EVALUATION OF THE IMPLEMENTATION OF THE SCHOOL *WASH* PROGRAMME IN CHOMA DISTRICT OF ZAMBIA

By

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A Thesis Submitted to the University of Zambia in Fulfilment of the Requirements for the Degree of Master of Science in Integrated Water Resources Management.

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DECLARATION

I, Fred Chikwanu, do declare that this thesis 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 thesis has been duly acknowledged.

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APPROVAL

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ABSTRACT

The provision of Water, Sanitation and Hygiene (WASH) programme in schools has been a major concern in Choma District and has received significant attention in terms of policy consideration and dissemination with the aim of improving health in the learning environment. The implementation of the programme has not matched the concerns, which have affected programme effectiveness and consumer satisfaction. This study evaluated the implementation of WASH in schools of Choma District of Southern Province of Zambia in 2013. The study objectives were to assess the role of the Zambian government and guidelines for implementation of the School WASH programme. It also determined benefits schools received from government's support and evaluated the performance of the School Health and Nutrition (SHN) policy in the implementation process. A stratified random sample of 65 schools which comprised Secondary, Basic (Primary) and Community schools was used for data collection. Implementation of the programme was assessed by questionnaire based interviews and observations. Purposive selection of key informants as respondents for the interviews was also used. Views of the different groups on the implementation of WASH in schools were obtained by group discussion with pupils, female and male teachers.

Results obtained indicated that funding was limited especially among rural schools. Despite being fully known at the district level, the programme was not yet introduced in most schools and the government ran a parallel programme the School Health and Nutrition (SHN), which did not fully integrate WASH activities. It is in this context that the research found that there were no clear guidelines on the implementation of WASH in schools and the programme was largely an Non-Governmental Organisation (NGO) or cooperating partners' supported-activity. This conflicted with the role of government as an implementer. Additionally, implementation of the programme was poor due to uncoordinated roles and limited funding, yielding more challenges that led to the failure for the programme to realise desired benefits. Similarly, the SHN policy was poorly implemented in schools in regard to the set objectives.

It is concluded that, implementation of WASH in schools of Choma District was limited because the Ministry of Education, Science and Vocational Training and Early Education had good plans only on paper on how to effectively implement programme in Choma and Zambia in general. The plans were not translated into the implementation of the programme as there was no tangible evidence of the existence of the programme in schools. It was therefore recommended that a School WASH policy needed to be formulated so as to guide the implementation of the programme. Similarly, more funds ought to be committed towards the programme by the government. The Ministry of Education, Science and Vocational Training and Early Education's infrastructure plan should be revisited to include issues of water, sanitation and hygiene during construction of schools and classrooms should have adequate WASH facilities in line pupils' enrolments.

I dedicate this thesis to my daughter Sephine Chipo Chikwanu

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LIST OF ACRONYMS AND ABBREVIATIONS

CBD	Central Business District
CBO	Community Based Organisation
CDHMB	Choma District Health Management Board
CSO	Central Statistics Office
DANIDA	Danish International Development Agency
DEBS	District Education Board Secretary
DESO	District Education Standards Office
DFID	Development Financing International Fund
D-WASHE	District Water Sanitation and Hygiene Education
EHT	Environmental Health Technologist
FAO	Food Agriculture Organisation
FGD	Focus Group Discussion
FNDP	Fifth National Development Plan
GRZ	Government of the Republic of Zambia
HIV-AIDS	Human Immunodeficiency Virus - Acquired Immunodeficiency Syndrome
IRI	Interactive Radio Programme
IWRM	Integrated Water Resources Management
MCDSS	Ministry of Community Development and Social Services
MDG	Millennium Development Goal
MESVTEE	Ministry of Education, Science and Vocational Training and Early Education
MMEWD	Ministry of Mines Energy and Water Development
MLGH	Ministry of Local Government and Housing
MOH	Ministry of Health
MPU	Micro Projects Units
NGO	Non Governmental Organisation
NIF	National Implementation Framework
NRWSSP	National Rural Water Supply and Sanitation Programme
NUWSSP	National Urban Water Supply and Sanitation Programme

NWASCO	National Water and Sanitation Council
NWP	National Water Policy
PMS	Preventive Maintenance System
PTA	Parents Teachers Association
RHC	Rural Health Centre
RWSSP	Rural Water Supply and Sanitation Programme
SHN	School Health and Nutrition
SNDP	Sixth National Development Programme
SPSS	Statistical Package for Social Sciences
SWASCO	Southern Water and Sanitation Council
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFAO	United Nation and Food Agriculture Organisation
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Aid for International Development
VIP	Ventilated Improved Pit latrine
V-WASHE	Village Water Sanitation and Hygiene Education
WASH	Water Sanitation and Hygiene
WHO	World Health Organisation
WV	World Vision
ZAMSIF	Zambia Social Investment Fund
ZESCO	Zambia Electricity Supply Company

