public Toilets in London Update Report, (2011). Greater London Authority. Published By: Greater London Authority, City Hall, The Queen's Walk, More London, LondonSei 2AA.

Public toilet strategy, (2012). Moreland City Council. Australia.

Population & Housing Census, (2012). Summary Report of Final Results. Ghana Statistical Service. Accra. A Publication of the Ghana Statistical Service. Printed by Sakoa Press Limited.

Republic of Ghana, (1999). Environmental Sanitation Policy, Accra: Ministry of Local Government and Rural Development.

River, S., (2013). Draft Asset Strategy for the Provision and Management Of Public Toilet Facilities. Snowy River Shire Council.

Salifu N., (2010), Tamale lacked toilet facilities, Daily Graphic, Thursday, July 29, 2010, Accra, Ghana.

Saywell, D. & C. Hunt, (1999). Sanitation Programmes Revisited, WELL Task 161. WELL, UK www.lboro.ac.uk/well/resources/well-studies/full-reportspdf/task0161.pdf.

Scott, B., Curtis, V., Rabie, T., & Garbrah-Aidoo, N., (2007). Health in our hands, but not in our heads: Understanding hygiene motivation in Ghana. Health Policy Plan. 22, 225–233.

States of Alderney Channel Islands Specification for cleaning Public Toilets (2013, December).Strauss, M., &Montangero, A., (2002). Capacity Building for Effective Decentralisation Wastewater. Faecal Sludge Management – Review of Practices, Problems and Initiatives.

Tayler, K., & Salifu L., (2005). Briefing Note Ghana — National Sanitation Policy in Ghana: A case for improved co-ordination? WEDC.

Thrift, C., (2007). Sanitation Policy in Ghana: Key Factors and the Potential for Ecological Sanitation Solutions. Stockholm Environment Institute Kräftriket 2B 10691 Stockholm, Sweden.

UNDP, (2010). Public Private Partnership for Service Delivery. Nepal: Public-Private Partnership Applied in Public Toilet Management in Hetauda. UNDP Regional Service Centre for Eastern and Southern Africa 7 Naivasha Road, Sunninghill 2157 Johannesburg, South Africa.

UN-HABITAT, (2003). Water and Sanitation in the World's cities: Local Action for Global Goal. Earthscan: London, UK.

UN-HABITAT, (2009). Ghana: Tamale City Profile. United Nations Human Settlement Programme, UN-HABITAT.

Wa Municipal Assembly, (2011). Annual Report of the Wa Municipal Assembly 2010. Wa: Wa Municipal Assembly.

Wa Municipal Assembly launches cholera prevention exercise:http://www.ghananewsagency.org/health/wa-municipal-assembly-launches-cholera-prevention-exercise--91208 accessed on 19 October 2015 23:36:56.

Wa Municipal District Assembly Profile, (2006). Retrieved from http://wa.ghanadistricts.gov.gh/ (Assessed on: 20-09-2014).

Wa Municipal District, (2010).Human Development Report, Resource Endowment, Investment Opportunities and the Attainment of MDGs, Ghana.

Wa Municipal Health Service,(2010). Annual Report.

Washington, M.K., (2014). Go Before You Go: How Public Toilets Impact Public Transit Usage." Portland State University McNair Scholars Online Journal: Vol. 8.

WaterAid, (2008). Tackling the silent killer: The Case for Sanitation. A WaterAid Report.

Water and Sanitation Programme, (2004). From Hazard to Convenience: Towards Better Management of Public Toilets in the City of Nairobi. Water and Sanitation Programme.

Water and Sanitation Program, (2004). The Case for Marketing Sanitation. Kenya: World Bank.

Water and Sanitation Sector Monitoring Platform, (2012). Water and Sanitation SectorOverview 2012. Accra: Water and Sanitation Sector Monitoring Platform.

WHO/UNICEF, (2004). Joint Monitoring Programme for Water Supply and Sanitation, "Meeting the MDG Drinking Water and Sanitation Target: A Mid-Term Assessment of Progress".

WHO/UNICEF, (2006). Joint Monitoring Programme for Water Supply and Sanitation, "Coverage Estimates: Improved Sanitation" Ghana.

WHO/UNICEF, (2010). Joint Monitoring Programme (JMP) report 2010 update. (On-line) http://www.wssinfo.org/data-estimates/table/ (Accessed on 16/2/2012).

