AN EVALUATION OF THE IMPLEMENTATION OF SANITATION AND HYGIENE PROGRAMMES IN SINAZONGWE DISTRICT, ZAMBIA

BY

EXILDAH MAANGUKA

A Dissertation Submitted to the University of Zambia in partial fulfillment of the Requirements for the Degree of Master of Science in Environmental and Natural Resources Management

University of Zambia

Lusaka, 2017

COPYRIGHT

DECLARATION

I, Exildah Maanguka, do declare that this dissertation represents my own work, has not previously been submitted for a degree at this or any other University. All the work of other persons and literature used in this dissertation have been duly acknowledged.

Signed ..... **Date:** .....

CERTIFICATE OF APPROVAL

This dissertation of Exildah Maanguka is approved as partial fulfillment the requirements for the award of the degree of Master of Science in Environmental and Natural Resources Management of the University of Zambia.

Name	**Signature**	**Date**
Dr. M.C. Mulenga Internal Examiner 1	……..	……
Dr. W.S. Nchito Internal Examiner 2	……..	……
Dr. G. A. C. Khonje Internal Examiner 3	……..	……

DEDICATION

To my daughters Chipo Patricia and Tabo Martha Nyundu

ABSTRACT

A healthy living environment depends on adequate sanitation. Worldwide, about 1.1 billion people still defecate in the open, leaving their faeces on the ground to contaminate the surrounding environment. Sinazongwe District is faced with the problem of low access to adequate sanitation and hygiene facilities. This study evaluated the implementation of Sanitation and Hygiene Programmes in Sinazongwe District, Zambia. The study objectives were to identify households with improved sanitation facilities in Sinazongwe and to assess the households with improved hygienic practices. A sample of 60 households was purposively sampled and interviewed from two villages with regard to the available sanitation facilities. Views of different groups on the implementation of sanitation and hygiene programmes in the area were obtained from Focus Group Discussions. Key informants were also purposively selected to give information on the implementation of hygiene and sanitation programmes in the district. Analysis of data showed that 63 percent of the respondents had access to sanitation facilities while 37 percent did not have access to any sanitation facilities. The results also showed that only 14 (23%) households out of the sampled 60 households have access to improved sanitation facilities while 46 (77%) households had unimproved sanitation facilities. Out of 66 households visited, 22 households had pit latrines with a slab which meets the recommendation for an improved sanitation facility set by the Zambian government. The results also showed that 14 (23%) households had access to hand-washing facilities whereas 46 (76%) households had no access to hand-washing facilities. Of the 14 households with hand-washing facilities, only 9 (15%) had their hand-washing facilities supplied with soap. From the households interviewed, only 31.7 percent have elevated dish racks and 68.3 percent had no elevated dish racks. It was also found that only 18 (30%) of the households showed that they had a rubbish pit at their homes and 96.7 percent of them had access to bathing shelters. It is concluded that the Sinazongwe communities are making efforts to climb the sanitation ladder from having basic sanitation facilities to improved sanitation facilities. However, the communities are not doing well with hygiene practices especially hand-wash with soap or ash at critical times. It is therefore recommended for stakeholders to scale up efforts with the local leaders spearheading if Sinazongwe District has to meet the Sustainable Development Goals by 2030 to ensure access to sanitation for all. The government should devise firm and strict legislation and regulations for access to quality sanitation and hygiene services.

Key Words: Evaluation, Implementation, Sanitation and Hygiene

A**CKNOWLEDGEMENTS**

I would like to thank God the Almighty for the strength and the good health He accorded me during the period of study.

I thank Prof. H. M. Sichingabula my supervisor for his patience during my research and compilation of this work, sir, I cannot thank you enough. You have been of so much help, God bless you. I also extend my sincere thanks to Dr. P. H. Nyanga and to the many lecturers and supporting staff in the Geography and Environmental Studies Department for their constant encouragement, God bless you all.

I thank my parents Mr. Dyson N. Maanguka and Mrs. Martha Siakatila Maanguka for their encouragement for me to pursue this study. They saw potential in me, thus, they encouraged me to further my studies, *ndalumba loko (thank you)!* My companion Emmanuel Kameya Nyundu, I thank him for helping me develop this paper even under very busy schedule. My love, I thank you for your sacrifice. My baby Chipo whom I denied that motherly love at an early age, I owe this paper to you. My sisters Euginiah and Ethel Maanguka who took care of my Chipo in my absence I thank you too. To all my brothers, Euclid, Egan, Erastus and sister Eucariah Maanguka I thank you too for your love and moral support.

I would like to thank my work supervisor Mr. H. B. Mkuyamba of St. Mark's Secondary School for his understanding and for according me the chance to further my studies. I thank Mr. Charles Kasanga, the WASH Coordinator for Sinazongwe World Vision Office and Mr. P. Zulu, the Rural Water and Sanitation Coordinator for Sinazongwe Council, for the insight of the prevailing situation in the district as far as sanitation and hygiene is concerned. David T. Banda my friend I thank him for the provision of the map. I thank Fred Chikwanu and Mr. S. Simasiku for helping me with data analysis. I thank my course mates too for the encouragements and teamwork that we were able to share through our studies. To be particular, I acknowledge Namunji Sikokwa, Ompy Halwindi, Catherine Namakando, Blessing Namonje, Cynthia Chitenta and Joan Pelekamoyo. Ladies, you were the best.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PLATES

LIST OF APPENDICES

ACRONYMS

CLTS	Community – Led Total Sanitation
CSO	Central Statistical Office
CSOs	Civil Society Organization
D-WASHE	District Water, Sanitation and Health Education
EMA	Environmental Management Act
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GRZ	Government Republic of Zambia
IDWSSD	International Drinking Water Supply and Sanitation Decade
IYS	International Year of Sanitation
JMP	Joint Monitoring Programme
MCDMCH	Ministry of Community Development, Mother and Child Health
MCTL	Ministry of Chiefs and Traditional Leaders
MDGs	Millennium Development Goals
MLGH	Ministry of Local Government and Housing
MoE	Ministry of Education
MoH	Ministry of Health
NGO	Non-Governmental Organizations
NWASCO	National Water and Sanitation Company
OD	Open Defecation

ODF	Open Defecation Free
RWSS	Rural Water Supply and Sanitation
SD	Sustainable Development
SDGs	Sustainable Development Goals
TSSM	Total Sanitation and Sanitation Marketing
UN	United Nations
UNHRD	United Nations Human Rights Declaration
UNICEF	United Nations International Children's Fund
UNZA	University of Zambia
VIP	Ventilated Improved Pit Latrines
V-WASHE	Village Water, Sanitation and Health Education
WARMA	Water Resources Management
WASHE	Water, Sanitation and Health Education
WHO	World Health Organization
WSP	Water and Sanitation Programme
WSS	Water Supply and Sanitation
WV	World Vision
ZAMBEEF	Zambian Beef Company
ZMW	Zambian Kwacha

CHAPTER ONE: INTRODUCTION

1.1 Background

A healthy living environment depends on adequate sanitation. The sanitation crisis is particularly severe in high-density informal settlements across the globe. Worldwide, about 1.1 billion people still defecate in the open (World Health Organization -WHO, 2012), leaving their faeces on the ground to contaminate the surrounding environment, enter waterways and, eventually, impact the livelihood and health of entire communities.

With no way to safely dispose of faeces, around a billion slum dwellers must resort to 'flying toilets', plastic bags that are used then thrown away, and to dumping human waste in public spaces (Corcoran, 2010). This situation is not limited to urban settlements and can be found in impoverished suburbs, small market towns, large villages, peri-urban settlements and other places across the developing world.

The sanitation crisis was more evident before and a few years after independence in Zambia. This was because of the high illiterate levels which saw most of the people having lowly paid jobs and eventually led to low standards of living. This saw a lot of diarrhoeal disease cases and an increase in the mortality rates especially among children below the age of five years. However, with the improvement in the provision of health services and education, most people in urban and rural areas have improved their personal hygiene, the use of toilets and washing of hands after using the toilet, thus, improving sanitation.

Open defecation is one of the serious problems that the world faces at the moment. Without sanitation systems, human waste enters groundwater and surface waters. Faeces deposited during open defecation contaminate the land. Open defecation is one of the clear indications of sanitation crisis around the global. According to the Ministry of Local Government and Housing (MLGH) (2009), in 2005 only 13 percent of rural households in Zambia had access to proper sanitation facilities. Lack of basic sanitation facilities indirectly inhibits the learning abilities of millions of school-aged children who are infested with intestinal worms transmitted through poor hygienic conditions. Therefore, efforts to prevent death from diarrhoea or to reduce the burden of

diseases are doomed to failure unless people have access to safe drinking water and adequate sanitation (Dahal *et al.*, 2014). Thus, the provision of facilities for a sanitary disposal of excreta, and introducing sound hygiene behaviour are of great importance to reduce the burden of disease caused by these risk factors.

A summit was called to access the progress on the Millennium Development Goals (MDGs) also known as the global goals in 2015 where the Sustainable Development Goals (SDGs) were adopted. SDGs benefit from the valuable lessons learned from MDGs though the agenda of the SDGs are more sustainable as they strengthen environmental goals. Therefore, the major difference on MDGs and SDGs is that while MDGs were drawn up by a group of experts in the 'basement of United Nations (UN) headquarters', SDGs includes a long and extensive consultative process comprising of 70 open working Groups, Civil Society Organizations (CSOs), thematic consultations, country consultations, participation of general public through face-to-face meetings and online mechanisms and door-to-door survey (Kumar, 2016). The United Nations aims to meet the Sustainable Development Goals by 2030, through access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. The other target is to support and strengthen the participation of local communities in improving water and sanitation management. It is for this reason that an evaluation of sanitation and hygiene was done in Sinazongwe District, Zambia.

1.2 Statement of the problem

The poor sanitation coverage in rural areas remains a big threat to the achievement of the Sustainable Development goals for sanitation target in Zambia. This is because most rural communities do not have access to any form of toilet facility. Thus, in 2015, the WHO/United Nations Children's Fund (UNICEF) stated that access to improved sanitation and hygiene in rural Zambia has been at 36 percent, (Grojec, 2015). The cost of not having toilets and practising good hygiene on the country's growth and economic development is significant. Research has proved that the lack of toilets and poor hygiene leads to loss of productivity, preventable health costs, low educational achievement, high morbidity and poor social development. "The effect of poor environmental sanitation and hygiene has mainly manifested in diarrhoea and other related

diseases. During recent years, Zambia has been losing 1.3 percent of its Gross Domestic Product (GDP), approximately ZMW 946 Million or US$194 Million annually due to poor sanitation. Most of it, US$167 Million, due to premature deaths of approximately 8,700 Zambians including 6,600 children annually due to poor sanitation and hygiene," (Water and Sanitation Programme - WSP, 2012).

In an effort to improve sanitation and hygiene in rural areas, the Zambian government adopted the Community Led Total Sanitation (CLTS). The Community Led Total Sanitation (CLTS) and Water, Sanitation and Health Education (WASHE) are among the sanitation programmes that the government of Zambia and many Non-Governmental Organizations are implementing in Sinazongwe District. The use of proper toilets, washing of hands after using the toilet and handling waste, personal hygiene and environmental sanitation are among the sanitation activities that the government of Zambia and many Non-Governmental Organizations are advocating for under the CLTS and WASHE. Despite such programmes that have been initiated to reduce sanitation and hygiene challenges in Zambia, most of the attention has been on the provision of water than sanitation facilities in the rural areas, thus, leading to poor monitoring and implementation of sanitation programmes. In Sinazongwe District, the situation is not any different. Most of the sanitation programmes in the district have been more on the technical, financial and institutional capacities at local authority level than on the planning, implementation and maintenance of rural sanitation facilities. Consequently, the problem is that in Sinazongwe District most villages still have low access to adequate sanitation facilities hence this study. The continued acts of open defecation, improper or poor hand-wash practices and environmental sanitation need to be addressed. These are also of concern in meeting target 6.2 of the Sustainable Development Goals (SDGs) for the year 2030 which aims at, "achieving access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations" (Osborn *et al*., 2015).

1.3 Aim of study

The study was aimed at evaluating the implementation of Sanitation and Hygiene Programmes in Sinazongwe District.

1.4 Objectives

In order to achieve the intended purpose, the study was guided by the following specific objectives.

i. To identify households with sanitation facilities in Sinazongwe District.
ii. To determine the households with improved hygienic practices in the study area.

1.5 Research Questions

The following research questions were used to achieve the specific objectives;

i. What is the proportion of households with improved sanitation facilities?
ii. What improved hygiene practices exist in the study area?

1.6 Significance of the study

The low access to sanitation facilities are among the major health problems that most rural areas in Zambia face. Diarrhoea is more prevalent among children whose households do not have an improved sanitation (latrine) facility or who share a facility with other households compared to households that have an improved, non-shared toilet facility. It is believed that if families have and properly use improved faecal disposal facilities, and adopt good hygiene practices including hand washing then they can reduce the incidences of diarrhoea, among young children thereby, improving the health and nutrition status of children and mothers. Further, as availability of toilet facility is also found to be a significant variable affecting health expenditure of sampled households (Ramaraju, 2013).

The significance of the study is that it will help to sensitize communities in Sinazongwe District to use sanitation facilities in the disposal of human waste.

The study results will also provide relevant information to decision makers, planners, and researchers about the sanitation situation of Sinazongwe District and will contribute to the existing body of knowledge on sanitation in rural areas.

1.7 Organisation of the Dissertation

This dissertation comprises seven chapters. Chapter One presents the introduction for the study. Literature review is presented in Chapter Two whereas the study area is described in Chapter Three. Methodological approaches are discussed in Chapter Four. Presentation of the research findings is given in Chapter Five whereas the discussion and interpretation of findings is in

Chapter Six. Finally, in Chapter Seven, the summary, conclusions and recommendations are presented.

CHAPTER TWO: LITERATURE REVIEW

2.1 Policy Formulation on Sanitation and Hygiene

To have a historical perspective on this very important issue, it is prudent to look at the path through which sanitation and hygiene has passed. According to WHO (2003), the sanitary revolution started in London in 1852 with the Metropolitan Water Act which required the water supply of the town to be filtered. Table 1 shows the milestone of water supply and sanitation as stipulated by the United Nations.

Table 1: Water Supply and Sanitation: Milestones in the United Nations (UN)

Year	Issues Targeted
2002	Target adopted at the world summit for Sustainable Development to reduce by half the number of people who do not have access to safe sanitation facilities by 2015.
2000	UN announces Millennium Development Goals (MDGs).
1980s	WHO links the IDWSSD with primary health care.
1980	Launch of the International Drinking Water Supply and Sanitation Decade.
1977	UN Water Conference in Mar del Plata, Argentina.
1961	Charter of Punta del Este sets targets for Water supply and Sanitation.
1959	World Health Assembly adopts a global, "spearhead" program for community water supply.
1957	First international drinking water standards published by the WHO Regional office for Europe.
1950	The Executive Board gives priority to rural environmental Sanitation; WHO and UNICEF collaborate closely.
1948	WHO assumes a constitutional function to promote the improvement of environmental hygiene.

Source: WHO (2003)

An association between polluted water and disease was established with the breakout of the 1882 Hamburg Cholera Epidemic. Following this, the examination of London's water supply for routine bacteria check was established in 1885 which in turn led to the chlorination of water in 1908.

In 2006, the United Nations General Assembly set aside 2008 to be the International Year of Sanitation (IYS) so as to raise awareness and to accelerate progress towards the Millennium Development Goals (MDGs) by 2015. This was after the realization that the access to sanitation is vital to ensure health, dignity and sustainable social and economic development for the world's poorest citizens. In 2008, on 15th October the Global Hand-washing Day was celebrated and on 19th November, 2008, the first Global Toilet campaign was launched and the first celebrations started in 2013 on the same day. World Toilet Day which falls on 19th November every year was set aside so as to promote public awareness of the need for adequate toilets to improve people's health and save lives.