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

In the establishment of a school and any school environment, children have the right to basic facilities such as school toilets, safe drinking water, clean surroundings and basic information on hygiene. In this regard, United Nations International Children's Emergency Fund (UNICEF) (2006) is of the view that schools play an important role in bringing about behavioural change and promoting better health into communities. Therefore, it can be argued that improved hygiene practices are essential if transmission routes of water and sanitation related diseases are to be avoided. Diseases such as diarrhoea, dysentery, cholera, parasitic worm infections, skin diseases and others, need to be tackled by making improvements to water and sanitation facilities (Emory University Center for Global Safe Water, 2009).

According to UNICEF (2011), an ideal learning environment should have adequate WASH facilities with functional and reliable water system sufficient for all the school's needs, more especially for hand washing and water for drinking. It should also have a sufficient number of toilet facilities for students and teachers that are private, safe and clean and gender segregated. As such, WASH programme is widely recognized for its significant role in achieving the Millennium Development Goals (MDGs) particularly those related to universal access to primary education, reducing child mortality, improving water and sanitation, and promoting gender equality (Freeman, 2012). According to UNICEF (2011), about 2.6 billion people worldwide, especially in Africa and Asia, lack access to proper basic sanitation. This calls for urgent action as poor sanitation does not only put people in poor environments but also increases the risk of infections. Additionally, poor School WASH is among the factors contributing to low school attendance of school aged children especially adolescent girls in schools.

According to (CSO, 2010) Zambia's population has always been growing with an average annual growth rate of between 2000 and 2010 being 2.8%. UNICEF (2011) argues that in over 1,300 Zambian schools, about one million pupils use water from contaminated sources or walk long distances to fetch clean water from safe sources as water facilities either do not function, have poor yields or are not there. Having this background, it is imperative that factors affecting the implementation of School WASH both at the Ministry of Education, Science and Vocational Training and Early Education in Choma district and schools were evaluated to ascertain the progress of the programme.

Therefore, this study endeavored to provide the background information for the implementation of the School WASH programme. It also seeks to help the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE) in realizing how much is needed for the successful implementation of the programme. Thus insights for the need of successful implementation of the programme were provided.

1.2 Statement of the Problem

School WASH and the associated interventions in Zambia are inadequate (UNICEF, 2009). The recently accelerated enrolment has not been matched by a corresponding acceleration of water, sanitation and hygiene in schools. As such, the development of school buildings has focused on classrooms and has not adequately considered issues of water supply, sanitation and hygiene facilities in schools (GRZ, 2009). For instance, UNICEF (2009) is of the view that toilets to pupils' ratio are lower than the national standards and most of the existing facilities in schools have deteriorated without clear and meaningful repair and maintenance. Equally, sanitation coverage is still low with many children lacking proper toilet facilities hence the sewage is untreated and contaminates the environment. The results are a constant threat to the health of the entire school population (Mbilima, 2008). Moreover, the responsibility for school WASH in

Zambia is fragmented with a lot of organizations and government organs having a part to play in the implementation process without clear roles (NWASCO, 2012). According to UNICEF (2006), the major consequences of the deficient school WASH in the Zambian schools are factors contributing to the increased poor health, rate of dropouts and absenteeism, especially for girls. Similarly, the prevalence of WASH related diseases among school children are common hence learning outcomes are becoming poorer as they reduce teacher – pupil contact time because children stay away from school when they are sick. Above all, the existing policy guidelines are old and not very clear on the implementation of WASH in schools. The study therefore sought to evaluate the implementation of WASH programme among schools of Choma district in 2013 as it is a key element in ensuring a positive learning environment.

1.3 Purpose of the Study

The purpose of this study, therefore, was to evaluate the implementation of water, sanitation and hygiene (WASH) programme in the selected schools in Choma district of Southern province of Zambia in order to come up with an effective implementation strategy.

1.4 Objectives of the Study

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

1.4.1 Overall Objective

The overall objective of the study was to evaluate implementation of the WASH programme in schools of Choma district of Zambia in 2013.

1.4.2 Specific Objectives

In order to achieve the overall objective of the study, the following specific objectives were considered;

i. To assess the role of the Zambia government in implementation of WASH in schools.

ii. To assess guidelines for the implementation of WASH in schools.
iii. To determine how schools benefited from government's support.
iv. To evaluate the performance of SHN policy versus WASH in schools.

1.5 Research Questions

In order to achieve the objectives, this study was guided by research questions divided into the overall and specific questions.