WHO/UNICEF, (2013). Joint Monitoring Programme for Water Supply and Sanitation: Progress on Drinking Water and Sanitation – 2013 Update. Geneva: WHO Press.

WHO, (2015). Country Office Ghana .Situation Report on Cholera Outbreak in Ghana.

Wikipedia. (2015, November, 12). Public Eyesores Called Toilets – Real news Magazine: Retrieved from http://realnewsmagazine.net/health/public-eyesores-called-toilets. 09:49:42.

Wikipedia. (2015, November 13). Pay toilet. Retrieved from https://en.wikipedia.org/wiki/Pay_toilet 13:08:35.

World Health Organization, United Nations Children's Emergency Fund and Water Supply & Sanitation Collaborative Council, (2000). Global Water Supply and Sanitation.

WSUP, (2011). When are communal or public toilets an appropriate option? WSUP Topic Brief.

LIST OF APPENDICES

APPENDIX 1

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF ALLIED HEALTH SCIENCES

MASTER OF SCIENCE COMMUNITY HEALTH AND DEVELOPMENT

a. **Demographic characteristics**

1. Name of

community……

……

2. Any attendant present? 1. Yes 2.No

3. Sex a. male b. female

4. Highest Educational status

1. None 2.primary 3. J.H.S 4. S.H.S 5.other

(specify)……..

5. What is your religion?

1. Christian 2. Muslim 3. Traditional

4. Other

(specify)……

…….

6. What is your ethnic group?

1=wala 2=dagarti 3=sissala

4=other

(specify)……

…….

7. Marital status?

1. Single 2. Married 3.Divorced 4. Widowed

5. Other

(specify)……

……..

8. Age of attendant……

…….

9. Type of toilet

1. Aqua Privy

2. KVIP/VIP

3. Pit Latrine

4. Water Closet (W/C)

5. Others (specify)

……

……

10. What is the capacity of the toilet (number of seater)?

1. 2 seater 2. 4 seater 3.6 seater 4.8 seater 5.10 seater 6.12 seater

7. Other

(specify)……

……...

11. How old is the toilet

facility……

……

(b) Management

12. The state of the toilet

1. Functioning

2. Not functioning

13. If not functioning, why is it not functioning?

.....

.....

.....

.....

14. Ownership and management of public toilets

1. Private

2. Public (government)

3. Other

(specify)……

……

15. For how long has the toilet been under the above

management?.....

.....

.....

16. Is the attendant the same as the owner?

1. Yes 2.no

17. How much is the attendant paid?

.....

18. How many people patronise the toilet per day?

.....

19. How many neighbourhoods/area does the toilet serve?

…….....

20. Name

them…….

21. Is the toilet separate for males and females or is a combined system?

1. Separate

2. Not separate

3. Other

(specify)……

…

22. Levy charged (in Ghana cedis and pesewas) per user.

1. 0.20p 2. 0.50p 3. 1.0

4. Other

(specify)……

……..

(c) Hygiene

23. Is the toilet attendants aware of hygiene education?

1. Yes 2. No

24. If yes, where?

1. Radio 2.TV 3.internet 4.other

(specify)……...

25. Is the toilets having hand washing facilities?

1. Yes 2. No

26.If yes, what are these things

……

……

……

……

……

……

……..

27. How much does it cost

……

……

……

…….

28. How is your Faecal Sludge disposed?

1. Use for compost 2.carried away by emptiers 3.poured on farms

4. Others

(specify)……

29. What is the method of faecal sludge disposal from your toilet if septic emptiers are not available?

1. Close the toilet facility

2. Pounding with clubs for the level of faecal sludge to reduce

3. Apply chemical (CaCO3) to faecal sludge to reduce the level in septic tank

4. Use bucket to fetch to reduce the level

5.other (specify)

……

……

……

……

……..

(d) Technical

30. How many times is the toilet drained in a month? 1. 1 2. 2 3.3 4.4 5. 5

31. Do you sometimes disinfect the toilet? 1. Yes 2.no

32. If yes, what is done?

……

……

……

33. How much does it

cost……

……

34. How many times per month?

……

…….

35. Who does the draining?

……

……

36. How much does it cost to drain the toilet?

……

……

37. What is the Methods of draining the toilets?

1. Manual 2. Mechanical

3. Other

(specify)…….