2.2 Sanitation

Sanitation is taken to mean the safe management of human excreta (UNICEF, 2009). It therefore includes both the latrines and sewers and the regulation, education and hygiene promotion needed to reduce faecal-oral disease transmission. This definition also refers to re-use and ultimate disposal of human excreta. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and waste disposal (WHO, 2003). The improvement in sanitation and hygiene has greatly improved health; however, there are still many people with inadequate means of disposing of their waste. Outlined are some of the theoretical beliefs about sanitation around the globe and Zambia to be specific.

2.3 Knowledge, Attitude and Perceptions towards Human Excreta

Different cultures regard human excreta differently. Some tolerate it to a certain extent while for others the sooner it is out of sight, the better. Some cultures regard it as extremely abhorrent and disgusting while others have tolerated the handling of human waste. It is for this reason that Jewitt (2013), concluded in his study that, in some parts of urban China, night soil workers cart away human waste in "honey carts" and that in Vietnam there has been a long tradition of fertilizing rice fields with fresh human faces. It is believed that it is a taboo to share toilets with parents-in-laws as well as avoiding a situation where one was noticed every time they went to answer the call of nature (MLGH, 2009). Similarly, in Indonesia, households consider having a

toilet as a mean to protect their families against illnesses as well as to reduce the probability of being gossiped. However, in Indonesia too, some households agreed with the proposition that open defecation is acceptable because their ancestors practiced it (Cameron, 2013).

During the impact evaluation that was done for Total Sanitation and Sanitation Marketing, the results showed that about 92 percent of the households in East Java, Indonesia, had agreed that having a toilet protects their family against illnesses such diarrhoea. The households also agreed that 78.4 percent of them have toilets to reduce the probability of being gossiped (Cameron, 2013). This is also true in Zambia especially in the rural areas where people have the habit of defecating in the open and leave the human excreta which is then fed on by domestic animals especially pigs. The local people view faecal matter and sanitary issues with disgust and believe that there is nothing they can do about it. The local people have only taken it as part of their lives.

2.4 Problems Associated With Poor Sanitation

The accessibility of sanitation facilities can either be improved or unimproved. Grojec (2015), defines **access to improved sanitation as** a facility "that hygienically separates human faeces from human contact," with no considerations for functionality, accessibility or sustainability. The households that had improved sanitation facilities included those with pit latrines with a slab (Plate 6a) which is a fine concrete and those with vent pipes (Plate 6c). Fine concrete is used to produce a long lasting smooth slab easy to clean (Brandberg, 1997). The smooth finish also appeals to the eye. A vent pipe is required to reduce smells and flies. It is an improvement that makes pit latrines much more pleasant to use (Johnson *et al.*, 2013). Therefore, the sanitation facilities which are unimproved contribute to poor sanitation. Hence, poor sanitation creates a number of direct and indirect costs on communities, such as increased households' direct medical costs associated with treating sanitation-related diseases, lost income through reduced or lost productivity, time and effort losses due to distant or inadequate sanitation facilities, and lost school days which tend to influence the quality of life. In addition, there are also increased social costs of providing health services and clean-up costs, and reduced income from tourism (Nimoh, 2014). Poor sanitation creates a host of health hazards to people, as well as a bleak and disheartening visual landscape. Odours are often unpleasant, sometimes overpowering. Lack of basic sanitation facilities indirectly inhabits the learning abilities of millions of school-aged

children who are infested with intestinal worms transmitted through poor hygiene conditions. Therefore, efforts to prevent death from diarrhoea or to reduce the burden of diseases are doomed to failure unless people have access to safe drinking water and adequate sanitation (Dahal *et al.*, 2014). Thus, the provision of facilities for a sanitary disposal of excreta, and introducing sound hygiene behaviours are of capital importance to reduce the burden of disease caused by these risk factors.

2.5 Socio-economic Aspect of Sanitation

Sanitation provision is lagging behind water supply globally, thus threatening the expected health benefits of the major investments being made (WSP, 2002). Both investment in sanitation and its coverage targets were considerably lower than those for water supply. These shortfalls could be explained by the Zambian government's decision that household latrine construction would not be subsidized, and that, instead, government funds would be directed towards the less easily measured tasks of hygiene promotion and technical assistance. Regrettably, this approach appeared to have reduced the importance of, and attention to, sanitation in the sector reform process (WSP, 2002).

In 2010, 61 percent of the population of Zambia had access to an improved source of water supply and 48 percent had access to adequate sanitation, this is according to the United Nations data calculated on the basis of national surveys, including most recently the Demographic and Health Survey of 2007. These results still show the low rate of improvement in sanitation. The NWASCO report showed that sanitation coverage had improved in Zambia to 60.7 percent from 48.9 percent in 2013 (MLGH, 2014). However, sanitation remains very low compared to water coverage. A limiting factor commonly evoked is lack of funds for investment. Both water and sanitation have been losing out to other sectoral interests in the competition for scarce public funds (MLGH, 2007). This is also true in Zambia, sanitation and water sectors are under-funded compared to health, agriculture, education and sports. For instance, in the year 2007, the budget showed that there was about K498.93 billion spent on water supply and 123.93 billion on sanitation which amounted to 54 percent and 13 percent of the budget, respectively (MLGH, 2007).

Apparently in Zambia, most of the local government officials are only empowered in terms of capacity building and technical advice. However, when it comes to the provision of the required social services to help the under-privileged usually funds are not available. This to some extent has led to poor quality of sanitation facilities in rural areas or no facility at all thereby encouraging the use of the open bush. Jenkins and Sugden (2006) point out that, as regards sanitation services, there is evidence to challenge the views of those who instinctively favour public sector solutions to all 'water sector' problems. In developing countries the contribution of public-sponsored construction of sanitation infrastructure has been very small to date, compared with action by private households and providers to households. Most sanitation programmes are run by Non-Governmental Organization such as Water and Sanitation Programme (WSP) and World Vision. Even then most NGOs also have targets which are not able to benefit all communities. For example, World Vision has concentrated more on the provision of latrines in schools than in communities which means that a child would practice all the good ways of using a toilet and washing of hands after using the toilet but if there is no toilet and no hand-washing facilities at the child's home then the child could still contract diseases through poor sanitation acts.

Most people in rural areas have difficulties in finding money due to the informal jobs that they possess thereby having problems to construct proper sanitation facilities and recommended hand-washing tools. Therefore, access to credit is also noted as something which is commonly lacking in sub-Saharan African countries, particularly micro-credit for small service providers, whether community-based or private (WSP, 2003). Loans available are often only for income generating activities, rather than for improving community and household infrastructure. However, the access to sanitation is usually possible with households headed by males because most of them are involved in informal jobs as such they have the capability to look for resources required for the construction of toilets. Therefore, interest in constructing latrines was observed among male heads for their female members especially a newlywed daughter-in-law, in Odisha India thus, reflecting concerns for their privacy, security, and convenience (Routray *et al.,* 2015).

2.6 Programmes towards Sanitation and Hygiene in Rural Areas

To help solve the sanitation and hygiene problems in rural areas, the most significant strategy was put in place for Rural Water Supply and Sanitation (RWSS) namely WASHE (Water,

Sanitation, and Health Education) concept which was adopted in 1996 in Zambia for delivery of Water Supply and Sanitation (WSS) services (MLGH, 2012). The strategy facilitates the involvement of the rural population in determining priorities; selection of affordable and sustainable technology; management, operation and maintenance of infrastructure; and knowledge to improving health and hygiene practices in their communities (Kanyamuna, 2010).

The WASHE Programme is being implemented by the Local Authority at district level through the District Water, Sanitation, and Health Education (D-WASHEs) and Village Water, Sanitation, and Health Education (V-WASHE) committees which are part of the formal district and village level planning process under the new institutional arrangements (MLGH, 2009). This programme seeks to improve the lives of many people both in urban and rural areas through the use of toilets, hand-washing after using the toilet and the clean maintenance of the surrounding. This is done in a holistic and multi-sectoral approach in a bid to achieve the most towards finding a sustainable and lasting solution to the problems of water and sanitation affecting the district. Water, Sanitation and Health Education has set a task to supervise, monitor activities, community mobilization, and supervise rehabilitations and maintenance of infrastructure. The Local Government lobby for resources from Government and Donor Communities to fund the WASHE projects (Kanyamuna, 2010). As a result of these programmes, there has been a slight improvement on the sanitation situation in Zambia. For instance, the sanitation situation had improved from 44 percent in 1990 to 55 percent in 2004 (MLGH, 2009).

2.7 Open Defecation (OD)

In most rural areas, sanitation facilities are unavailable and force people to use the bush as their toilets. This is a source of contamination of unprotected surface water bodies. In Indonesia, the Impact Evaluation that was done for Total Sanitation and Sanitation Marketing showed that about 51 percent of households reported in East Java had defecated in the open at least from one household member (Cameron, 2013). The results also showed that men and children engaged more in open defecation than women. In Odisha, India residents preferred to defecate near local surface water bodies for anal cleansing and body bathing and cloth rinsing as one of the key elements of sanitation rituals especially after defecating in the morning (Routray *et al*. 2015). From these results, it is clear therefore that open defecation is practised almost everywhere especially in low income countries.

Studies have shown that women are rarely engaged in open defecation for fear of being raped or dignity's sake (UN-Habitat 2003b). This argument is also true in Zambia where in Chibombo a Chief commented on how happy she was with the attainment of Open Defecation Free (ODF) in her community as that status would avoid immoral practices where women would meet secretly with the lovers in the name of answering the call of nature (WSP, 2012). In Zambia, however, there have been efforts to sensitize the local people on the dangers of not using a proper toilets. Ending open defecation is an essential first step. It is for this reason that innovative approaches, such as Community-led Total Sanitation (CLTS) were established to help instill defecation-free practices within communities by raising awareness and supporting community-wide responsibilities (Budge, 2012).

CLTS is a UNICEF funded approach which is aimed at encouraging and empowering local communities to stop open defecation (OD) and start building and using latrines. CLTS was initiated in Bangladesh in 1999, in response to an evaluation of a sanitation project where existing top-down and heavily subsidized approaches were ineffective (Chambers, 2009). This practice was adopted in Zambia in 2006 by the Ministry of Local Government and Housing and some Non-Governmental Organizations like World Vision where before they provide latrines to a community they first sensitize the local people. For instance, they take the local people on what is known as a 'walk of shame,' where the residents are taken around the places where they defecate and ask them to pick up their faeces then they request them to put the faeces in the glass of water so as to demonstrate how they pollute the water. CLTS exposes the, "producer of the shit in a public space, the shit is no longer 'anonymous' but the faeces are now 'connected to someone' or a household" (Budge, 2012). This has to some extent helped many people without toilets to put up pit latrines to avoid embarrassment and the disgusting scene.

According to the Sanitation and Hygiene Master Plan (SHMP, 2011), open defecation free zone can be declared if following conditions are fulfilled:

- Every household of a village development committee (VDC), Municipality or a whole district should have an access to improved toilet,
- There should not be seen any sign of human excreta openly in the declared zone, and

- Public and private institutions such as schools, hospitals, government and private offices must have toilet facilities.

After the declaration of Open Defecation Free (ODF) in Nepal, Dahal *et al.,* (2014) reports that the people in all communities had started to maintain clean environment in their surroundings. Personal hygiene has significantly increased compared to the previous stage (that is before declaration of Open Defecation Free). This is also happening in Zambia where some villages have been declared ODF, for example, Macha Village in Choma District. Of course this has been facilitated by Chief Macha who made it mandatory for every resident to construct an improved sanitation facility at their households. Community members were found to have fully internalized health and hygiene messages including hand washing practices at critical period. They have constructed washing platforms to maintain personal hygiene (Sah, 2013)**.** Furthermore, the practice of open defecation has significantly reduced. A survey of rural households in the Philippines gave the following reasons for satisfaction of a new latrine that it leads to lack of flies, cleaner surrounding, privacy, less embarrassment when friends visit and less gastrointestinal disease (WHO, 2003). The reasons given were in the order of preference.

2.8 Hygiene Practices

Hygiene is one of the aspects which supports the sanitation of an area. Once hygiene practices are put into good practices, then the environment could be clean, safe and healthy. Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases (WHO, 2009). Hygiene consists of practices which are performed to preserve health which includes hand-washing and drying, waste disposal and bathing. In most rural areas, hand-washing practices are lacking. Mukwaya and Kusiima (1998) argued that, the lack of hand-washing facilities can pose as a risk factor in transmission of oral feacal diseases like typhoid, diarrhoeal disease, dysentery and cholera. To avoid the further spread of diseases from one person to the other, there is need to use clean water and a tippy-tap. A tippy-tap allows one to wash their hands using very little water as well as allowing one to rub both hands together while water runs over them thereby removing germs (Johnson *et al*., 2013). The washing of hands considers five critical times which includes, hand-wash after defecating, before preparing food, after eating, after cleaning or changing a baby and before feeding a child, (Kayser, et al., 2015). The hands should be washed using soap or ash. Washing hands with soap and water will remove substantially more disease causing organisms than washing hands with water alone.

To reduce further on the spread of diseases, hand-drying materials should be found where hand-washing facilities are. Drying materials are critical in reducing the spread of bacteria after washing and the spread of bacteria is more likely to occur from wet skin than from dry skin (Jumaa *et al*. 2005). The effectiveness of hand-drying is based on "the speed of drying, the degree of drying, effective removal of bacteria and prevention of cross-contamination" (Huang *et al*. 2012). This is because being wet on the hands provides ideal conditions for the survival and growth of microbes. In most rural areas however, hand-drying materials are not seen to be important by most people as a result they tend to use other means such as waist cloth known as *chitenge,* handkerchief or any available cloth.

The importance of a rubbish pit, clothline, elevated dish drying rack and bathing shelter are also critical to hygiene practices. For the safe disposal of waste, a rubbish pit is a requirement. It can cause contamination of surrounding soil, groundwater and surface water, and it can also create fire hazards, physical hazards and have poisoning effects (from pesticides and insecticides). It is for this reason that in India as well as in other parts of the world, human waste is being used as energy for lighting as well as cooking as a biogas (Jayaram, 1987). Equally in Zambia, it is encouraged that, "the generation of waste should be minimized, wherever practicable and waste should, in order of priority, be re-used, recycled, recovered and disposed of safety in a manner that avoids creating adverse effects (GRZ, 2013).

2.9 Legal Framework on Sanitation and Hygiene

The implementation of sanitation and hygiene programmes is guided by a number of international and domestic legal frameworks. It is for this reason that the revelation of such policies is done timely. The United Nations Human Rights Declaration (UNHRD) recognizes the importance of proper sanitation and hygiene where it has been stated that a human being has the right to clean, safe and healthy environment. In 2002 a World Summit on Millennium Development Goals (MDGs) was called where different goals were set. The water and sanitation specification was set under the goal target 2.6C which stated that 'by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation should be halved'. Unfortunately, this goal target was not achieved.

Furthermore, in 2015 another summit was called to check on the progress of the Millennium Development Goals (MDGs) where the Sustainable Development Goals (SDGs) were launched for 2030 (Osborn et al, 2015). The specific goal on sanitation states that there should be, "access to adequate and equitable sanitation and hygiene for all and end open defecation while paying special attention to the needs of women and girls and those in vulnerable situations". This goal also emphasizes on the importance of local community participation to improve water and sanitation management. All these policies are all dependent on the principles of Sustainable Development (SD) and Polluter Pays where sustainable development means, 'development that meets the needs and aspirations of the present generation without compromising the ability to meet the needs of future generations' and polluter pays means, 'the principle that the person or institution responsible for pollution or any other damage to the environment shall bear the cost of restoration and cleanup of the affected area to its natural or acceptable state'(EMA, 2013).

In Zambia, the Environmental Management Act (EMA) No. 12 Section 4 (1) - (2) provides for the right to a clean, safe and healthy environment (GRZ, 2013). The Public Act Cap 295 Part 9 and Part 4 provides for sanitation and housing and prevention and suppression of infectious diseases. The Statutory Instrument (IS) No.44 of 2007 of the local Government Act Cap 281 under Regulation 2 provides for penalties for defecating in any unauthorized place. The Act explains further on the penalties that need to be given even to those who defecate in the open.