1.5.1 Overall Research Question

What is the major factor in the implementation of WASH programme in Schools?

1.5.2 Specific Questions

In order to achieve the overall research question of the study, the following specific questions were considered;

i. What is the role of the government in the implementation of WASH in schools?
ii. What are the guidelines for the implementation of WASH programme in schools?
iii. How have schools benefited from government's support?
iv. What is the performance of the SHN policy in the implementation of the School WASH programme?

1.6 Significance of the study

Past researches have clearly demonstrated that effective and efficient implementation of social programmes can be achieved when the government and partnering institutions are involved and have clear roles in the implementation process. Striking a balance on the roles and responsibilities of various institutions and departments could contribute to making WASH programme in schools a success. It is with this view that the results obtained from this study may be very useful in providing information as there is relatively little empirical research on the implementation of the WASH programme. Guidelines on the implementation

of the programme are also critically important in schools. Although existing policy statements focus on School Health and Nutrition (SHN), it is ineffective as it isolates issues to do with water supply and has very little bearing on sanitation. In this view, results obtained from this study could assist in providing information for the successful implementation of the programme. It may also be used as basis for the government to review its regulatory instruments as well as school sensitization strategies. It may also provide information on guidelines for decision makers, education providers and public health officers as they plan, implement and champion their advocacy on water, sanitation and hygiene in schools of Choma district. Finally, the study may be a basis for future researches aimed at improving and enhancing School WASH programme as it has added more data to the existing body of knowledge.

1.7 Scope of the Study

Choma District has 201 schools and the study used a sample of 65 schools. The schools covered included secondary (day and boarding), basic or primary (rural and urban), private and community schools in the district. This also included both single and Co-Education schools. With the need to evaluate the implementation of water, sanitation and hygiene in schools, the study focused on water sources, water availability, toilets or latrines, hygiene sensitization, waste management and hygiene advocacy in the selected schools. WASH therefore has three elements, the first being water facilities. This stresses the types of water sources, availability and the sources of support for their construction. Sanitation is another area of interest in this study, it focuses on the types of sanitary facilities, their state, availability and the source of support for their construction. The third category addresses the hygiene aspect. This is limited to school advocacy for better hygiene practices and management of waste generated in schools by pupils. Interest is further extended to the role of the government (line ministries) including MESVTEE and MLGH in the implementation of school based WASH and organizations like World Vision (WV) and the guidelines that existed.

1.8 Organisation of the Thesis

The thesis is organised into seven chapters. Chapter One presents the Introduction for the study. Chapter Two presents Literature review, while Chapter Three describes the Study Area. In Chapter Four, the methodological approaches are discussed. Presentation of the Research findings is given in Chapter Five while discussion and interpretation of findings is in Chapter Six. Finally, summary, conclusions and recommendations are provided in Chapter Seven.

CHAPTER TWO: LITERATURE REVIEW

2.1 School WASH

Water, Sanitation and Hygiene (WASH) in Schools refers to a combination of technical (hardware) and human development (software) components that are necessary to produce a healthy school environment and to develop or support appropriate health and hygiene behaviours (Mooijman *et al*, 2010). The technical components include drinking water, handwashing and toilet facilities in and around the school. The human development components are activities that promote conditions within the school and practices of children that help to prevent water and sanitation related diseases and worm infestation (GRZ, 2009). GRZ (2009) further argues that School sanitation and hygiene education depend on a process of capacity enhancement of teachers, education administrators, community members, village or ward water and sanitation committees, public health, Non-Governmental Organisations (NGOs) and Community Based Organisations (CBOs). It seeks to use water, sanitation and hygiene as a bridge linking children, their families and communities.

Mooijman *et al* (2010) stresses that WASH in Schools aims to make a visible impact on the health and hygiene of children through improvement in their health and hygiene practices, and those of their families and the communities. It also aims to improve the curriculum and teaching methods while promoting hygiene practices and community ownership of water and sanitation facilities within schools. Mooijman *et al*, further believes that WASH in Schools is based on the belief that children are far more receptive to new ideas because they are at an age when they can be influenced to cultivate the habits of good personal hygiene. The promotion of personal hygiene and environmental sanitation within schools can help children to adopt good habits during the formative years of their childhood.

In 2003 the United Nations declared the decade from 2005–2015 the 'Water for Life' International Decade for Action, primarily to promote efforts to fulfill international commitments to meeting the Millennium Development Goal target

for water and sanitation. This emphasizes to halve the proportion of people without sustainable access to safe drinking water and basic sanitation by 2015 (AusAID, 2012). As of 2010, around 800 million people did not have access to clean water and 2.5 billion did not have access to adequate sanitation and hygiene in the world (UNICEF, 2012). Diseases such as diarrhoea, cholera, typhoid, hepatitis, and dysentery which are spread as a result of contaminated water are still widespread, and more than 1.5 million children around the world die each year as a result of diarrhea (Nagpal, 2010).