38. What is the size of the septic tank?

.....

.....

39. If the emptier is to drain the septic tank, how many rounds does it need to go before it empty's the septic tank?

40. Indicate number of times the toilet is cleaned in a day

1. 1x 2. 2x 3. 3x 4. 4x 5. 5x 6. None

41.What do you use in cleaning the

toilet?.....

.....

.....

.....

.....

42. Who does the cleaning?

……

……

……

……..

43. How much is paid for cleaning?

……

……

44. Do you do some maintenance on the toilet 1.yes 2.no

45. If yes, how many times per month

……

……

46. How much does it cost to do maintenance per month per

month……

…….

47. Other expenses (water, paper, light bill)

……

…

……

……

……

……

(e) Condition of the toilet facility

48. Odour problem? 1. Yes 2.No

49. Flies nuisance? 1. Yes 2.No

50. Where is the anal cleaning material stored?

1. Container

2. Put in the toilet

3. Littered all over

4. Other

(specify)……

……..

51. If anal cleansing materials are stored in a container, what is its condition?

1. Bad 2.good

52. What type of anal cleansing materials do you use?

1=newspaper

2=toilet roll

3=rag

4=stick

5=other

(specify)……

……

53. What do you do with the anal cleansing material?

……

……

54. Any vent pipe? 1. Yes 2.no

55. Is the septic tank well covered? 1. Yes 2.no

56. Any overflow from pit or septic tank? 1. Yes 2.no

57. If water closet, any water storage facility? 1. Yes 2.no

58. If water closet, is the flushing component working? 1. Yes 2.no

59. Is there light in the facility? 1. Yes 2.No

60. How many are the windows in the facility?

……

……..

61. What time do you start work (open the facility?)

…….

62. What time do you close for the day?

.....

63. Do children (5-12years) use this facility? 1. Yes 2.No

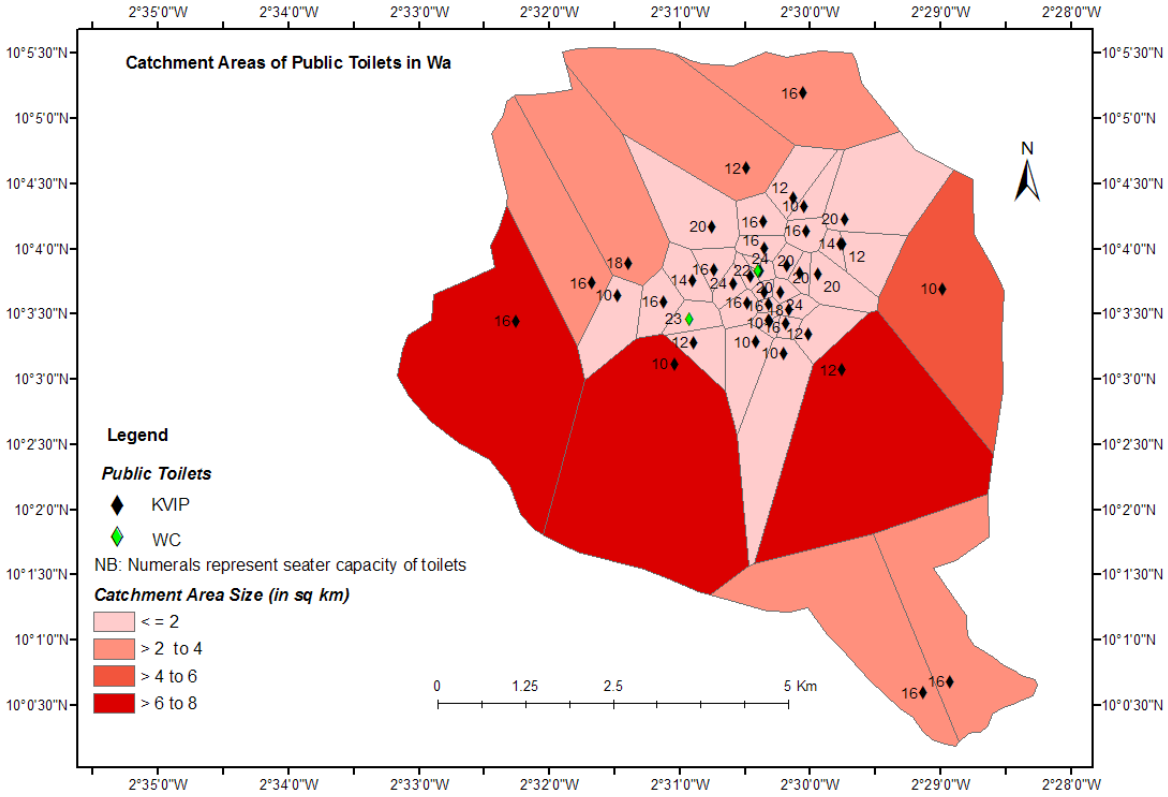
64. Is the facility physically challenged friendly? 1. Yes 2.No