In rural areas, local leaders especially Chiefs are encouraged under the Chiefs Act Cap 287 to ensure communities live in a good sanitary environment. It is therefore important for chiefs to always be in the forefront in the implementation of Sanitation and Hygiene Programmes. The Chiefs are also encouraged to lead by example and to set strict rules for their subjects as far as the access to sanitation and hygiene facilities are concerned. Some Chiefs like Chief Macha of Choma District are already implementing some of these rules, for instance, every household is expected to have a toilet and a hand-washing facility failure to which that family or households faces eviction from the village. Furthermore, the Village and Development Act Cap 289 section 18 part (e) explains the commitment of communities for the maintenance of sanitation and health of villages. This Act explains the importance of village communities to working together to have

a safe, clean and healthy environment. The Local Government Act No. 22 of 1991 gives authorities prime responsibility for the provision of water supply and sanitation services to all areas within the local authority boundary, including rural areas (MLGH, 2007)

3.0 Institutional Arrangements in Zambia

The government of Zambia has a number of ministries which are responsible for sanitation and hygiene programmes. The different ministries have different roles depending on their specialist. The ministries include; Ministry of Local Government and Housing (MLGH), Ministry of Health (MoH), Ministry of Education (MoE), Ministry of Community Development, Mother and Child Health (MCDMCH) and the Ministry of Chiefs and Traditional Leaders (MCTL).

The MLGH and its Department of Housing and Infrastructure Development (DHID) have the main responsibility of planning, coordination and monitoring of rural sanitation and hygiene monitoring at community level (MLGH, 2009). The MoH has the supervisory responsibility over sanitation and hygiene promotion whereas the MoE has the responsibility to plan, coordinate and monitor the construction of school toilets and school hygiene promotion (MLGH, 2007). The MCDMCH plans, implements and monitors sanitation and hygiene promotion activities to its staff both at district and sub-district level. The Cultural Development of MCDMCH encourages communities to share toilets with in-laws so as to destroy cultural barriers (a belief that a son/daughter-in-law is not supposed to share a toilet or bathroom with a parent-in-law) among households (MLGH, 2009). The MCTL through chiefs, village headmen and other traditional leaders sees to it that sanitation and hygiene promotion activities are affective. The ministry also enforces existing legislation that all private and public buildings need to have appropriate toilets and hand-washing facilities. Traditional leaders play a role of champions for improved sanitation and hygiene activities (Harvey and Adenya, 2009). It is for this reason that traditional leaders are invited to participate in planning and introductory meetings and workshops.

4.0 Research Gap

Traditionally, sanitation and hygiene has not received the priority it deserves worldwide. It has not been widely recognized by many people on how good sanitation and hygiene policies and practices can underpin socio-economic development and environmental protection (Jenkins and Sugden, 2006). Most of the policies on sanitation and hygiene have failed in rural areas due to lack of constant monitoring. On the other hand, such programmes are doing fairly well in urban

areas. Such practices are believed to be failing in rural areas due to lack of adequate knowledge and largely due to lack of education. This study will fill the gap in the lack of understanding of poor performance by local people on sanitation and hygiene in rural areas by focusing on existing programmes. The study will also show the importance of sanitation and hygiene as far as environmental health is concerned.

CHAPTER THREE: DESCRIPTION OF STUDY AREA

3.1 Location

Sinazongwe is located on the South-Eastern part of Southern Province and shares a border with Zimbabwe. It is part of the Zambezi Valley, which extends from longitude 26° 43` E to 27° 45` E and latitude 16° 50` S to 18° 00`S (Kanno, et al., 2013). Sinazongwe District is divided into two chiefdoms, namely Sinazongwe and Mweemba chiefdoms. Sinazongwe District of Southern Province is located about 125 kilometres from Choma town. The Figure 1 shows location of Sinazongwe District in Southern Province while Figure 2 shows the lower Zambezi area, towns and the study villages. Sinazongwe District was chosen due to the continued use of the open bush for defecation as well as poor hygiene facilities.

3.1 Location of Sinazongwe District in Southern Province (Adapted from Banda. T, 2017)

3.2 Physical Characteristics

This part describes the climatic characteristics in particular temperature and rainfall, hydrological system (drainage), relief and vegetation type of the district.

3.2 Location of studied villages (Adapted from Banda, 2017).

3.2.1Climate

Sinazongwe District experiences a Savannah type of climate characterized by three seasons namely hot season, cold season and rainy season. The daily mean temperatures for Sinazongwe District vary from 20℃ to 25℃. During hot season, actual temperatures reach as high as 40℃. The highest temperatures occur between September and the end of December while the lowest temperatures are usually recorded in June and July. Rainfall usually starts in October up to April with its highest in January. The district is surrounded by many mountains which receives dry air and eventually bring low rainfall hence rainfall is unpredictable and is usually less than 700mm and in some years there is hardly any (Kanno, et al., 2013).

3.2.2 Topography

The elevation of the district is between 300 metres and 400 metres above sea level. Sinazongwe district is characterized by outstanding geomorphologic features, which are spatially interrupted by terrific hills with loft summits. On the Northern and North-Eastern sides is the Zambezi Escarpment, which makes most parts of the district inaccessible in terms of road transport. Some rivers and all the streams drain from the escarpment. Along the sides 0of these rivers and streams are rich flood plains of alluvial soils, which are cultivated by the local people.

3.2.3 Hydrology

The district is drained by a number of rivers and streams. These streams and rivers are dry for most of the year because of low rainfall received and due to the steep gradients, which give rise to high overland flow and drainage into Lake Kariba. The main rivers in Sinazongwe are Maaze and Zambezi, but it has several small streams such as Siatuli, Kalinkoto, Nakasunga, Sigombela, Muchekwa and Citibbi among others. The district has two small dams namely Vwavwa and Chimonselo while Kariba is the largest man-made lake in Zambia. Plate 1 shows images of the water situation in the district.

(a) (b)

(c) (d)

Plate 1: Images of some physical characteristics of Sinazongwe District; (a) Sinazongwe Harbour, (b) Rocky dam shoreline, (c) Dry Zongwe River bed and (d) Vwavwa dam.

3.2.4 Vegetation and Soil

Sinazongwe district is dominated by the Miombo woodlands on the escarpment and Mopani tree species in the valley. The area is located along the Zambezi Escarpment thus consists of a lot of

rocks and stony soils. Low rainfall received in this region only allows an open forest which consists of a lot wild fruits such as *mabuyu* and *busiika* (*Tamarindus Indica*) that could be easily exploited for processing of local drinks. Timber, honey and herbs for medicine are other forest products which are exploited. Grass is very short throughout the district due to low rainfall; however, some areas found in the pockets of alluvial soils in the flood plains have tall grass (Kanno, et al., 2013**).**

3.3 Socio-Economic Characteristics

This section explains social and economic aspect of the people in the area that is in terms of population, district administration as well as the dominant economic activities.

3.3.1 Population

The population of Sinazongwe District has been increasing from 80,455 in 2000 to 101,617 in 2010 (CSO, 2010). The growth rate of Sinazongwe District is currently at 2.4 (CSO, 2010). The population distribution follows the physical characteristics of the district. In Maamba, the population is high because of coal mining activities. Sinazeze is at a confluence of three roads, from Sinazongwe to Maamba to Choma, and to Malima. Because of its positioning, Sinazeze has grown into a sub-centre through the provision of services such as accommodation, petrol, drinks and meals to travellers. Malima is the agricultural belt of the district, but Buchi (farm block) the location for ZAMBEEF farm is the home of commercial farming. The prominent ethnic groups in the district are the Valley Tonga, who practice a traditional ceremony called *Buddima* which is usually held after or during a funeral and most common in years of good harvest.

3.3.2 Administration

Sinazongwe District is a single constituency with 12 wards. However, Maamba, Sinazongwe, Sinazeze and Malima are the most populated of them all. Traditionally, Sinazongwe is divided into two chiefdoms, namely, Sinazongwe and Mweemba. Sinazongwe chiefdom includes the areas around the district administration and Sinazeze, whereas Mweemba chiefdom include the areas that surround Maamba township and it is in this chiefdom that the study areas are found.

3.3.3 Socio-economic Activities

Sinazongwe District has a number of economic activities which include coal mining, fishing and tourism. Maamba Collieries is the biggest industry which employs approximately 1,500 people (Kapambwe, 2014). It has the country's first and biggest thermal power plant. Tourism activities

are also developing in the area along the rocky shores of Lake Kariba, Africa's biggest man-made lake.

In the central of the District is Siansowa where there is a large-scale crocodile farming taking place there. A number of guest houses and lodges have been constructed in the area to offer accommodation to tourists. Fish sporting is another activity which attracts tourists in the area.

Fishing is another economic activity taking place in the district. This activity has so far proved to be the main source of income to the local people especially the illiterates. The main types of fish that are caught include breams, tiger fish and *kapenta* (sardines). *Kapenta* fishing is the main economic activity undertaken in the district. Plate 2 shows the most common type of Kapenta fishing vessels used.

Plate 2: Kapenta fishing motor-engine boats. Field data, 2016.

CHAPTER FOUR: METHODOLOGY

4.0 Introduction

This section describes the methodology used by this study. It includes the sources of data, research design, sampling techniques, data collection techniques and the methods of data analysis used.

4.1 Research Design

Kanyemba and Siabaswi villages was selected as the case study location after consultations with the Sinazongwe District Council and World Vision Zambia. The main reason for the selection of the two villages was that they were presented with low levels of sanitation and hygiene practices among other villages in the district. According to Msabila and Nalaila (2013) a case study approach entails an investigation that seeks to describe in detail a unit in context and holistically. A case in this context is a unit or an individual or object that one intends to study or examine. It can be a person, an institution, concept, theory or a farm. The aim is to bring a deeper insight and better understanding of the problem prevailing. Both qualitative and quantitative methods were used for data collection. Qualitative data gave a general overview of the sanitation situation in Sinazongwe District. Qualitative data were collected from the interviews and Focus Group Discussions whereas quantitative data were collected from structured questionnaire interviews.

4.1.1 Sample Size and Sampling Techniques

A sample size of 60 households was used from the two villages Siabaswi, and Kanyemba which has the total population of 5,560 people with 240 households according to the village registers. Hence, 30 households were interviewed from each village. The sample size was decided upon using the rule of the thumb at 25 percent. The number of respondents from each village depended on the number of households with toilets and those without. A purposive sampling technique was used to categorize the sanitation facilities according to those who have toilets and those who do not have. This technique was chosen because it is believed that it is not all the local people in the study area that do not have toilets (Kombo, 2014).

The selection of key informants was purposive by targeting the district head of government departments of MLGH, MOE and MOH as they are directly involved in the community's sanitation and hygiene programmes, the village headman and the sanitation and hygiene specialists at the district World Vision office. A total of five key informants were interviewed. The heads of department were targeted because they were more knowledgeable and have the first hand information.

4.1.2 Data Collection Procedure

Before commencing the research, the researcher sought for permission to carry out research from Siabaswi and Kanyemba villages from the village headman and the councilor. An introductory

letter was obtained from the University of Zambia, Department of Geography and Environmental Studies, which introduced the researcher to the targeted villages and to key informants in the district. While in the villages, the researcher first sought permission from the Heads of Households to conduct the study.

4.2 Data Collection

This research used both primary and secondary types of data. Primary data were collected using interview schedules and guides, observation and Focus Group Discussions (FGDs). The other source of primary data included in-depth interviews from key informants. Secondary data was collected from published and unpublished and from internet. These data were collected using various techniques.

The data for this study was collected using multiple strategy techniques. The strategy allowed corroboration of data obtained from each of the various different methods (Kothari, 2014). In this study, apart from semi-structured questionnaires, in-depth interviews, Focus Group Discussions (FGDs), document review and observation were used to confirm the findings.

4.2.1 Primary Data

Semi-structured interviews, in-depth interviews, Focus Group Discussions and observations were used to collect primary data.

4.2.1.1 Semi-structured Interviews

The semi-structured interviews were conducted to obtain information on the sanitation and hygiene situation of the local people in the villages under study. Semi-structured questionnaires were used as interview guides and the schedule had both close and open ended questions as shown in the Appendix I. The close ended questions helped to capture specific and guided responses while the open ended questions allowed the participants to express themselves where there was need. The questionnaire which was in English language was translated into Tonga language for the participants to understand. This was done with the help of a research assistant. The response and collection of the information from the questionnaire was done at the same time. There was no need of leaving the questionnaire with the respondents. This therefore, helped the researcher to collect as much data as possible. Confidentiality was guaranteed to the respondents because no names were written on the questionnaires.

4.2.1.2 In-depth Interviews

In-depth interviews were conducted with the In-Charge of Kanchindu Clinic and the Head teacher from Cisyabulungu Primary School in the village so as to capture information which was not captured in the questionnaires (Appendices II and III). There were two in-depth interviews conducted. A request was made to have the interviews recorded for all the discussions.

4.2.1.3 Focused Group Discussions

There were three Focus Group Discussions (FGD) conducted which included females, males and both females and males (Appendix IV). The group comprised of 8-10 people as facilitated by the researcher. FGD times were decided based on participants' convenience and availability. Their responses were used to come up with the groups. All the three discussions were done on 2nd March, 2016. The FGD for both females and males was done at the headman's residence where 6 women and 3 men were in attendance. The other group which was comprising of 8 females only was held at a residence of a Community Champion's residence who spearheads the WASHE programmes at the community level. The third FGD for 10 men was held at one of the respondents who had almost all the requirements for improved sanitation and hygiene. A recorder was used to record the discussions with the help of the research assistants.

4.2.1.4 Observation

Field observations and physical inspections were also actively employed on the selected respondents' premises to verify some of the responses that were given. Key elements that were observed were the toilet facilities, hand washing facilities and hygiene on the surroundings of the local people in the selected households.

4.2.1.5 Key Informants

The five key informants included the Rural Water and Coordinator at the MLGH, the village headman, Kanchindu Clinic In-charge, the Head Teacher Cisyabulungu Primary and the District WASHE Coordinator from World Vision (Appendix V). The responses from these discussions were all recorded. Figure 4.1 shows an interview session with the headman of Siabaswi Village.

Plate 3: An interview session with the Siabaswi Village Headman.

Source: Field photo, 2016.

4.2.2 Secondary Data

The bulk of the secondary data was obtained from the University of Zambia (UNZA) Library, Ministries of Local Government and Housing and, Education, Science and Vocational Training and Early Education. Data from internet sources was also useful on how School WASH Programme has been implemented in other countries and the extent various stakeholders were involved in these activities.

4.3 Data Analysis

Data analysis was done using quantitative statistical methods. The data obtained from the semi-interview schedule was recorded in Statistical Package for Social Sciences (SPSS) version 16 and Excel sheets to analyze quantitatively. Excel analyzed 60 responses of the semi- structured interview schedule to bring out statistical representation of data in graphs. Therefore, the results obtained from the semi-structured interview schedule were analyzed using a descriptive method. A thematic analysis was used to analyze information that was obtained from three key informants and Focus Group Discussions. Photographs were also used to depict the situation

obtaining in the area under study. However, all the information obtained was related to the field observations during the period of data collection.

4.4 Limitations of the Study

A number of challenges were faced by the researcher during data collection. Some challenges included the following;

(i) Non-responses from some interviewees. Some households refused to be interviewed for fear of being killed for rituals and other bad vices like Satanism which the community under study feared. Others were also not sure on how confidential and how relevant the interviews were to them. Some groups of people as well as individuals expected to be paid after the interviews, thus some were not able to respond appropriately.