According to World Vision (2009), WASH programme approaches the world's challenges for safe water, improved sanitation, and good hygiene in an integrated manner to optimize the positive health and economic impacts. "Safe" water must address water quality to prevent water related diseases and also be close enough to the user's residence to encourage use of the water source. Sanitation involves both physical infrastructure, such as latrines, and the use and maintenance of the sanitation facilities. Therefore, good hygiene is the practice of cleanliness, such as hand washing, to prevent diseases.

According to AusAID (2012), WASH in Schools campaign in the world was formally launched in 2010. This initiative involving UNICEF and its partners call on governments to increase investments and on practitioners and other concerned stakeholders to improve collaboration on programming effectiveness. The ultimate goal is to expand WASH programme in Schools with the view to improve health, foster learning and enable children to participate as agents of change within their homes and communities. The programme is structured around six action points designed to strategically focus efforts and resources into key areas (UNICEF, 2010). These include increased investment; policy engagement, stakeholder involvement, and demonstration of quality WASH in school projects, monitoring and contribution of evidence.

It is widely argued that investment towards school WASH programme has been increasing. However, if investment is growing globally, there is still a long way to

go. Despite that the proportion of schools that have water and sanitation facilities for boys and girls is increasing, it is not at a satisfactory rate. In UNICEF priority countries (Zambia included) which are generally poorer countries with higher child mortality rates and weaker WASH and education progress rates, the record is poorer in that in 2008 it was 46%, in 2009 (47%) and in 2010 it was 51%, (UNICEF, 2010). This slow progress, challenges and limited information on WASH in Schools raise questions on the programme implementation process. It is in this context that implementation process of the programme needs to be understood.

2.2 Importance of the School WASH programme

It is widely acknowledged that safe and adequate WASH in schools is important. Diseases related to unsafe and inadequate WASH are a burden in developing countries. It is estimated that 88% of diarrhoeal diseases are caused by unsafe water supply, and inadequate sanitation and hygiene (WHO, 2004). Many schools serve communities that have a high prevalence of diseases related to inadequate water supply, sanitation and hygiene (particularly lack of hand washing). If everyone in the world had access to a regulated piped water supply and sewage connection in their houses, 1.9 million days of school attendance would be gained due to less diarrheal illness (UNICEF, 2012). Schools, particularly those in rural areas, often completely lack drinking-water and sanitation facilities, or have facilities that are inadequate in both quality and quantity. Schools with poor WASH conditions and intense levels of person-to-person contact are high-risk environments for children and staff since they spend most of their day time in schools and exacerbate children and teachers' particular susceptibility to environmental health hazards.

Mooijman *et al* (2010) believes that children's ability to learn may be affected in several ways. Firstly, helminth infections, which affect hundreds of millions of school-age children in the world, can impair children's physical development and reduce their cognitive development, through pain and discomfort, competition for

nutrients, anaemia, and damage to tissues and organs. Long-term exposure to chemical contaminants in water (e.g. lead) may impair learning ability. Diarrhoeal diseases, malaria and other infections force many school children out of school with the need to seek medical treatment at home. Poor environmental conditions in the classroom can also make both teaching and learning very difficult. The effects of diseases in teachers include impairing performance and increasing absenteeism. This also has a direct impact on learning, and teachers' work is made harder by the learning difficulties faced by school children (AusAID, 2012). Improving WASH facilities in schools would facilitate efficiency among pupils and teachers in their work and teaching respectively.

In addition AusAID (2012) affirms that girls and boys, including those with disabilities, are likely to be affected in different ways by inadequate WASH conditions in schools, and this may contribute to unequal learning opportunities. For example, lack of adequate, separate private and secure toilets and washing facilities may discourage parents from sending girls to school. Equally, lack of adequate facilities for menstrual hygiene contributes to girls missing days at school; eventually lead girls to drop out of education when they reach puberty stage. According to UNICEF (2009), children who have adequate WASH conditions at school are more able to integrate hygiene education into their daily lives, and can be effective messengers and agents for change in their families and the wider community. Whereas, communities in which school children are exposed to diseases risk being infected because of inadequate WASH facilities at school. Families ultimately bear the burden of their children's illness due to bad conditions at school.