65. Any challenges you face

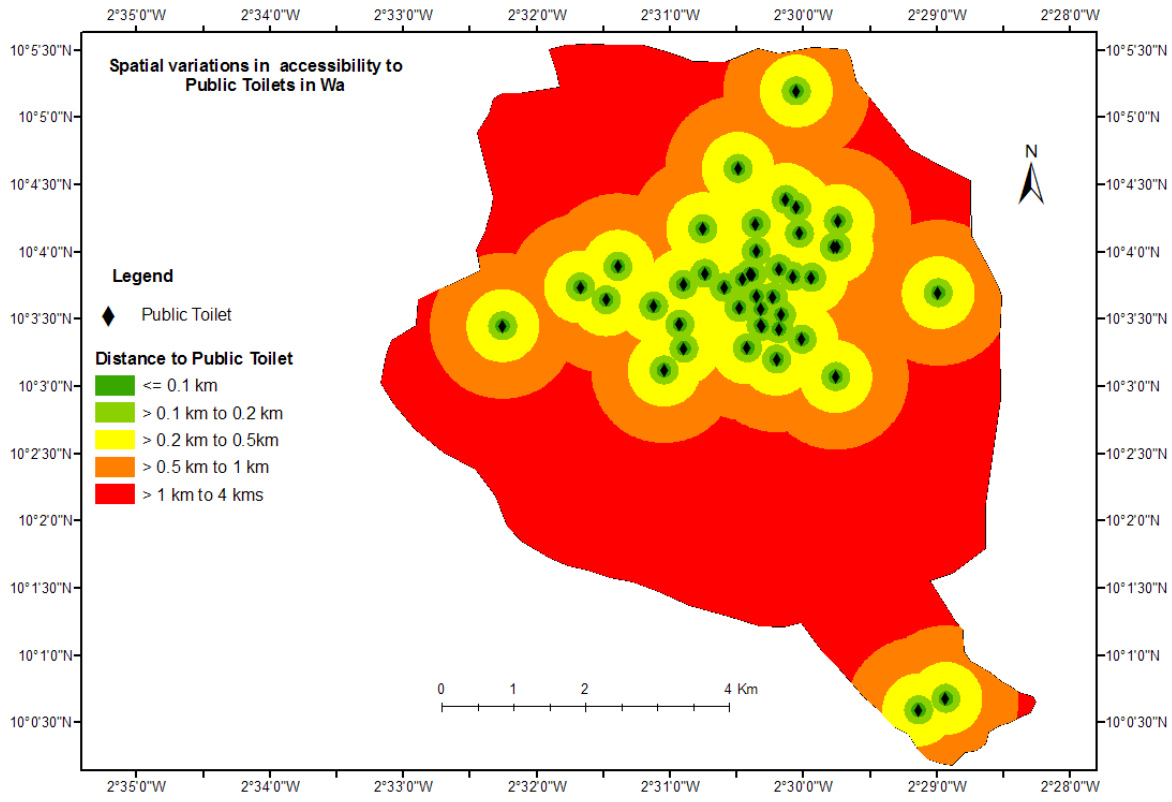
APPENDIX 2:Communities in Wa Township with their codes