(ii) Some key informants were reluctant to give information for fear of losing their jobs especially those working with the government. This was despite the assured confidentiality. This therefore, tended to limit the amount of data collected. Despite these challenges data was collected

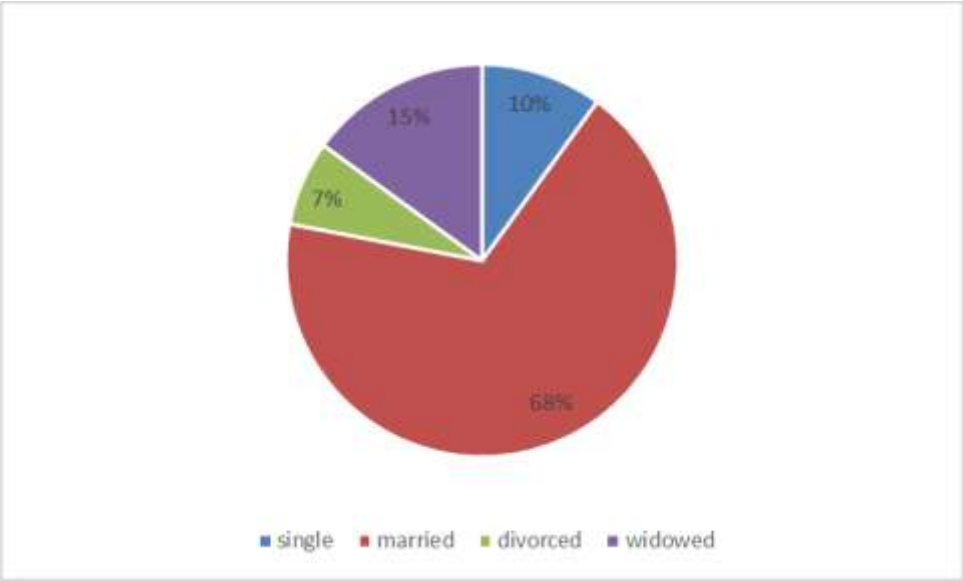
CHAPTER FIVE: FINDINGS OF THE STUDY

5.1 Introduction

This chapter presents findings of the research which are summarized in tables and illustrated by graphs and photographs. The findings of this study were mainly based on the respondents' background, access to sanitation facilities, Open Defecation, participation in activities such as World Toilet Day, Hygiene Knowledge and Practices as well as Hand wash facilities. The chapter also provides information on the responses from the key informants and Focus Group Discussions.

5.2 Characteristics of Respondents

The study revealed that out of 60 respondents, 6 (10%) were single, 41 (68.3%) were married, 4 (6.7%) were divorced and 9 (15%) were widowed as shown in Figure 5.3. These results showed that most households which were headed by males had access to sanitation facilities. Similarly, the households where the respondents were married showed good hygiene practices unlike those who were single.



5.3. Marital Status of the Respondent. (Source: Field data, 2016.)

The study interviewed more males (75%) than females (25%). Table 2 provides a summary of gender of participants. There were more males during interviews because it was during rainy season and most women were working in the fields.

5.2.1 Age- groups

The study showed that most of the respondents were between the ages 26-50 years old. Among them all only 11 respondents were above 50 years ago (Figure 5.4).

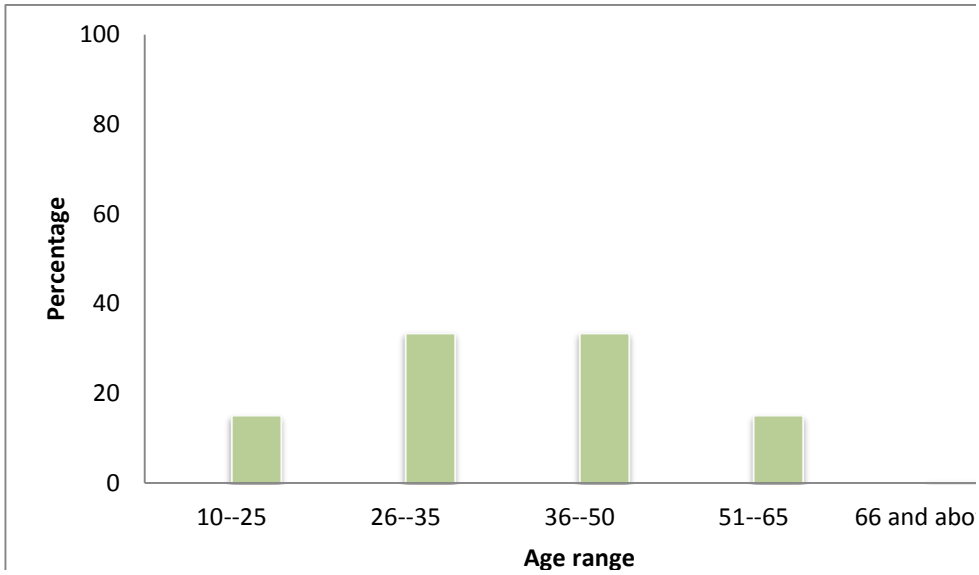


Figure 5.1: Age-groups of the respondents. (Source: Field data, 2016.)

5.2.2 Employment Status

Most of the people in the study area were in informal employment and over 30% of the respondents were employed. Only 1 percent of the respondents were in formal employment as shown in Figure 5. The 1 percent included those that are working at Maamba Colleries Mines, Fishing Farms and crop farms.

5.2.3 Monthly Income per Households

The results showed that out of 60 households, 40 households are able to earn some income of over ZMW 1, 000 per month. On average, most of the households (67%) are in informal employment while the others (33%) were dependents taken care of by their children to sustain their lives. Figure 5.5 shows the monthly income distribution per household.

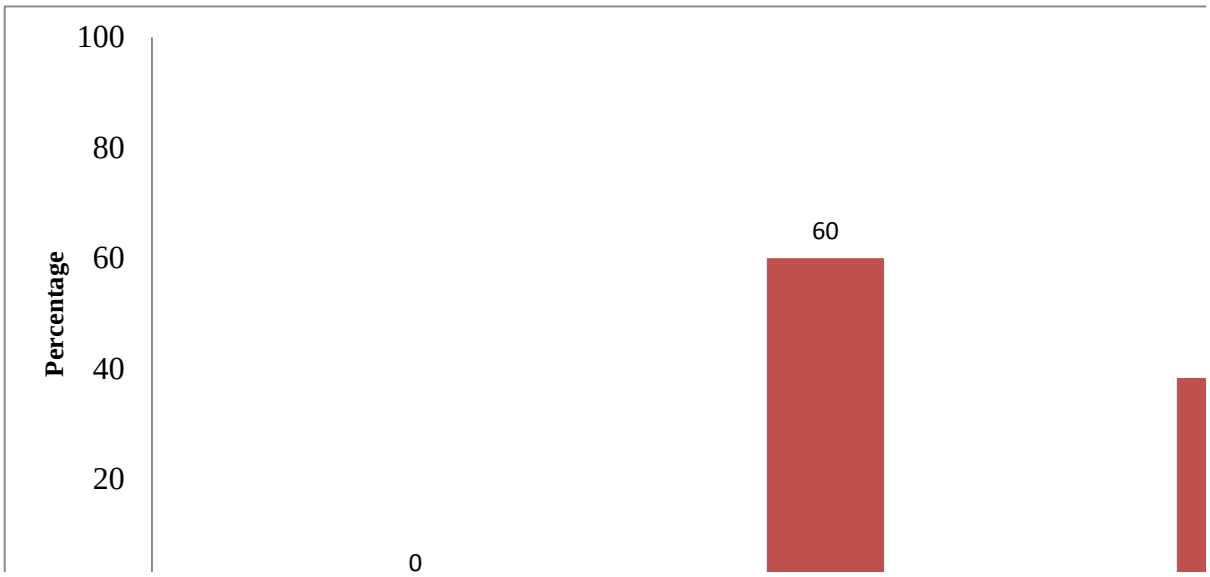


Figure 2.5: Employment Status of Respondents. (Source: Field data, 2016)

5.3 Sanitation Facilities

This section explored the different types of sanitation facilities that were used by the households. It also deals with the state of the sanitation facilities, thus, the evidence of any damage, presence of appropriate cleaning materials, open defecation, toilet cleaning and World Day participation, among others.

5.3.1 Access to Sanitation Facilities

The findings were that out of 60 households (excluding key informants), 22 (37%) households have no access to sanitation facilities and 23 (38%) households have pit latrines without slabs (a floor with cement) whereas 13 (22%) households have pit latrines with slabs and only 1 (2%) household had a toilet which is connected to a septic tank. The results therefore, show that 79 percent of the households had unhygienic sanitation facilities which include those with pit latrines without the slab, those using community latrines and those with no facilities at all. The results also showed that the common types of sanitation facility in the district are pit latrines without a slab (38%) followed by no facility at all (37%) as shown in Figure 5.6. On average each household had 6 people including children. Plate 6 shows examples of pit latrines in the study area.

5.3.2 Shared Toilet facility

The study revealed that 19 (31%) households out of 60 households share sanitation facilities and 31 (52%) households do not share sanitation facilities meanwhile 10 (17%) households were not sure whether their facility was shared or not (Table 2). This is because the concerned participants live near a market place where the marketers and customers would use their toilet even without their knowledge. It was also revealed that from the shared toilet facilities no payments were made to use the facilities. The argument given for the sharing of toilets among households was to share costs during the construction of a toilet.

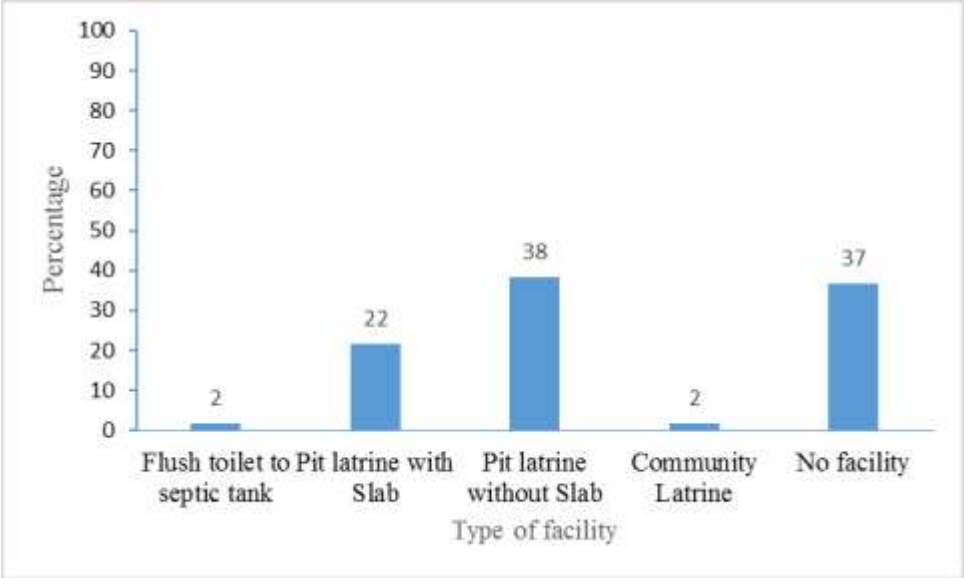


Figure 5.6: Access to Sanitation Facilities in the study area. (Source: Field data, 2016)

Table 2: Responses to the question on Shared Facilities.

Responses on shared facilities	**Frequency**	
	No.	(%)
Yes	19	31
No	31	52
Don't know	10	17

Source: Field data, 2016.

5.3.3 Functional Sanitation Facilities

The respondents were asked a question on whether their sanitation facilities were working or not, 34 (57%) responded that their facilities were functional while for 26 (43%) households reported

that their sanitation facilities were not functional. However, the other reason was that some facilities had filled up.

5.3.4 State of the sanitation facilities in the recent years

The respondents were asked to give evidence on whether their sanitation was in the recent years non- functioning or unused. A total of 36 (60%) households responded that their facilities were at some time not functioning and 23 (38%) households have had their toilets functioning without any problems as shown in Figure 5.7.

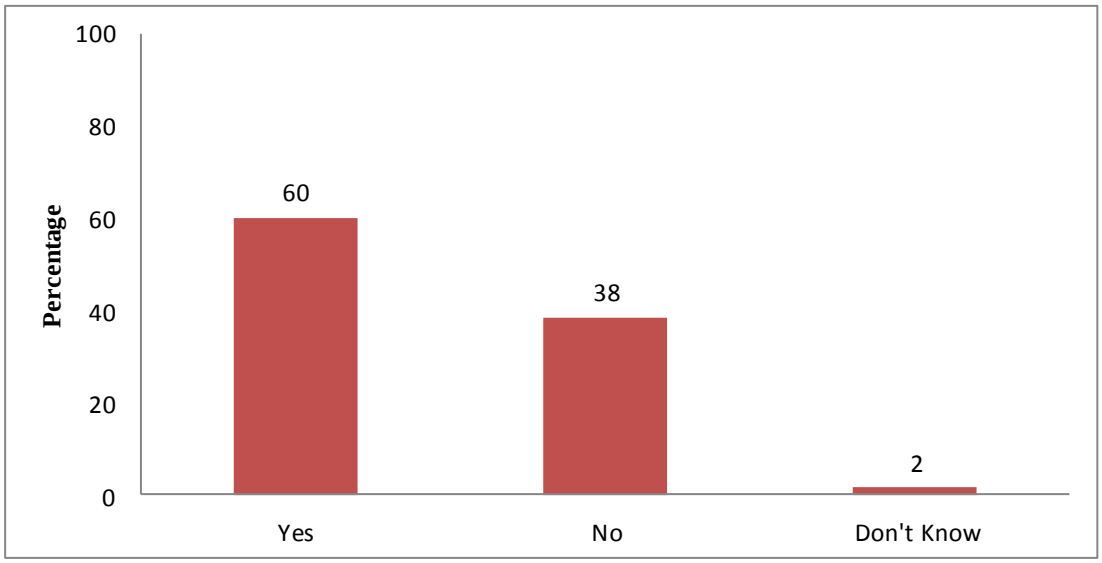


Figure 5.7: State of Sanitation Facilities in the recent past. (Source: Field data, 2016).

5.3.5 Households Using the Non-functional Sanitation Facilities

The respondents were also asked whether they were using the same toilet which was non-functional or in a deplorable state. The results obtained showed that 54 percent of the respondents said that they were not using the toilets that were damaged or had cracked while 43 percent of the households were still using the facilities despite the level of damage.

5.3.6 Evidence of damage to the toilet

The respondents were also asked whether they were using the same toilet which was non-functional or in a deplorable state. The results obtained showed that 54 percent of the respondents said that they were not using the toilets that were damaged or had cracked while 43 percent of the households were still using the facilities despite the level of damage. Some toilets had cracks on their walls which indicated that they would collapse with strong wind.

5.3.7 Presence of appropriate cleansing materials

Though most households didn't have the recommended cleansing materials in their toilets, most of them had alternatives. The results revealed that 93 percent of the households had appropriate cleaning materials while 7 percent were found without anything to use (Table 3).

Table 3: Presence of Appropriate Cleansing Materials

Responses to Appropriate cleansing materials	Yes (newspapers, books, maize shell, stones)	No	Total
Number	56	4	60
Percentage	93	7	100

Source: Field data, 2016.

5.3.8 World Toilet Day Participation

The respondents were also asked whether they have ever participated in activities of the World Toilet Day which falls on 19th November every year. Most households expressed ignorance towards the participation. Most of them (98%) had never participated during this special day even though they have heard of it and only 2 percent said they had participated in the past.

(a)

(b)

(c)

(d)

Plate 4: Types of Sanitation Facilities in Kanyemba and Siabaswi Villages (a) Pit Latrine with a slab (b) Pit Latrine without a slab (c) Ventilated Improved Pit Latrine (VIP) (d) Pit latrine without a roof. Source: Field photo, 2016.

5.3.9 Evidence of Open Defecation

The problem of open defecation in Kanyemba and Siabaswi villages were not unexceptional though most of the households were found with unimproved sanitation facilities. The results showed that 50 percent of the households still defecate in the open bush and another 50 percent have refrained from using the open bush.

5.3.10 Evidence of toilet cleaning

The people of Kanyemba and Siabaswi showed evidence of cleaning their toilets where 60 percent of the households have their toilets cleaned at least three times a week while 32 percent of them did not clean their toilets. However, 8 percent of the households were not sure whether the toilets were cleaned because they were shared facilities (Figure 5.8).

5.4 Hygiene Practices

The communities were asked questions on how abreast they were on hygiene practices. A number of questions were asked on the presence of hand-washing facilities, rubbish pit, cloth drying line, elevated dish rack, bathing shelter as well as hand-wash facilities supplied with water, soap, ash and hand drying materials.