2.3 Global commitments

Globally, there have been strides that have focused on school WASH activities. Mooijman *et al* (2010) affirms that statements validating WASH in schools appear in the commitments of governments and international agencies and are reflected in international charters. These include;

i. Convention on the Rights of the Child (1990)
ii. Millennium Development Goals (2000)
iii. Dakar Framework for Action – Education For All: Meeting Our Collective Commitments (2000)
iv. Economic and Social Council (ECOSOC) Programme of Action for the Least Developed Countries (2001-2010)
v. Johannesburg Plan of Implementation (2002)
vi. International Decade on 'Water For Life', 2005-2015
vii. United Nations Decade of Education for Sustainable Development (2005-2014)
viii. International Year of Sanitation 2008
ix. Global Handwashing Day (15 October)

In 2013, the world celebrated the first global toilet campaign on 19 November. Many countries have taken further steps in terms of policy formulation and advocacy. For instance, Angola's national plans include WASH facilities in schools. In 2008, national school standards in China, Gambia, Pakistan and Thailand incorporated safe water supply and gender-segregated toilets. In the same year, national education curricula in China, the Democratic Republic of Congo, Nicaragua and Sudan incorporated hygiene education (Nagpal, 2010). The standards for WASH in Schools have now been codified in the 2009 WHO/UNICEF guideline: Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings. However, some countries have their own national standards, while other countries are in the process of updating their standards based on the WHO/UNICEF guideline. With this view, Zambia has its own guidelines based on the 1995 Public Health regulations under the drainage and latrines section.

Moreover, WASH in schools is widely recognised as an important element in the achievement of water, sanitation and hygiene for all and the Millennium Development Goals (MDGs). There are particularly two goals that reflect the recognition of WASH in schools in many ways. According to Mooijman *et al* (2010), MDG 2 focuses on achieving universal primary education. The target seeks to see a situation where all boys and girls are to complete their primary

education by the year 2015. MDG 3 focuses on gender issues with indicators on schooling. As earlier noted by WHO (2004), issues of water, sanitation and hygiene in school, are very important for the smooth progression of the learner. The MDGs have therefore given hope both to the schools and learners as WASH issues in schools are intended to be holistically looked at by central governments and the international community.

2.4 Regional National Policies for WASH in schools

A lot of developing countries have made strides towards formulation and enactment of national policies related to School WASH programme. According to Tobin and Koppen (2005), the National Policy regarding public hygiene and the development of basic hygiene education was established in Burkina Faso in 2002-2003 and adopted by the Government in 2004. Hygiene promotion in schools is a major component of this policy. A National Strategy Framework on school water, sanitation and hygiene education has been developed and adopted.

Similarly, since the introduction of free primary education in 2003 in Kenya, national primary school enrolment has risen. Tobin and Koppen (2005) reports that the Ministry of Health developed an environmental health and hygiene policy in 2007 that included a school health programme component to address health issues in schools.

Additionally, in Uganda the Rural Water and Sanitation Strategy and Investment Plan 2000-2015 and the Operation Plan 2002-2007 are a direct result of the Sector Wide Approach (SWAp), applied as the main framework for managing water and sanitation. In the 2004-2015 Education Sector Strategic Plan, school sanitation is mentioned as a strategy for Uganda's development goals (GU, 2012).

2.5 Importance of National Policies

As evidenced in Colombia, it is difficult to get WASH in Schools high on the agenda of policy makers. This is because of skepticism about its importance relative to other problems such as poor enrolment and the bad condition of

classrooms (Carriger, 2007). Combining WASH in Schools with the improvement of ventilation and light and the rehabilitation of the classrooms has for a long time increased the interest of the many policy makers around the world. As such most of the regulations as can be seen under the Zambia's Ministry of Education Science and Vocational Training and Early Education 2009 Infrastructure Operational Plan, allocation of funds and regulations are mostly related to the number of buildings to be constructed and their construction specifications (GRZ, 2009). The challenge is that policies are more technically oriented and do not relate to codes or regulations on the use of the facilities by students, their maintenance and most importantly, conduct and behaviours that uphold satisfactory standards of hygiene.

WASH in schools sanitation considerations also appear to become recognised, for example, as part of education reforms, such as free access to primary school education. According to Kaulule (2006), these types of reforms, although positive, put pressure on the existing school infrastructure. Schools thus accommodate larger numbers of children than they were designed for. Because of this, educational policies have been putting so much emphasis on investments in school infrastructure and neglected the need of a healthy school environment.

WASH programme intervention in schools aims for government policies in various countries. UNICEF (2012) argues that faith based and private schools in most cases do not fall under national policies hence some countries have put mechanisms to promote the WASH programme in such schools as well. UNICEF further highlights that about 11% of primary and 24% of secondary school children in developing countries are in missionary and private schools respectively. In this regard, the policy on school WASH should incorporate both private and faith based schools. This would bring homogeneity in the implementation of the programme and that all learners will have the same conditions in their learning process.