Code	Name	Code	Name	Code	Name
0	Sokpayiri	20	Wa Forest	40	Belibogu
1	Nayiri	21	Bambiriyiri	41	Tindamba
2	Jengbeyiri	22	Nipayiri	42	Gbangmarayiri
3	Gonbeliimuni	23	Senbeleyiri	43	Jejeidayiri
4	Fongu	24	Bomiyiri	44	Tanpalpaani
5	Kpaahayiri	25	Jebogu	45	Kaabanye
6	Limanyiri	26	Sandamuni	46	Zongo
7	Tuomuni	27	Buguriyiri	47	Ministries and Security Services
8	Dograyiri	28	Golipaani	48	Nurses Bungalows
9	Tagrayiri	29	Market Area	49	Catering Rest House
10	Tamaramuni	30	Dokpon	50	Government Bungalows
11	Mangu	31	Airstrip	51	Jahan Area
12	Sombo	32	Kombiehi	52	Kantamanduori
13	SSNIT Guest House	33	Dondoli	53	Suuriyiri
14	Kambali	34	Sawaaba	54	Wapaani
15	Chorkor	35	Banongoma	55	Dobile
16	Napogbakoli	36	DankoExtentention	56	Bamaho
17	Kpaguri	37	Airport West		
18	SSNIT Flat	38	Unknown		
19	Konta	39	Water Village		

APPENDIX 3:Table showing the locations of various public toilets with their capacities (seater) and catchment areas within the Wa Township.



APPENDIX 4:Map showing estimation of population within each distance range



APPENDIX 5:Table showing estimation of population within each distance range

Distance to Public Toilets (a)	**Area within each range (b)**	**Density of Population without toilet in 2012 (c)[1]**	**Population without toilet within each distance range (b*c)**
<= 0.1 km	1.3 sq km	1,072 persons per sq km (60247/56.2)	1394
> 0.1km to 0.2km	3.3 sq km		3538
>0.2km to 0.5km	10.1 sq km		10827
>0.5km to 1km	14.2 sq km		15222
>1km to 4km	27.3 sq km		29266
Total	**56.2**		**60247**

Assumption

- The estimation assumed that the population without toilet in 2012 is distributed uniformly across Wa Town.

[1]Total area of Wa Town is 56.2 sq km and Population without Toilet in 2012 is approximately 60,247

APPENDIX 6:Number of Times Toilets Are Drained

No.	Name Of Toilet	Community	Drain in a Year (No.)	Drain in a Month (No.)
1	DobileDopiani	Dobile	1	
2	Dobile	Dobile	100	1
3	Kpaguri	Kpaguri	12	1
4	Dokpong	Dokpong	2	
5	Wapaani	Wapaani	6	
6	Limanyiri Model	Limanyiri	36	3
7	Sandamuni	Sandamuni	24	2
8	BamahoSomboyiri	Bamaho	1	
9	Bamaho	Bamaho	1	
10	TampaalPaani	TampaalPaani	N/A	N/A
11	DodoliLimanyiri	Dodoli	6	
12	Sombo	Sombo	1	
13	Dodoli	Dodoli	12	1
14	Jeijeiriyiri	Jeijeiriyiri	4	
15	Kpaguri Yiziiri	Kpaguri	12	1
16	Kambale Paani	Kambale	36	1
17	Mangu 2	Mangu	2	
18	Mangu 1	Mangu	12	1
19	Kpaguri Ganya	Kpaguri		
20	Nuuriya	Nuuriya	12	1
21	Tindamba Primary	Tindamba	12	1
22	Konta	Konta	12	1
23	Kabanye 3	Kabanye	24	2
24	Zongo 1	Zongo	24	2
25	Zongo	Zongo	N/A	N/A
26	Zongo 2	Zongo	24	2
27	Kabanye 1	Kabanye	24	2
28	Sokpariyiri 1	Sokpariyiri	24	2
29	Sokpariyiri 2	Sokpariyiri	24	2
30	Kabanye 2	Kabanye	24	2
31	Nayiri	Nayiri	24	2
32	Limanyiri	Limanyiri	12	1
33	Tagreyiri	Tagreyiri	24	2
34	Wapaani 3	Wapaani	12	1
35	Wapaani 2	Wapaani	36	3
36	Wapaani 1	Wapaani	24	2
37	Central Mkt	Kejetia	N/A	N/A
38	Sokpariyiri 3	Sokpariyiri	12	1
39	Kumbiehi	Kumbiehi	1	
40	Banugoma	Banugoma	12	1
41	Mangu	Mangu	12	1
42	Fadama	Fadama	24	2