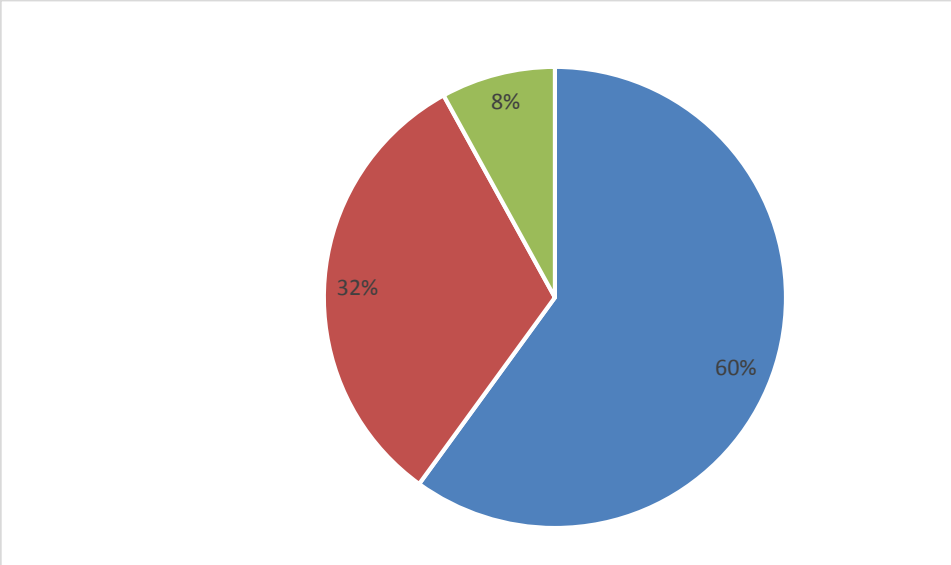


Figure 3: Evidence of Toilet Cleaning. (Source: Field data, 2016)

5.4.1 Presence of hand-washing facilities

The results obtained on the presence of hand-washing facilities showed that only 14 (23%) of the households had hand-washing facilities and 46 (77%) had no access to hand-washing facilities. The requirement is that the hand-washing facilities should be located near the entrance or adjacent to a toilet where everyone would easily see them. Plate 5 shows an example of where a hand-washing facility should be located.

5.4.2 Hand-wash Facilities with Access to Water

The study revealed that only 7 (12%) households had their hand-washing facilities supplied with water always, 10 (17%) households had their hand-washing facilities supplied with water on rare (sometimes) occasions and the rest of the interviewed households (71%) had never had their hand-wash facilities supplied with water (Figure 5.9).

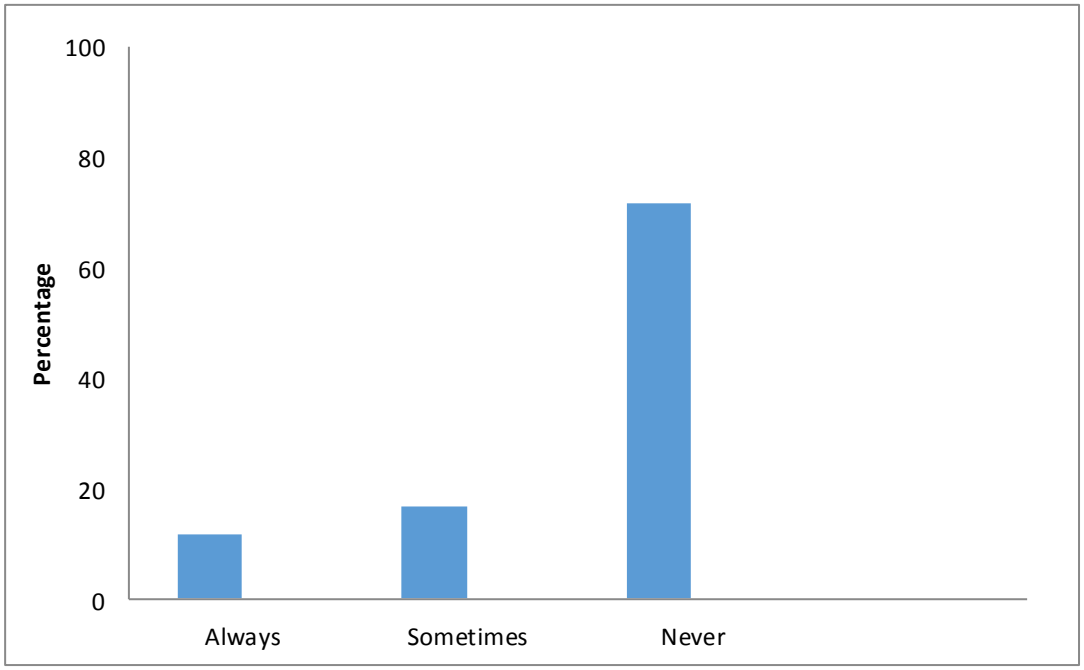


Figure 5.9: Hand-washing Facilities Supplied with Water. (Source: Field data, 2016)

5.4.3 Hand-wash Facility supplied with Soap or Ash

The communities were also asked on whether their hand-washing facilities were supplied with soap or ash. The results revealed that only 9 (15%) of the households had their facilities with soap always and 5 (8%) had their hand-washing facilities supplied with soap at times, and 46 (77%) households had never had their hand-washing facilities supplied with either soap or ash (Figure 5.10).

5.4.4 Hand-wash facilities with hand drying materials

The ownership of hand-drying facilities by many households was found not to be a common practice by many households, thus, the results showed that only 5 percent of the households had hand-drying materials alongside hand-washing facilities. Only 3 percent of the households had their hand-washing facilities supplied with hand-drying materials sometimes and 92 percent of them had never had their hand-washing facilities supplied with any hand-drying materials instead they could dry their hands with their clothes or *chitenge* that they could be wearing (Figure 5.11).

Plate 5: An Example of the Hand-washing Facility. Source: Field data, 2016.

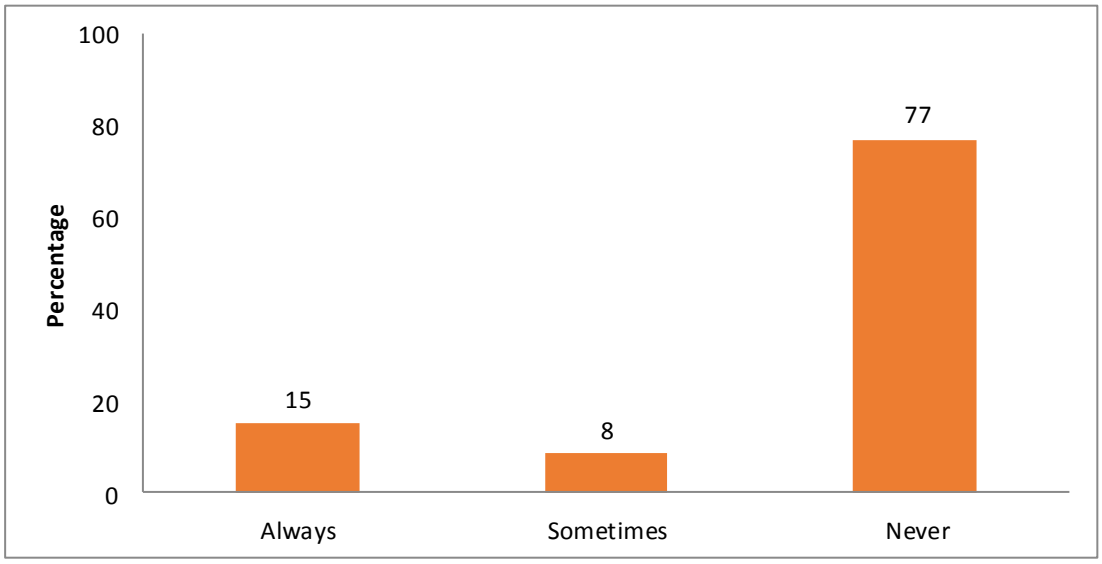


Figure 5.10: Hand-washing Facilities Supplied with Soap/Ash. (Source: Field data, 2016)

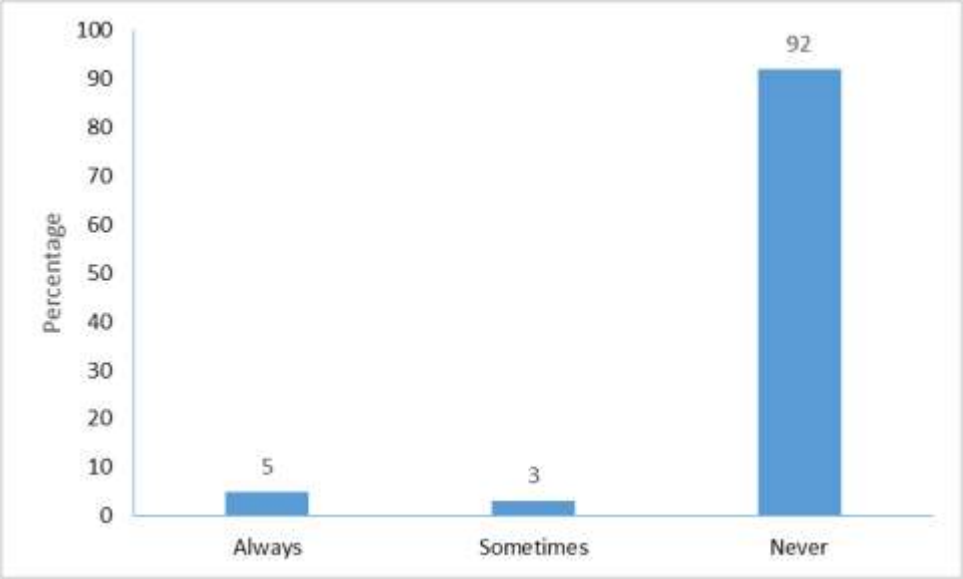


Figure 5.11: Hand-wash Facilities with Hand-drying Materials. **(**Source: Field data, 2016).

5.4.5 Washing of hands at critical times

The communities were also asked to give views on when they wash their hands. The results showed that all respondents wash their hands after using the toilet, before preparing food and before and after eating, this showed 100 percent of positive responses. However, the challenge was found to be on the washing of hands after changing the baby's nappies and before feeding the baby, the results showed that all these indicators recorded scored 57 and 50 percentages respectively (Figure 5.12). The questions on the changing the baby's nappies and the feeding of the baby were directed to women who were found at the time of an interview.

5.4.6 Access to rubbish pit

The issue of rubbish pits for the disposal of waste is still a challenge. The results showed that only 30 percent of the households had access to rubbish pits always, 22 percent had access to a rubbish pit sometimes and 48 percent households had never had access to a rubbish pit (Figure 5.13).

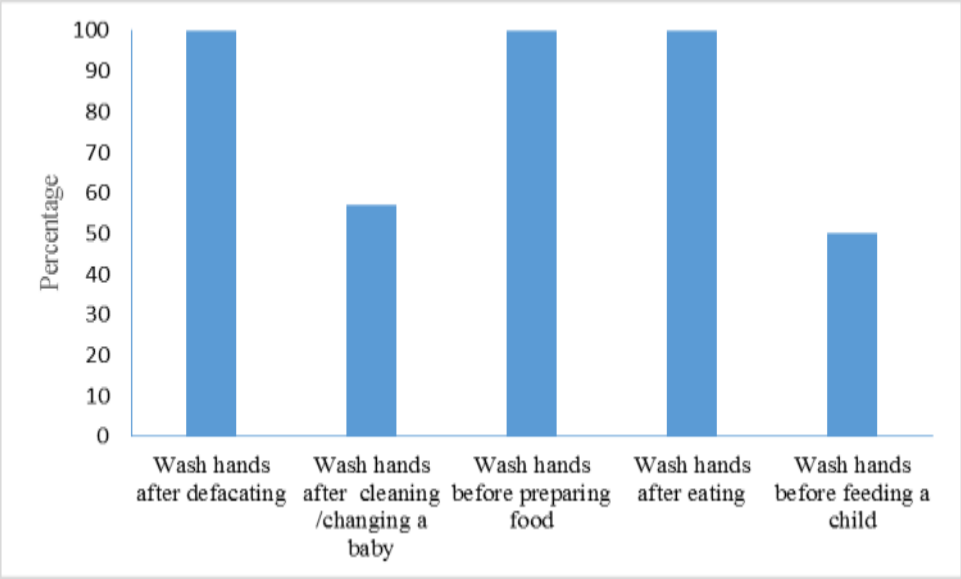


Figure 5.12: Hand-washing at critical times. (Source: Field data, 2016)

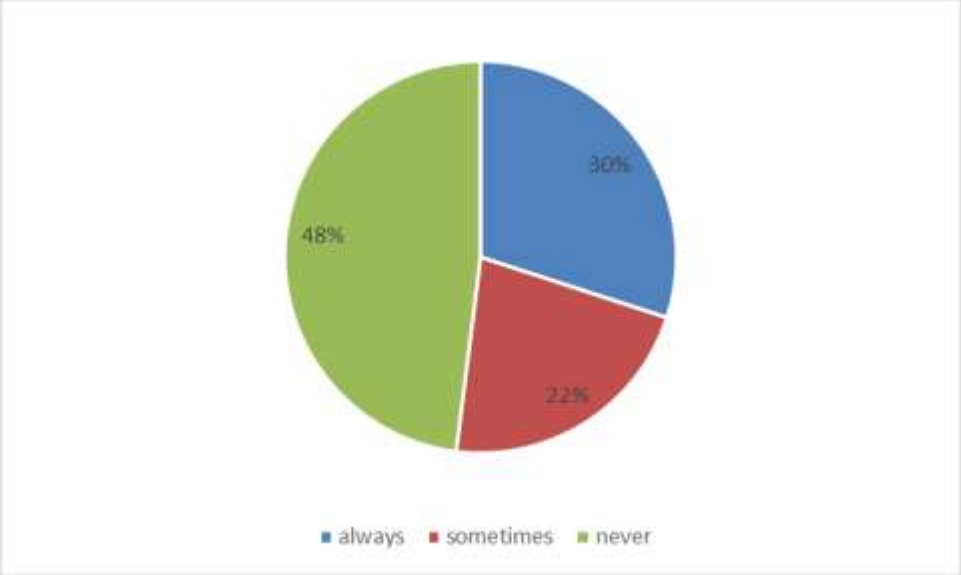


Figure 5.13: Households with Access to Rubbish Pit. (Source: Field data, 2016)

5.4.7 Access to a Cloth drying line

The results on the households with access to cloth drying lines showed that most households (87%) had cloth lines, 8 percent had never had a cloth line and 5 percent had a cloth drying lines on rare occasions (Figure 5.14). Those without cloth drying lines used the hedges of their premises to dry their clothes or alternatively they used the grass.

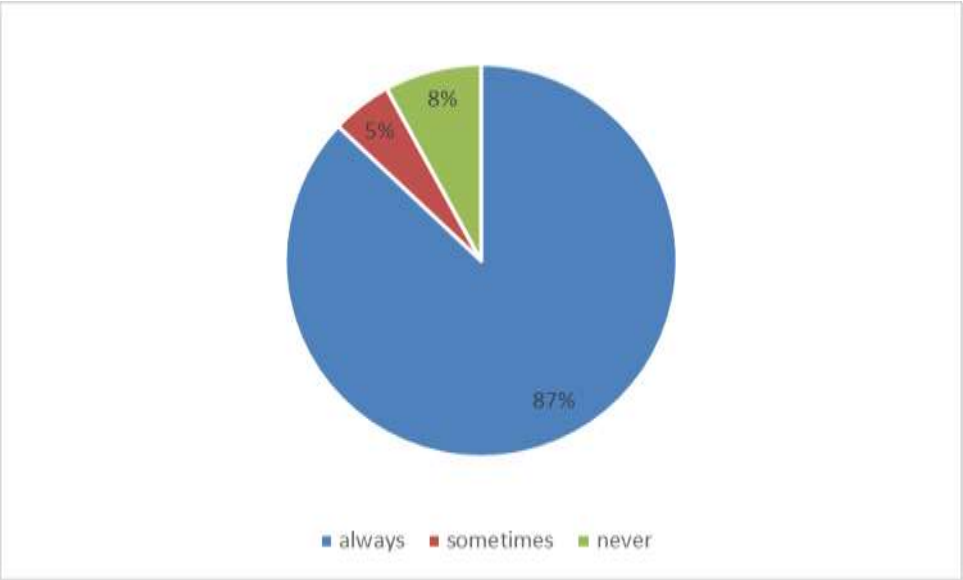


Figure 5.14: Households with Access to a Cloth Drying Line. (Source: Field data, 2016).