2.6 Institutional Arrangements in Zambia

GRZ (2010) states that the responsibilities for school WASH in Zambia are fragmented. There are several government institutions that contribute towards the implementation of WASH in schools and these include the Ministry of Local government and Housing (MLGH) through the Department of Housing and Infrastructure Development (DHID), Ministry of Health (MoH), MESVTEE and Ministry of Community development and Social Services (MCDSS). In the MESVTEE, the Infrastructure and the Planning Departments are the main units involved in school WASH promotion. The Provincial Education Office includes a senior buildings officer, whose role is to co-ordinate school infrastructure works in the province. This team supervises the construction of schools, including their water supply and sanitation infrastructure.

GRZ (2010) further asserts that MESVTEE plans, coordinates and monitors the construction of school toilets and school hygiene promotion. The sanitation and hygiene component of the National Rural water policy provides guidance on toilets and hygiene promotion in schools, including strengthening the adherence to the Public Health Act of Zambia and sets the technical standards related to toilets and other sanitation products in schools. Above all, the sector is responsible for the resource mobilization and monitoring the use of funds transferred through District Education Boards to schools for school toilets and hygiene promotion. Despite having this responsibility, the contribution of the sector towards improvement of water, sanitation and hygiene in schools is inadequate (AMCOW, 2010).

Additionally, UNICEF (2006) argues that there is a misunderstanding between the School WASH programme and School Health and Nutrition (SHN) programme at both school and management level. Even if at management level SHN is understood to include school WASH, this seems not to be the case at implementation (school) level as the two programmes are implemented

differently. This has led to the problems of resource distribution and failure to differentiate the SHN programme from WASH programme.

2.7 Policy Environment in Zambia

With the need to strengthen school WASH in Zambia, the government through MOE has advanced collective action on the importance of improvement of infrastructure in schools. Its views and agenda on education in line with the MDGS were advanced in the Vision 2030. This was made operational in the Fifth National Development Plan (FNDP) and the current Sixth National Development Plan (SNDP). Moreover, in 2007 through the Ministry of Local Government and Housing (MLGH), the government launched the Sanitation and Hygiene component of the National Rural Water Supply and Sanitation Programme (NRWSSP) which is in force from 2006 to 2015 (GRZ, 2007). This was developed in order to assist the MDG of halving the number of people without access to adequate sanitation by 2015 and to achieve universal sanitation coverage by 2030 as the prime objective of the country's vision 2030 (GRZ, 2009).

In addition, GRZ (2009) argues that through the Public Health under the drainage and latrine regulations mandate all schools to provide proper and sufficient latrines for school children. In 2001 MESVTEE gave guidelines which stated that eight hand basins should be provided for the first 100 pupils in a school and three basins for the next 50 pupils. This is in line with the Public Health Regulations (1995) which stipulated the water closets and pit latrines in each school as outlined below;

i. Water closets/seats and pit latrines for girls
    a. 1 closet/seat for every 10 or part of 10 for the first 30
    b. Four closets or seats for over 30 and 50
    c. Five closets or seats for over 50 and under 70 pupils
    d. Six closets or seats for over 70 and under 100
ii. Water closets or seats and pit latrines for boys
    a. One closet for every 20 or part of 20 for the first 100
    b. Thereafter, one closet or for every 30 or part of 30 pupils

Finally, the government declared July as school health month for enhanced sensitization on health and nutrition in schools. Individual districts country wide formed multi-sectoral teams that implement school health month activities, monitor progress, record lessons, challenges and raise suggestion for possible solutions (GRZ, 2007). The success and achievement of all these regulations and plans in schools are yet to be learnt.

2.8 Programme coverage in Zambia

USAID (2010) affirm that more than 25% of basic schools in Zambia do not have access to safe water supply (borehole-piped, borehole-pump, piped water and protected well), and of the 9,564 sanitary facilities (flush toilets and latrines) in schools, 87.5% consist of pit latrines and the rest are flush toilets. Pit latrines range from high quality to makeshift latrines consisting of stick and mud floors over pits of uncertain depth with flimsy enclosures made of sticks and grass and brick enclosures in most of the rural schools. These are reinforced with concrete slabs over the pits but lack ventilation and deep foundations to the bottom. There is almost equal number of sanitary facilities for both boys and girls. The ratio of pupils per toilet is generally high, reaching 90 pupils per toilet in some of the schools which is way beyond the MESVTEE standards of 1:40 for boys and 1:25 for girls (AusAID, 2012).