43	Wapaani 4	Wapaani		
44	Dobile-Low Cost	Dobile	12	1

APPENDIX 7: Longitude and Latitude of the Location of PTs in Wa Township

longitude	latitude	Type of Toilet	seater capacity	Name of Toilet	Neighbourhood Located	Ownership	Functio-nality
-2.51496	10.06262	KVIP	14	DobileDopiani	DobileDopiani	Government	YES
-2.51226	10.06399	KVIP	16	Dobile	Dobile	Government	YES
-2.51489	10.05473	KVIP	12	Kpaguri	Kpaguri	Government	YES
-2.50855	10.07714	KVIP	12	Dokpong	Dokpong	Government	NO
-2.50587	10.07014	KVIP	16	Wapaani	Wapaani	Government	YES
-2.5021	10.07314	KVIP	12	Limanyiri Model	Limanyiri	Government	YES
-2.50042	10.06896	KVIP	16	Sademuni	Sademuni	Government	YES
-2.48212	10.01135	KVIP	16	BamahoSomboyiri	Bamaho	Government	YES
-2.48553	10.00994	KVIP	16	Bamaho	Bamaho	Government	YES
-2.48308	10.06159	KVIP	10	TampaalPaani	TampaalPaani	Government	YES
-2.49558	10.07052	KVIP	20	DodoliLimanyiri	Dodoli	Government	YES
-2.53755	10.0575	KVIP	16	Sombo	Sombo	Government	YES
-2.49577	10.06732	KVIP	12	Dodoli	Dodoli	Government	YES
-2.49608	10.06727	KVIP	14	Jeijeiyiri	Jeijeiyiri	Government	YES
-2.51737	10.05202	KVIP	10	Kpaguri Yiziiri	Kpaguri	Government	YES
-2.51866	10.05996	KVIP	16	Kambale Paani	Kambale	Government	YES
-2.52782	10.06231	KVIP	16	Mangu 2	Mangu	Government	YES
-2.52314	10.06486	KVIP	18	Mangu 1	Mangu	Government	YES
-2.51538	10.05769	WC	23	Kpaguri Ganya	Kpaguri	Private	YES
-2.50694	10.05477	KVIP	10	Nuuriya	Nuuriya	Government	YES
-2.50329	10.05337	KVIP	10	Tindamba Primary	Tindamba	Government	YES
-2.4959	10.05121	KVIP	12	Konta	Konta	Government	YES
-2.50011	10.05585	KVIP	12	Kabanye 3	Kabanye	Government	YES
-2.50515	10.05743	KVIP	16	Zongo 1	Zongo	Government	YES
-2.50524	10.05759	KVIP	10	Zongo	Zongo	Government	NO

-2.50299	10.05713	KVIP	16	Zongo 2	Zongo	Government	YES
-2.50269	10.0589	KVIP	18	Kabanye 1	Kabanye	Government	YES
-2.50528	10.05961	KVIP	16	Sokpareyiri 1	Sokpareyiri	Government	YES
-2.5058	10.06117	KVIP	24	Sokpareyiri 2	Sokpareyiri	Government	YES
-2.50371	10.06108	KVIP	24	Kabanye 2	Kabanye	Government	YES
-2.49891	10.06349	KVIP	20	Nayiri	Nayiri	Government	YES
-2.50125	10.0636	KVIP	20	Limanyiri	Limanyiri	Government	YES
-2.50297	10.06455	KVIP	20	Tagreyiri	Tagreyiri	Government	YES
-2.50584	10.06674	KVIP	16	Wapaani 3	Wapaani	Government	YES
-2.50663	10.0639	KVIP	20	Wapaani 2	Wapaani	Government	YES
-2.50637	10.06387	KVIP	24	Wapaani 1	Wapaani	Government	YES
-2.50759	10.06325	KVIP	20	Central Mkt	Kejetia	Government	NO
-2.50798	10.05976	KVIP	16	Sokpareyiri 3	Sokpareyiri	Government	YES
-2.50083	10.08658	KVIP	16	Kumbiehi	Kumbiehi	Government	YES
-2.50076	10.07216	KVIP	10	Banugoma	Banugoma	Government	YES
-2.5246	10.06072	KVIP	10	Mangu	Mangu	Government	YES
-2.50984	10.06226	KVIP	24	Fadama	Fadama	Government	YES
-2.50662	10.06392	WC	22	Wapaani 4	Wapaani	Private	YES
-2.51254	10.06952	KVIP	20	Dobile-Low Cost	Dobile	Community	YES