5.4.8 Access to elevated dish drying rack

It was revealed that the communities of Kanyemba and Siabaswi did not understand the importance of having elevated dish drying racks. From the sixty households interviewed, nineteen (32%) had elevated dish drying racks and four (7%) households had the racks once in a while (sometimes). The remaining 37 (61%) households had never had the elevated dish drying racks (Table 4).

Table 4: Access to elevated dish drying rack.

Access to Elevated Dish Drying Racks	**Percentage**
Households with Access to elevated dish drying rack always	32%
Households with Access to elevated dish drying rack sometimes	7%
Households never with Access to elevated dish drying rack	62%

Source: Field data, 2016.

5.4.9 Availability of a bathing shelter

The availability of bathing shelters in Kanyemba and Siabaswi villages were so overwhelming. Almost all the households, 58 (97%) were found with bathing shelters, only two households (3%) didn't have any (Table 5). Some of the different types of bathing shelters in the two villages studied are shown in plate 5.

Table 5: Availability of Bathing Shelters

Response	**Percentage**
Yes	97
No	3

Source: Field data, 2016.

(a) (b)

Plate 6: Types of bathing shelters used by respondents (a) Bathing shelter made from plants commonly known as '*Citibbi*' (b) Bathing shelter made of bricks without a door or roof.
Source: Field Photos, 2016.

(a) (b)

Plate 5: Types of bathing shelters used by respondents (a) Bathing shelter made of bricks a material or sack to cover the door but without a roof, and (b) Bathing shelter with an underlying rock used for bathing without any thing covering the entrance but covered with a *citibbi* plant.
Source: Field Photos, 2016.

5.5 Suggestions made by the respondents in the FGDs

The FGDs comprised of three groups; males, females and mixed (females and males)

5.5.1 Men's Group

The men gave their suggestions on what is happening in their community concerning sanitation and hygiene. A question was asked to find out without they were aware of their role as far as sanitation and hygiene were concerned. According to their response, in terms of sanitation facility provision, they said that their role was to dig up a toilet for their families as well as buying the building material for the toilet. The men were able to give evidence of open defecation. When a question was asked on how they protect their families when they visit the bush to answer the call of nature, they responded that they do not go very far away from their household where they use a hoes to make a hole for defecation after which, they cover the waste. They were to attest to attending meetings which concern sanitation and hygiene where they were taught on how to construct toilets, the importance of hand-washing and the importance of having dish racks. However, they showed ignorance on how they share the information they receive with their households.

They face the challenge of finances to acquire all the required sanitation and hygiene facilities.

5.5.2 Female Group

They all agreed to the role of cleaning the surrounding and the toilet. However, only a few responded to having a dish rack, hand-wash facility and dry laundry lines as being part of their responsibility. They agreed to having attended sanitation and hygiene meeting though most of the times their husband's attended them on their behalf. They responded that at those meetings they learnt how to keep their surroundings clean and the importance of having a toilet. The women responded that it was a role of a husband to provide sanitation facilities unless if that women does not have a husband then any male in the household should be able to help. They responded that it was rare for them to visit the clinic due to diarrhoeal cases. Regarding personal hygiene, the women responded that they use a pieces of new cloth which they washed, dried and used several times. A few used napkins and modern menstrual pads. The pads were either burnt or thrown in the pit latrines. The women responded that they have challenges to implement sanitation and hygiene programmes due to financial challenges as well as lack of man power for widows and the single to construct toilets. Some females also responded that they face a challenge of sharing toilets which makes it difficult for them to clean the toilets.

5.5.3 Mixed Group

The group responded that sanitation and hygiene programmes are programmes which looks at the cleanliness of the environment as well as the ownership of toilets. The members responded that the local leaders especially the headmen have the responsibility of foreseeing sanitation and hygiene programmes. The members responded that they are aware of the importance of safe and proper sanitation environment. Out of the 10 members in this FGD, only 6 responded to having all of the following; having a toilet, bathing shelter, dish rack, and drying line.

5.6 Responses from Key Informants

The key informants included, the Headman, Rural Water and Sanitation Coordinator for District Council and World Vision WASHE Specialist.

5.6.1 District Rural Water and Sanitation Coordinator

The role of the council in the implementation of Sanitation and Hygiene programmes is being in-charge of water and sanitation programmes in the district through D-WASHE and trickles down to V-WASHE which is present in all the villages in the district. He explained further that in the villages, they have attached Community Champions whose aim is to monitor the implementation of water, sanitation and hygiene programmes in each village. He responded that Kanyemba and Siabaswi Villages have 3 Community Champions. The council sources their funds from the government and other donors among them, UNICEF and World Vision and Operation Eye-sight. The funding is very effective not consistency. The department faces the challenges of traditional practices as well as the sharing of toilets and inconsistency of funding to the programmes.

Therefore, he recommended that for proper sanitation and hygiene to be implemented effectively there is need for adequate and timely funding, engagement of a lot of partners like the church and intensifying on sensitization. He also recommended for a firm policy to achieve proper sanitation and hygiene conditions in the district. Further he recommended for enforcement from the local leadership.

5.6.2 World Vision WASHE Specialist

The role of World Vision Zambia (WVZ) is to facilitate government efforts in the implementation of sanitation and hygiene programmes. As an organization they have different funders within WVZ and the funding is sufficient and very effective as they manage to carry out activities. He explained that the implementation of water and sanitation have been alright except the hygiene activities are still lagging behind. He responded that the district faces a number of challenges in the implementation of sanitation and hygiene programmes namely, leadership crisis, attitudes of the local people, the local people need the government to be doing everything for them and lack of hand-washing facilities.

He recommended for a strategy to sensitize local traditional leaders who should eventually disseminate the information to the local people, involvement of all stakeholders and the training of local masons to help build toilets in the right areas.

5.6.3 Headman

An interview was held with the Headman from Siabaswi Village only because the Headman from the other village was unavailable at the time of the interview. The role of the Headman is to

call for meetings to sensitize the community and instill some form of punishment for those without toilets in the implementation of sanitation and hygiene programmes. He gave the following as the challenges he faces to implement sanitation and hygiene programmes; lack of knowledge by most local people, depending on the government for help every time, poor attendance of meetings by most local people and the leadership crisis in the study area. He recommended for strict rules and regulations for those failing to have toilets as well as commitment from all the local leadership.

5.6.4 School Head Teacher – Cisyabulungu Primary School

The school was found with a 4 x 2 block of toilets of which 2 were for girls and 2 for boys. World Vision Zambia (WVZ) constructed a 1 x 2 staff toilet. The school lobbied for funds from the School Club Zambia for the construction of a girl's changing room, a block of five toilets and a girls' bathing room. The administrator explained that the toilets at the school were cleaned by the pupils every day. However, the administrator explained that the school lacks hand-washing facilities. He also said that the school does not allow the sharing of toilets either among boys and girls or among female and male teachers. The school administration has not separated the use of toilets from those with HIV or the physically disabled and that all sanitation facilities were favorable for all. The school has a teacher responsible for sanitation and hygiene programmes whose responsibility is to sensitize the learners on the importance hygiene and sanitation during assemblies. The school is sometimes visited by the health department for further sensitization. Due to favourable and improved sanitation facilities, the school has no cases of learners missing class due to poor sanitation facilities.

5.6.5 Clinic In-charge – Kanchindu Health Centre

The clinic was found with a block of pit latrines, borehole and piped water. Through the environmental health department, the clinic offers assistance on health education, checking out on those with pit latrines and hand-washing facilities. The clinic is always supplied with water. The clinic works together with other governmental departments like the council who facilitates the D-WASHE and V-WASHE. The clinic offers outreach programmes where they sensitize the communities and the schools on sanitation and hygiene issues. The clinic receives cases of diarrhoeal diseases but it is difficult for them to conclude that those cases are caused by poor sanitation facilities.

CHAPTER SIX: DISCUSSION OF FINDINGS

6.1 Introduction

This chapter explains and interprets the findings of the study in details by relating the findings to the reviewed literature.

6.2 Accessibility to Sanitation Facilities

Accessibility to sanitation facilities in Sinazongwe district was one of the objectives for this study. This is because it is a requirement for an area to be certified Open Defecation Free (ODF) and also for a community to be declared clean and healthy.

6.2.1 Improved Sanitation

The results obtained showed that 23 percent of the households had improved sanitation facilities whereas 77 percent of the households had unimproved sanitation facilities. Only one household which was found with a flushing toilet which was connected to a septic tank. Such households are mainly comfortable with their facilities in that the chances of their facilities caving in were minimal and they are also less likely to contract diseases caused by flies like those facilities without a slab. The presence of a slab in a pit latrine is vital for easy cleaning. It is also observed that the households with pit latrines that have a slab have potential for sanitation sustainability because their facilities will be functional for a longer period and are less likely to breakdown, hence maintaining the good condition (Kayser *et al.,* 2015). It was also observed that the households with improved sanitation facilities are those in formal employment (2%) and have a source of income (33%). Furthermore, the access to sanitation was observed among households where a man was a head of household as they able to construct a toilet and had access to information on the importance of a clean environment due to their invitation to such meetings. Unfortunately, the improved sanitation facilities were rarely found in the study area as argued by the World Vision WASHE Specialist.

6.2.2 Unimproved Sanitation

Unfortunately, most households were found with unimproved sanitation facilities with the most common being pit latrines without a slab and those with no sanitation facility at all as 38 percent and 37 percent, respectively. It was also observed that one household in Siabaswi village was using a community latrine, thus, a facility that is put only for public use. This household was found near the market place where the community latrine was built for marketers by the council. It was therefore, understood that the absence of a slab is probably the main reason why most sanitation facilities were

caving in or filling up easily especially during rain. The respondents argued that the main reason why they were using pit latrines without slabs is because of lack of money to purchase the building materials like cement especially for the aged and the widowed. This is because most of them relied on support from their children who were working to earn a living. Only 40 (67%) of the respondents had access to income amounting to ZMW 1,000 or above every month, the remaining 20 (33%) respondents had monthly income of less than ZMW 1,000 which they could only use for their upkeep. During FGDs, men and women put the responsibility of putting up toilets for their families to men because most of them have a way of raising some income for their families.

The sharing of toilet facilities is not recommended for public health, every household is expected to have their own facility regardless of how close they are (Jayaram, 2011). This helps to prevent the transfer of pathogens which could allow the spread of diseases. It was found that shared toilets were common among polygamous households or large families. The main reason for sharing toilets as argued by most households was to share expenses in terms of building. However, in a polygamous household it is recommended that each wife should have her own toilet. Unfortunately, in the area of study it was found that they couldn't afford to have a toilet for each wife hence, only one toilet was found. The shared toilets were found to be the dirtiest because users took no responsibility to have them cleaned.

6.3 Sustainability of the Sanitation Facilities

6.3.1 Functionality

Approximately, 57 percent of households have functional sanitation facilities and 43 percent have no functional sanitation. The main reason why most households have no functional or unusable sanitation is because of caving in or filling up. The state of the sanitation facilities in the past for 23(38%) households have had no problems in terms of their functionality however, 36 households (60%) have been functioning only on rare occasions and a household (2%) did not know whether their sanitation facility was functioning well or had a problem. Despite some households (43%) using non-functional sanitation facilities, most households (54%) were not using non-functional sanitation facilities. The main cause of having non-functional sanitation facilities is the use of pit latrines without slabs which can easily cave in or fill up especially during rainy season. According to the study carried by World Vision in 2015 in different countries, it was observed that in Uganda and Ghana only 10% of the households had functional toilets and 25% in Ethiopia. The main reason

however, in these countries was due to filling up of the latrines (Kayser *et al.* 2015). Therefore, most respondents resorted to using non-functional sanitation due to lack of options let alone using the open bush.

Some respondents observed damages to their toilets. It is believed therefore that the damages to the toilets could have led to some respondents not to use the facilities thus calling them non-functional. It is therefore, for this reason that only 10(17%) households were found with damages to their toilets and 50(83%) showed no evidence of any damage. The common damage observed by most households had to do with cracks on the walls and the floor of the toilets.

Though 93 percent of the households showed evidence of having cleansing materials after using the toilets, many respondents still lacked adequate cleansing materials. Unlike using toilet paper or water to cleanse the anal area after defecating, most households are using sticks, branches, stones or maize shell. These materials are inappropriate for hygiene as well as cleanliness. Unfortunately, some households (7%) were found with no cleansing material.

6.3.2 Open Defecation

Kanyemba and Siabaswi villages are among the many villages in Zambia who are striving to obtain the status of Open Defecation Free (ODF) zone. Therefore, some households (50%) in the area are refraining from using the open bush as their toilet meanwhile, the others (50%) have continued using the open bush. Human faeces are not easily kept away from fields, wells and food as a result of open defecation. Bacteria and worms in faeces are often accidentally ingested. This results in a range of health problems from diarrhoea to enteropathy, a chronic sickness that prevents the absorption of calories and nutrients. The households are slowly avoiding using the bush through the construction of toilets though many still need financial assistance from the initiators of such programmes visa-via the government.

Kanyemba and Siabaswi villages are not yet declared ODF (Open Defecation Free). This is because the villages do not meet the requirements set by the Sanitation and Hygiene Master Plan for an area to be declared as. However, Macha Chiefdom among many other chiefdoms, having attained all the above conditions, it has been declared as an ODF. As earlier stated the practice of open defecation is observed as a behaviour habit which is possible but has not been easy to do away with. However,

with the improvement in sensitization as well as enforcement from the local leadership the practice is likely to reduce. It is for this reason that the Headman of Siabaswi village explained that they intend to deal with those without toilets by having them punished.

6.3.3 Toilet Cleaning

The respondents also showed evidence of toilet cleaning. At least 60 percent of the households have their toilets cleaned at least three times a week and 32 percent have never cleaned their toilets meanwhile 8 percent of the respondents do not know whether the toilet they use is cleaned or not. It was found that cleaning of the toilet was not necessary to others because of the condition of their toilets especially those with pit latrines without a slab. Those that could at least clean were asked whether they used any chemicals whenever they cleaned, most of them expressed ignorance but only agreed to the pouring of ash in the toilets once in a while. Unfortunately, those who used shared facilities were unable to attest to any cleaning and even the owners of those facilities gave an excuse of sharing the facilities to being the reason why they do not clean their toilets. Hence, most shared toilets are rarely cleaned and this causes the spread of diseases easily especially if no chemical or ash is used as the germs could not die. The usual cleaning of the toilets is essential for the prevention of diseases and flies (Mozaffar, 2014). It is for this reason that the advocators of adequate sanitation have always encouraged the communities to at least clean their toilets everyday using the cheapest cleaning agent – ash.

The World Toilet which falls on the 19th of November is a very important day especially to the households who are still defecating from the open bush. This special day is solicited by the District Council and the World Vision who later empowers the community champions who sensitizes the local people on the importance of this day. Despite this day being important, it is not celebrated by many people in the rural areas like those in Kanyemba and Siabaswi villages where only 1 (2%) respondent had participated during the celebrations of this day and 98 percent of the respondents had never participated during this day. The respondents however, showed awareness of the day only that they had never participated in it but that their children had actually taken part in this event as they were told at their respective schools. The only respondents who had agreed to the participation of this day explained what is taught during that day, namely, the importance of having a toilet and not to defecate from outside, washing of hands with soap or ash after using the toilet, cleaning of the toilet every day as well as the use of appropriate cleaning materials, among other things. This day is

very essential and needs to be celebrated by all this can only be possible if proper sensitization is made. This can be more effective with the help of traditional leaders who needs to encourage the communities to participate fully. The World Toilet Day participation is essential if open defecation is to be stopped.