Hand washing facilities are also few even in schools that have been built recently (USAID 2010). MESVTEE construction plans had no sanitary facilities rendering that the Ministry would have to revisit the same schools to add this component. The general water and sanitation situation in schools does not meet the Public Health Regulations and Requirements for School toilets. This is also supported by UNICEF (2010) which affirms that there is an imbalance between the number of pupils and water and sanitation facilities in schools. It is indicative of the reduced spending on infrastructure over time, a lack of maintenance of existing structures and the bias in infrastructure development towards classroom construction over water and sanitation facilities in response to huge numbers of learners still out of

school. This is coupled with the unclear policy and institutional arrangements in the provision of water particularly in rural schools. As such UNICEF concluded in 2010 that only 37% of schools have permanent latrines, and seven (7%) have none at all. While only 20% of schools meet the accepted pupil- latrine ratio of 1 to 40 boys and 9% for the required 1 to 25 for girls.

2.9 Funding for the Programme

The success of school WASH programme is dependent on the financial support from donors, government and NGOs. According to AMCOW (2010), donor allocations account for 90% of the WASH sector spending with government and NGOs each accounting for 5%. In order to reach the national targets for water, 109 million dollars is required every year with 76 million dollars yearly estimated to be expected from public funds. Despite these amounts, GRZ (2006a) reports that there has been unsatisfactory budget performance and failure to meet planned programmes. This has therefore led to the stepping in by the donors to fill the gap caused by under funding from the government. With the fragmentation of the water supply and sanitation responsibility existing across various government ministries, tracing sector-wide financing is difficult (NWASCO, 2012). The gap in financing highlights that rural water supply and urban sanitation as subsectors are suffering the greatest deficits. Since the current level of financing is negligible, the attainment of the MDGs for water, sanitation and hygiene will be difficult.

Additionally, GRZ (2010) agrees that MESVTEE heavily depends on various organisations in the implementation of the school WASH programme in Zambia. Despite this fragmentation (dependence on various organizations), the responsibility entirely lies in the MESVTEE. In 2009, the government came up with the Sanitation and hygiene budget for the period from 2009 to 2015. Even if it did not reflect the actual government contributions, the budgetary allocation towards the school WASH programme for the same period is K176, 631,000 occupying 63.08% of the total budget towards the general WASH programme in

the country. GRZ (2009) agrees that the main financing for the school toilets and hand washing facilities is from the government and its partners. It is thus noted that the government on its own, cannot manage hence partnerships and local contributions are cardinal in the success of the programme.

Despite setting the above funds for school WASH programme, the government does not have a separate school WASH unit or department responsible for the programme instead it is part of the MESVTEE Infrastructure Unit which is responsible for the general infrastructure development in schools. The school WASH activities thus are not costed separately but within the general national infrastructure development for schools (GRZ, 2009). The infrastructure unit is responsible for the erection and maintenance of school infrastructure which include classrooms and new schools. As such, in 2009 the government planned to construct 275 new basic schools where 814 classrooms were to be made available upon completion. In order to achieve this target, 4 billion kwacha (4 million kwacha rebased) was allocated for sanitation facilities for new schools constructed (UNICEF, 2010). Nonetheless this has not addressed the school water and sanitation needs and still has left a huge pool of old schools without adequate sanitation facilities. Since everything has been bundled in the construction of new schools, it is difficult to establish the actual amount towards school WASH programme. The main activities of the MESVTEE for the school Sanitation and Hygiene promotion are as outlined in Table 1 below.

Table 1: MESVTEE's main activities in promoting WASH in Schools

No.	Activities	Institution
1.	Review, adjust and develop data materials and guidelines.	MESVTEE
2.	Construct additional adequate toilets and hand wash facilities	MESVTEE
3.	Develop and implement training of teachers of hygiene.	MESVTEE
4.	Conduct hygiene promotion as integrated in the curriculum.	MESVTEE
5.	Implement creative activities related to sanitation and hygiene.	MESVTEE

Source: GRZ (2010)

2.10 Research Gaps

Despite School WASH being popularized worldwide, lack of a clear policy in Zambia renders challenges for its implementation. Zambia's School WASH related policies are technically oriented (advanced practical use of facilities, methods, etc) which may be difficult to be understood their maintenance and behavior that uphold satisfactory standards of hygiene at the grassroots (by schools and students). There has been some research on School Health and Nutrition (SHN) (GRZ, 2009) with its link to WASH hence the existence of the SHN policy. Similarly various organizations have been conducting research on WASH activities in schools but they have all focused so much on its state and coverage. Since its adoption in 2010, very little has been written about its implementation in Zambian schools. Since there is little progress of WASH in Schools in Zambia, it remains a matter of urgency that more research and publication of findings on the programme implementation be conducted.