6.4 Hygiene Practices

The study also took into consideration the households with improved hygienic practices. The following indicators were used to determine improved hygienic practices; presence of hand-washing facilities, access to water, hand-washing facilities supplied with soap or ash, hand-washing facilities with hand-drying materials, access to rubbish pit, access to a cloth line, access to elevated dish drying rack and the availability of a bathing shelter.

6.4.1 Hand-washing Facilities

The presence of hand-washing facilities on most households in the community was low as stipulated in the results where only 23 percent of the households had access to hand-washing facilities and the rest (77%) had no access to hand-washing facilities. The respondents were asked in depth why they don't find the provision of hand-washing to be important, most of them argued that they use alternatives like the bathing basins which are always near their toilets. In Iganga district, Uganda (Mukwaya and Kusiima, 1998) also found lack of hand washing facilities near pit latrines. Most women however, argued that they didn't find it necessary to have the hand-washing facilities near the toilets when they could wash their hands using any basin that was available in this case dish washing basins. Such arguments just show how the presence of hand-washing facilities is not regarded by many households hence recording poor performance in this area. The key informant from World Vision explained that, the absence of hand-washing facilities in the study area is the reason why the district is lagging behind in the area of hygiene.

6.4.2 Hand-washing Facilities Supplied with Water

Some households which were found with hand-washing facilities were monitored for the accessibility of water at all times, sometimes and never. This means that most households struggle to have their hand-washing facilities filled with water at times. The Coordinator from the Council as well the WASHE specialist from WV explained that the water in the hand-washing facilities is usually drunk up by domestic animals especially goats due to high temperatures in the valley. The respondents also argued that their animals destroy their facilities in the event of drinking water thus

leaving them with no facilities at all. Therefore, the households need to put their hand- washing devices on a higher surface which could be unreachable to the domestic animals, thus the tippy-tap is the most ideal device. Hand-washing facilities need to be supplied with clean water near the sanitation facilities so as to prevent the transfer of pathogens from the carrier (toilet user) to an object or another person.

6.4.3 Hand-washing Facilities supplied with Soap or Ash

The respondents were found with hand-washing facilities which were never supplied with soap or ash. Soap was found to be a limiting factor in all households hence, 15 percent of the households have their hand-washing facilities supplied with soap always, 8 percent have their facilities supplied with soap sometimes and 77 percent have never had their facilities supplied with soap or ash. During the study it was found that most households are not aware that when they don't have soap (which most of them claim is expensive and couldn't afford), they can actually use ash as a cleaning agent. Ash is easily accessible and affordable to all. Soap and ash are necessary to prevent diseases like cholera, dysentery and typhoid. Unfortunately, this fact is not well known to most households. However, most respondents are aware that ash is used to pour in their toilets to avoid flies and to prevent the filling up of the toilets.

6.4.4 Hand-drying Materials

The presence of hand-drying materials were uncommon among all respondents hence only 5 percent of the households had hand-drying materials alongside their hand-washing facilities, 3 percent had their hand-washing facilities supplied with hand-drying materials sometimes and 92 percent of the households had never had their hand-washing facilities supplied with any hand-drying materials. Hand-drying materials were found to be unnecessary and costly by most respondents. It was however found that most women in the community dried their hands with their waist cloth, also known as a *chitenge,* or their clothes whether they were cooking, eating or cleaning the nose of a young child. Men too dried their hands using their trousers or a handkerchief and children rarely dried their hands if they did they usually just wipe them on their clothes, shook them, or left them wet as they continued with their activities (Huang *et al*. 2012).

6.4.5 Hand-washing at Critical Times

The washing of hands at critical times was found to be compromised because no households was found to have managed to meet all the five criteria for hand-washing, that is after using the toilet,

after eating, before the preparation of food, after the cleaning or changing of the baby's nappy and before feeding the baby. Only a few households were found with all. However, many households recorded 100 percent for hand-washing after defecating, before food preparation and after eating and 50 percent were recorded after cleaning or changing a baby's nappy and before feeding a child. Therefore, most of the households that were found without hand-washing facilities risks contacting diseases (Jumaa, 2005). The diseases are likely to spread easily and fast especially if the washing of hands after handling food is not taken seriously.

The washing of hands at critical times was found to be a serious problem among households especially before food preparation and before feeding a child. This was evident during the female FGDs where women frankly said they found it unnecessary. One woman respondent was found preparing food and was asked whether she had washed her hands, she responded that, '*mwana aangu nsikwe a tombe pe kayi kwiina nendainkinde kucimbuzi,'* (my daughter, am not even dirty since I did not visit the toilet). At another households a young mother responded that, 'ino ndisambile nzi kumanza ciindi nceeyanda kulisya mwana?'(why should I wash my hands before feeding the baby?). This response showed how deep the lack of knowledge is.

6.4.6 Access to rubbish Pit

The common practice for household refuse disposal in rural areas is to dump solid wastes openly in backyard gardens or in an open space. Therefore, the lack of rubbish pits and the indiscriminate disposal of waste by the people of Kanyemba and Siabaswi villages is an environmental hazard and can threaten human health and safety. Solid waste that is improperly disposed of can result in a number of problems. It can create a breeding ground for pathogenic micro-organisms and vectors of disease, and cause a public nuisance due to unsightliness and bad smell.

6.4.7 Access to Clothes Drying Line, Elevated dish drying rack and Bathing shelter

It was found that only 8 percent of the households had never had a cloth line therefore they resorted to using the hedge or any other flat surface for dying their clothes. To avoid the growth and spread of bacteria and fungi on cloths hung on the hedge, households need to have cloth line. The lack of elevated dish racks causes the easy spread of diseases that are brought by domestic animals as they search for food and water that is, if they could have passed through a contaminated area. Personal hygiene was taken into consideration through the availability of a bathing shelter. Almost everyone (97%) was found with a bathing shelter. Most women of the study area during the FGD were able to

show that a bathing shelter is a requirement for them as a family for personal hygiene. Those without bathing shelters bathed at night when it was dark. Mostly bathing shelters were used as toilets especially for urinating purposes. The respondents used different shelters with the common ones being improvised with a plant commonly known as a '*citibbi*'. However, some respondents who had form of income had decent bathing shelters made of bricks with some privacy where a door was provided.

6.5 General Overview of Stakeholders Observations

The stakeholders namely the council, WV, school, clinic and traditional leaders of the area support each another in the implementation of sanitation and hygiene programmes in the area. While the council have the responsibility of coordinating water, sanitation and hygiene programmes, World Vision on the other hand supports the government efforts. The key informants were all able to argue that most sanitation facilities in the area were of low standards and that the hand-washing facilities were not available. The sharing of toilets was also found to be a common practice in the area. The stakeholders also argued that CLTS is an effective strategy of spearheading sanitation and hygiene programmes which can work effectively with the participation of traditional leaders. Unfortunately, the leader crisis was found to be the main reason why the area is still lagging behind in the implementation of sanitation and hygiene programmes. The inclusion of awareness of improved sanitation and hygiene facilities in schools has also been helpful to families. The outreach programmes extended by the clinic has also helped the respondents to have good and improved sanitatiom and hygiene facilities.

CHAPTER SEVEN: SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter summarizes and concludes the study with a set of recommendation given at the end.

7.2 Summary

This study evaluated the implementation of sanitation and hygiene programmes in Sinazongwe District. The research gap revealed in the review of literature that there has been more reliance on water programmes than on sanitation and hygiene in most rural areas, led this study to seek to identify households with sanitation facilities in Sinazongwe District. It also sought to assess the households with improved hygienic practices and also to evaluate the performance of sanitation and hygiene programmes in Sinazongwe District. To achieve these objectives, a sample of 60 households was purposively interviewed from two villages with regard to the available sanitation facilities. Views of different groups on the implementation of sanitation and hygiene programmes in the area were obtained from Focus Group Discussions (FGDs). Key informants were also purposively selected to give information on the implementation of hygiene and sanitation programmes in the district.

The study results showed that most households had different sanitation facilities of which most of them are unimproved (77%), that is, they consist of facilities which either lack a slab or a roof. However, those without toilets at their households either shared with their neighbours or used the open bush to answer the call of nature. Hence only 23 percent of respondents had improved sanitation facilities. The sustainability of the sanitation facilities was also questioned in terms of how functional the sanitation facilities were as well as their cleanliness. It was therefore observed that most of the facilities were functional (57%) without any challenges and 43 percent reported that their facilities were not functional. The reasons for non-functional sanitation was either filling up or caving in of the facilities. Similarly, the cleanliness of the sanitation facilities showed how people in that household could be willing to use the facilities. Fortunately, most respondents (60%) showed evidence of having cleaned their sanitation facilities at least three times a week. It is believed that a cleaned toilet attracts people to use it without any disgust. World Toilet Day is not well attended by the communities who claimed not to be aware (98%) of this special day, where the importance of owning a toilet and the problems of not owning one are discussed.

It was further observed that most households are still lagging behind in the area of hygiene practices especially with the presence of hand-washing facilities (23%) where only 15 percent of the households were found with hand-washing facilities supplied with soap. Some households were found with hand-washing facilities but they were not supplied with water, only 12 percent of the hand-washing facilities were supplied with water always and 72 percent had never had water in their hand-washing facilities. Similarly, hand-washing facilities were not supplied (77%) with soap or ash. Hand drying materials were also not found with the hand-washing facilities, only 5 percent of the households had their hand-drying materials. However, most respondents were found to have been washing hands at critical times such as after using the toilet, before and after eating and before preparing which was done by all respondents (100%). The only challenge had been on washing hands after changing the baby's nappies (57%) and before feeding the baby (50%). Access to rubbish pits was also limited, 30 percent of the households had access to rubbish pits always and 48 percent had never rubbish pits thereby contributing to land pollution when they dispose their garbage anywhere. The presence of a cloth drying line was common among all respondents (87%) only 8 percent had no cloth drying lines thus they used the flower hedges or a flat surface like a rock to dry their clothes. This is not healthy because bacteria may easily breed from such areas. The access to elevated dish drying rack was found to be low as well, only 32 percent of respondents had dish drying racks always, 7 percent had sometimes and 62% have never had dish drying racks. The problem associated with not having dish drying racks is the easy transportation of diseases from domestic animals that could have carried some pathogens from some human waste as they look for food or water among dishes. For personal hygiene, most households were found with bathing shelter (58%).

Nonetheless, the communities are making efforts to climb the sanitation ladder from having basic sanitation facilities to improved sanitation facilities. Finally, communities are not doing well with hygiene practices especially hand-wash with soap or ash at critical times. This therefore calls for more combined efforts among all stakeholders to ensure access to sanitation for all in Sinazongwe District.

7.3 Conclusion

Sanitation and hygiene are important aspects for clean, safe and healthy environment. It is therefore important for every household to have a toilet of their own. A toilet which has a roof, slab as we as

vent for the prevention of diseases. Thus, the use of toilets can prevent germs and protect the health of the community. The availability of improved and clean sanitation facility (toilet) helps communities to have privacy, safety, comfort, cleanliness and respect.

The access to sanitation facilities differs in most rural areas from flushed toilets to having no facility at all. Therefore, the type and quality of the sanitation facility is also dependent on the income a household realizes for the month.

Sustainability of the sanitation facility in the two villages was assessed by sanitation use, functionality, breakdown and condition. It was found that most households had sanitation facilities that are non-functional or usable. The breakdown of the sanitation facilities is mainly due to the filling up as well as the caving in of latrines especially during rainy season. Therefore, there is need for each household to have a toilet of their own so as to prevent the spread of diseases. The presence of a toilet at each household can also prevent the fast filling up of toilets because only a few people would be using it.

The condition of most sanitation facilities in the community was found in a poor condition where most of them were uncovered with lack of roofs. The presence of anal cleansing materials was also found with most households using past newspapers or papers from their children's book. Water and soap were found to be uncommon in most households though soap was found to be a limiting factor. The presence of drying materials was even more limited. Therefore, lack of money and access to enough water has often made it difficult for people to improve sanitation.

Overall, it is concluded that hygiene practices are some of the main problems in Sinazongwe District. Therefore, sensitization activities by stakeholders ought to focus on this challenge as far as hand-washing is concerned.

7.3 Recommendations

The implementation of sanitation and hygiene programmes in rural areas especially in Sinazongwe District needs to be successful and sustainable. Therefore, recommendations for effective and meaningful implementation of sanitation and hygiene programmes have been formulated and are listed below.

(i) All the stakeholders (civic leaders, technocrats, traditional leaders as well as the communities) should be involved in the implementation of sanitation and hygiene programmes. The civic leaders are expected to be the key focal persons.

(i) The government should devise firm and strict legislation and regulations for access to quality sanitation and hygiene services. The legislation should be in such a way that a punishment be given to those who do not comply. This could be more effective with the introduction of council or ward by-laws.

(ii) Women should be involved and participate in discussions of issues on sanitation and hygiene for possible solutions because they are the ones who often care for children and the home. As such they are able to recognize sanitation and hygiene issues.

(iii) The government through the Ministry of Local Government and Housing should lobby for funds from the NGOs and provide subsidies for the construction of toilets and free distribution of toilet kits to the villagers.

(iv) The media and public opinion around the world should be used to influence political leaders to act immediately on the provision of sanitation and hygiene facilities. This would help to encourage participation during World Toilet Day considering the poor turnout. Eventually this will promote awareness on the importance of a toilet among other things.

(v) Households need to construct improved sanitation facilities with a slab and those with vent pipes as this could be helpful for sanitation sustainability as well as making the facilities pleasant for use due to the reduced smells and flies.

REFERENCES

Banda, T. D. (2017), **Environmental and Water Engineer**. WARMA, Lusaka.

Brandberg, B. (1997), **Latrine building: a handbook for implementation of the SanPlat system.** London, UK, Intermediate Technology Publications, pp. Viii-1.

Budge, F. (2012), '*The Power of Shit: Reflections on Community Led Total Sanitation in Nepal*,' **Medische Antropologie**, 24 (2), 302-318. [Online]. Available from *http://www.sciencedirect.com.* Accessed on 3/02/15.

Cameron, L, Shah, M. and Olivia, S. (2013), '*Impact Evaluation of a Large-scale Rural Sanitation Project in Indonesia.'* Policy Research Working Papers; 6360 No.83; The World Bank, WSP.

Central Statistical Office (CSO) (2000), *Living Conditions Monitoring Survey Report.* Lusaka.

Central Statistical Office (CSO) (2011). *Census of population and Housing: Preliminary Population Figures.* Lusaka: Central statistical Office, February 2011.

Chambers, R. (2009), '*Going to scale with Community-Led Total Sanitation: Reflections on experience, issues and ways forward'***.** Practice Paper, 1. Brighton: Institute of Development Studies, University of Sussex.

Corcoran, E., Nellemann, C., Naker, E., Bos, R., Osborn, D., Savelli, H. (2010), *Sick Water. 'The Central role of waste water Management in Sustainable Development- A rapid response Assessment,'* in United Nations Environment Programme Report, UN-HABITAT and GRID-Arendal. Accessed from *http://www.grida.no.2010* on 03/05/17

Dahal, K.R, Adhikari, B and Tamang, J. (2014), '*Sanitation Coverage and Impact of Open Defecation Free (ODF) Zone with Special Reference to Nepal: a Review,'* **International**

Journal of Engineering Research and Applications, 4(8), 1-11. [Online]. Available from *www.ijera.com.* Accessed on 3/02/15.

Grojec, A. (2015), **Progress on Sanitation and Drinking Water- 2015 Update and MDG Assessment.** UNICEF and WHO, Geneve.

GRZ (2013), **The Environmental Management Act (EMA), No.12, 2011**. Government Printers, Lusaka.

Harvey, P.A and Adenya, E. A. (2009), '*An Assessment of Sanitation and Hygiene in Primary Schools in Zambia',* Paper for 34th WEDC International Conference, Addis Ababa, Ethiopia.

Huang, C, Ma,W and Stack, S. (2012), *The Hygienic Efficacy of Different Hand-Drying Methods: A Review of the Evidence,* **Mayo Clinic Proceeding 87 (8): 791-798.** Mayo Foundation for Medical Education and Research. Elsevier Inc.

Jayaram, K. S. (1987), "*Energy from Human Waste in India*." **Ambio** 16.4 (1987). [Online]. Available from *http://www.sciencedirect.com.* Accessed on1/12/14.

Jenkins, M and Sugden, S. (2006), '*Rethinking Sanitation Lessons and Innovation for Sustainability and Success in the New Millennium*,' UNDP sanitation thematic paper, London School of Hygiene and Tropical Medicine, January 2006.

Jewitt, S. (2013), '*Geographies of Shit: Spatial and temporal variations in attitudes towards human waste.'* **Progress in Human Geography 37 (2013).** [Online]. Available from *http://www.sciencedirect.com.* Accessed on 1/12/14.

Johnson, S., Walker, J. L., Sistrunk, W. W., Burks, K., Halford, L., Goddard, L., Austin, C. L and Finley, P. L. (2013), '*Evaluation of a New Hand Hygiene Monitoring Program; Feedback and Salient Observers Critical to Program Success',* **American Journal of Infection Control**, 41(6), 254-8. Elsevier Inc.

Jumaa, P.A. (2005), 'Hand hygiene: Simple and Complex,' **International Journal of Infectious Diseases,** Volume 9, Issue 1 pages 3-14 (Al Ain , UAE), Elsevier Ltd.

Kanno, H., Sakurai, T., Shinjo, H., Miyazaki, H., Ishimoto, Y., Saeki, T., Umetsu, C., Sokotela, S and Chiboola, M (2013), '*Indigenous Climate Information and Modern Meteorological Records in Sinazongwe District, Southern District Zambia,*' **Japan Agricultural Research Quarterly** 49(1), 59-71. [Online]. Available from http://www.jircas.affrc.go.jp. Accessed on 29/11/17.

Kanno, H., Sakurai, T., Shinjo, H., Miyazaki, H., Ishimoto, Y., Saeki, T., Umetsu, C (2015), '*Analysis of Meteorological Measurements made over Three Rainy Seasons and Rainfall Simulations in Sinazongwe District Southern Province, Zambia,'* **Japan Agricultural Research Quarterly** 47 (2), 191 -201. [Online]. http://www.jircas.affrc.go.jp. Accessed on 29/11/17.

Kanyamuna, B.M. (2010), '*The Impact of Implementing the D-WASHE Programmes in Chanyanya Community-Kafue District, Zambia: What Role Has the National Water Policy (1994) Played?'* Masters Thesis Submitted to the University of Zambia. [Online]. Available from *http://www.unzalibrary.zm.* Accessed on 3/02/15.

Kapambwe, S. (2014), 'Maamba Trains New Breed of Engineers,' **Times of Zambia,** 24 September, P.1. [Online]. Accessed on 29/11/17.

Kayser, G. L., Guo, A. Z., Morgan, C., Oliver, J., Chan, R. and Bowling, M. (2015), **The World Vision Baseline Evaluation of Water, Sanitation and Hygiene Programs.** The Water Institute at UNC, Chapel Hill, NC, USA.

Kombo, D. K. and Tromp, D. L.A. (2014), **Proposal and Thesis Writing**: An Introduction. Paulines Publications Africa, Nairobi.

Kothari, G.R and Gaurav, G. (2014), **Research Methodology: Methods and Techniques**. 3rd Edition. New Delhi: New Age International Ltd.

Kumar, S., Kumar, N. and Vivekadhish, S. (2016), 'MDGs to SDGs: Addressing Unfinished Agenda and Strengthening Sustainable Development and Partnership,' **Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive and Social Medicine,** 41(1), 1-4**.** Wolters Kluwer – Medknow Publications.

Ministry of Local Government and Housing (MLGH) (2007), '*National Rural Water Supply and Sanitation Programme (2006-2015).*' Lusaka, Zambia.

Ministry of Local Government and Housing (MLGH) (2009), '*Sanitation and Hygiene Component of the National Rural Water Supply and Sanitation Programme (2006-2015).*' Lusaka, Zambia.

Ministry of Local Government and Housing (MLGH) (2014), '*National Water and Sanitation Council Report on Water and Sanitation Investment.'* Lusaka, Zambia.

Mozaffar, P. (2014), *'Open Defecation and the Human Waste Crisis in India*.' Master's Thesis Submitted to University of Kansaa. [Online]. Accessed on 3/02/15.

Msabila, D.T and Nalaila, S.G. (2013), **Research Proposal and Dissertation Writing: Principles and Practices.** Nyambari Nyangwine Group of Companies Ltd, Dar es Salaam.

Mukwaya, R and Kusiima, B.A (1998), **Community use of Pit Latrines in Mubende District.** Study Report, Uganda National Health Research Organization and UNICEF. [Online]. Available on http://chdc.mak.ac.ug. Accessed on 03/05/17.

Nimoh, F., Poku, K., Ohene-Yankyera, K., Konradsen, F., and Abaidoo, R. C. (2014), '*Households'Latrine Preference and Financing Mechanisms in Peri-Urban Ghana,*' **Journal of Economics and Sustainable Development**, 5 (16), 63-73. [Online]. Availabe from *http://www.iiste.org.* Accessed on 3/02/15.

Osborn, D., Cutter, A and Ullah, F. (2015), **Universal Sustainable Goals: Understanding the transformation challenge for Developed Countries. Stakeholder forum.** [Online]. Available from *http://www.stakeholderforum.org*. Accessed on 5/12/16.

Person, B., Schilling, K., Owuor, M., Ogange, L., and Quick, R. (2013), 'A Qualitative Evaluation of Hand Drying Practices among Kenyans, **PLos ONE 8(9): e74370.doi: 10. 1371/Journal.pone.0074370**, Vineet Gupta, University of Pittsburg Medical Center, USA.

Ramaraju, V.A. (2013), *'Impact of Total Sanitation Campaign on Rural Households in Andhra Pradesh- A Case Study of Vasadi Village in Vizianagaram District (Open Defecation Focus Oriented Study),'* Doctor of Philosophy in Economics Submitted to Andhra University.

Routray, P., Schmidt, W., Boisson, S., Clasen, T and Jenkins, M.W (2015), **Socio-cultural and behavioural factors constraining latrine adoption in rural coastal Odisha: An explanatory qualitative study.** [Online]. Available from *http://creativecommons.org/licenses/by/4.0/*. Accessed on 5/12/16

Sah, M. (2013), *Sustainability challenges of open defecation free zone in Nepal.* A thesis submitted to Pokhara University, Nepal. [Online]. Accessed on 3/02/15.

Sanitation and Hygiene Master Plan (SHMP) (2011), Government of Nepal.

UN-Habitat, (2003b), *An exhibition on women and sanitation; Voices II,* **Water Sanitation and Infrastructure Branch**, Nairobi, Kenya. [Online]. Available from *http://www.sciencedirect.com.* Accessed on 3/02/15.

United Nations Children's Fund and World Health Organization (UNICEF/WHO) (2012), **Joint Monitoring Programme (JMP) for Water Supply and Sanitation: 2012 Update.** UNICEF and WHO Report, New York.

United Nations Children's Fund and World Health Organization (UNICEF/WHO) (2009), '*Diarrhoea: Why Children are still dying and what can be done?* UNICEF and WHO Report, New York.

Water Aid (2007), **The state of the world's toilets, 2007 report 2**. London, UK. [Online]. Available from *http://www.sciencedirect.com*. Accessed on 1/12/14.

Water and Sanitation Program (2012), **Economic Impacts of Poor Sanitation in Africa.** [Online]. Available from *http://www.wsp.org.co*. Accessed on 17/03/15.

Water and Sanitation Programme (WSP) (2003), **Financing Small Water Supply and Sanitation Service Providers: exploring the microfinance option in Sub-Saharan Africa**. by Meera Mehta and Kameel Virjee, WSP.

World Health Organisation (2003), **WHO Looking back: Looking ahead; Five decades of challenges and achievements in environmental sanitation and health.** World Health Organisation, Geneva.

APPENDICES

APPENDIX I: SEMI-STRUCTURED INTERVIEW SCHEDULE FOR THE COMMUNITY

PART A (PERSONAL INFORMATION)

1. What is your gender? a. Female ( ) b. Male ( )
2. What is your age range? ----------years old.
a. 10-25 ( ) b. 26-35 ( ) c. 36-50 ( ) d. 51-65 ( ) e. 66 and above
3. What is your marital status?
a. Single ( ) b. Married ( ) c. Divorced ( ) d. Widowed ( )
4. What type of employment are you in?
a. Formal ( ) b. Informal ( ) c. Unemployed ( )
5. How many children do you keep? I have --------girls and ------boys
6. State your average range of monthly income.
a. K0-K1000 ( ) b. above K1000 ( )

PART B: ACCESS TO SANITATION

1. What sanitation facilities does your household have access to?

1. Flush toilet to piped sewer system
2. Flushed toilet to septic tank
3. Flushed toilet to pit latrine
4. Flushed toilet to elsewhere (e.g. river, surface, etc.)
5. Ventilated improved pit latrine (VIP)
6. Pit latrine with slab
7. Pit latrine without slab
8. Composting toilet
9. Bucket
10. Hanging toilet
11. Community latrines
12. No facilities
13. Open defecation
14. Other: _____

2 Is your sanitation facility on-plot (close to household)?

1. yes
2. no
3. don't' know

2(a) Is your facility shared with other families who are not relatives?

1. yes
2. no

3. don’t know

2(b). How many households (including your own) use your facility? _____

2(c). Is your sanitation facility for your household functional?

1. yes
2. no
3. don’t know

3. Has your sanitation facility been non-functional or unusable at any time in the past year?

1. yes
2. no
3. don’t know

4. Why is/was the facility not working?

1. Filled up
2. Caved in
3. Dirty
4. Other: _____

5. Is your household using the same sanitation facility?

1. yes
2. no
3. don’t know

6. Is there evidence of cracking or damage to the toilet pedestal or squat-slab?

1. yes
2. no
3. don’t know

7. Are appropriate anal cleansing materials present?

1. yes
2. no
3. don’t ‘know

8. Is someone in charge of cleaning the facility?

1. yes
2. no
3. don’t know

9. How often is the facility cleaned?.....

10. Who is in charge of maintaining and repairing this facility if the pit fills up or the facility breaks?

1. household head
2. spouse
3. child
4. other relatives

11. Do people pay to use this facility? (Applies to shared facilities)

1. yes

2. no
3. don't know

12. Have you or any member of your household seen a person openly defecate in the past two-weeks?

1. yes
2. no
3. don't know

13. Do you participate during World Toilet Day?

1. yes
2. no

14. If the answer to the question above is yes, what activities do you see during the celebrations?

.....

PART 3: HYGIENE KNOWLEDGE AND PRACTICES

1. Does your household have hand-washing facilities?

1. Yes
2. No

2. Does the hand-washing facility have access to enough water always, sometimes, or never?

1. always
2. sometimes
3. never

3. Is the hand-washing facility supplied with soap or ash always, sometimes, or never?

1. always
2. sometimes
3. never

4. Does the hand-washing facility include resources for hygienic hand drying always, sometimes, or never?

1. always
2. sometimes
3. never

5. Does the household have access to a rubbish pit for trash disposal always, sometimes, or never?

1. always
2. sometimes
3. never

6. Does the household have access to a clothesline always, sometimes, or never?

1. always
2. sometimes

3. never

7. Does the household have access to an elevated dish drying rack?

1. always
2. sometimes
3. never

8. When do you wash your hands?

1. After defecation
2. After cleaning or changing a baby
3. Before food preparation
4. Before eating
5. Before feeding a child

9. How do you wash your hands?

1. Use of water
2. Use of soap or ash
3. Make contact between both hands
4. Use of a rubbing motion
5. Hygienic hand drying

APPENDIX II: INTERVIEW GUIDE FOR THE SCHOOL ADMINISTRATOR/S

Name of the School_____

Number of Staff members_____ No. of Pupils_____

I would like to have the background information on sanitation and hygiene for your school.

1. Do you as a school participate in any of the Water and Sanitation Programmes in your area?
2. What kind of sanitation facilities do you use in your school?
3. How is the Sanitation situation like in your school?
4. How many toilets does your school have?
5. Who does the cleaning of the toilets, if any, in your school?
6. Do you use the same toilets with your pupils?
7. Do you have a hand washing facility in your school and if any do you use soap?
8. Do the girls and boys use the same toilets?
9. Do you have separate toilets for pupils who are HIV positive, physically disabled or any other disorder? Please specify.
10. Is there any Sanitation and Hygiene Programme in your school?
11. What activities are carried out in your Sanitation and Hygiene Programme?
12. If WASHE program is there, who initiated it?
13. Have you ever had cases of pupils missing school due to poor sanitation facilities and disease related?

THANK YOU FOR YOUR PARTICIPATION. YOUR RESPONSE WILL BE STRICTLY CONFIDENTIAL

APPENDIX III: INTERVIEW GUIDE FOR KANCHINDU CLINIC

Name of Staff_____

Position_____

I would like to have the background information on sanitation of Kanchindu Clinic.

1. What kind of assistance do you offer to the community?
2. Is the amount of water supplied enough to cater for your usage at your clinic?
3. Are you aware of the D-WASHE and V-WASHE committees in your area?
4. What do the two committees mentioned above do in your catchment if at all they exist?
5. Do the WASHE committee members help you in any way in terms of Water Supply and Sanitation? How?
6. What kind of Sanitation facilities do you have at your clinic?
7. Do you have the same Sanitation facilities with your patients?
8. Who helped you construct the Sanitation facilities that are in your premises?
9. Who repairs the toilets when they break down?
10. How do you conduct your sensitization campaigns on Health and Hygiene in your catchment?
11. Is there any NGO that help you in Water and Sanitation problems? Yes ( ) No ( ) Name them. _____
12. How frequent are the cases of diarrheal diseases at your clinic?

    _____
13. How do you explain the occurrence of the diarrheal diseases at you clinic?

    _____
14. What do you think is the main cause of the diarrheal diseases based on your assessment?

    _____

THANK YOU FOR YOUR PARTICIPATION. YOUR RESPONSE WILL BE STRICTLY CONFIDENTIAL

APPENDIX IV: FOCUS GROUP DISCUSSIONS INTERVIEW GUIDE

(A) Focus group discussion with both males and females

(a) What do you understand about sanitation and hygiene programmes?

(b) Who is responsible for your sanitation and hygiene programmes in your community?

(c) Do you know the importance of safe and proper sanitation environment?

(d) How many of you have a (i) toilet (ii) bathing shelter (iii) dish rack (iv) drying line at your households?

(B) Focus group discussions with females only

(a) What is your role in your household as far as sanitation and hygiene programmes are concerned?

(b) Do you attend any meetings in your communities concerning the issues of sanitation and hygiene?

(c) What do you learn from those gathering?

(d) Who is responsible in your household to provide sanitation facilities?

(e) How often do you visit the clinic due to diarrheal cases that may occur in your household?

(f) How do you handle your personal hygiene?

(g) What do you do to maintain a clean environment in your household?

(h) What are some of the challenges you face in the implementation of the sanitation and hygiene programmes?

(C) Focus group discussions with males only

(a) What is your role in your household as far as sanitation and hygiene programmes are concerned?

(b) How do your protect your households from dangerous snakes in the night when they visit the bush to answer the call of nature due to lack of toilets?

(c) Do you attend any meetings in your communities concerning the issues of sanitation and hygiene?

(d) What do you learn from those meeting?

(e) How do you share the information you receive with your household?

(f) What are some of the challenges you face in the implementation of the sanitation and hygiene programmes?

APPENDIX V: INTERVIEW WITH KEY INFORMANTS

1. What is your role in the implementation of sanitation and hygiene programmes in this district?
2. Who funds these programmes? How effective is the funding for such programmes?
3. How effective has been the implementation of the sanitation and hygiene programmes in this district?
4. What are some of the challenges you are facing as actors in the implementation of sanitation and hygiene programmes?
5. What are your recommendations for proper sanitation and hygiene facilities?
6. What measures do you recommended to achieve proper sanitation and hygiene conditions in the area under study?