Overall, this chapter has provided a review of literature related to the study. The background, history and development of School WASH programme have been acknowledged. Relevant literature on designing effective implementation process of the programme, importance of the programme and collaboration and challenges have been acknowledged.

CHAPTER THREE: STUDY AREA

3.1 Location of the Study Area

Choma district is located in Southern province of Zambia. Since 2013, Choma is the new provincial headquarters. It covers a total area of 7,296 km^2 and shares boundaries with Namwala (north), Monze (north-east), Pemba (north-east), Sinazongwe (south) and Kalomo (south-west). It is approximately 300km to the south-west of Lusaka and about 188km to the north-east of Livingstone, the tourist capital of Zambia. It lies between latitudes 15°45' and 17°45' south of the Equator and longitudes 26°30' and 27°30' east of the Greenwich Meridian (GRZ, 2006b) (Figure 1).

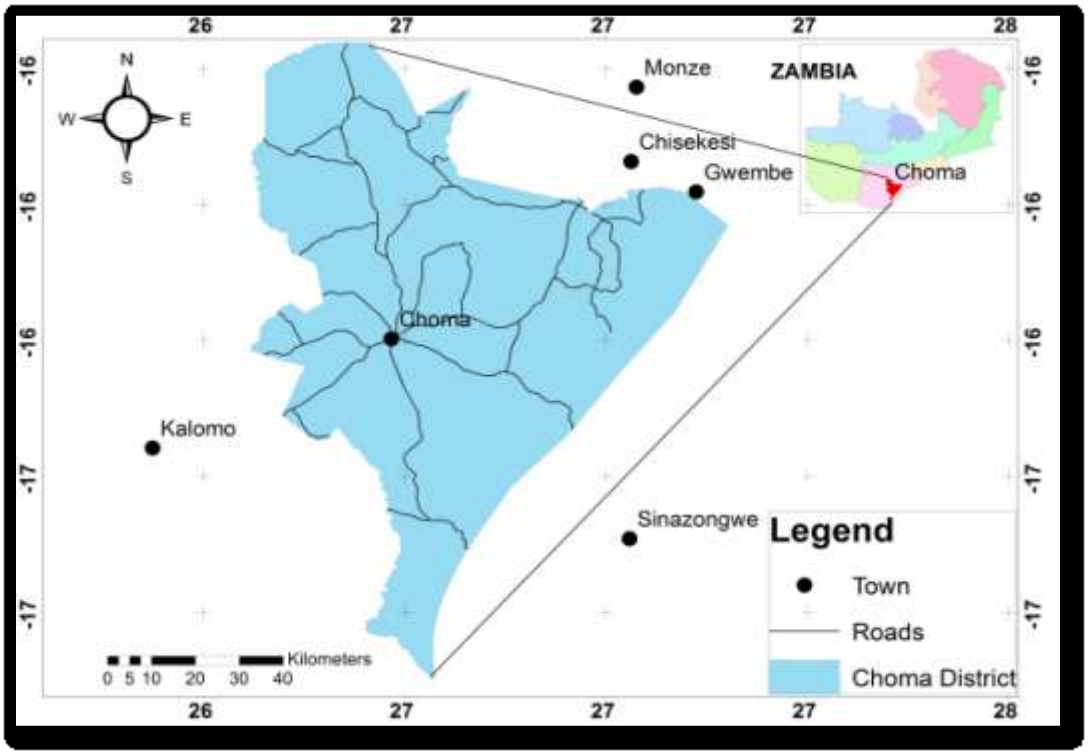


Figure 1: Location of the study area of Choma district.

3.2 Physical Characteristics

This section focused on the climate particularly temperature and rainfall, major landforms and drainage. It also covers the soil types, vegetation and the general relief of the district.

3.2.1 Climate

Choma district has a typical climate of Southern Province (plateau) with average temperatures between 14°C and 28°C and sunshine ranging between 6 and 9 hours a day. The highest temperatures occur between the beginning of October 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 thus receives an average total raifall of about 800mm annually (Nyambe and Feilberg, 2009). Potential evaporation exceeds rainfall to about 1000mm annually thereby reducing the total amount of rainfall. Therefore, the district lies in a zone of low rainfall.

3.2.2 Landforms and Drainage

According to GRZ (2006b), Choma District is a plateau consisting of metamorphic rocks, Platonic rocks and hard deposit rock of the pre-Cambrian and the Palaeozoic and Mesozoic periods. From the hydrological point of view, aquifers of the plateau are the fractured zone and occur in the weathered zone. It is drained by a number of seasonal streams. The major one is Nkanga stream which is usually flooded during the rainy season and provides the main drainage system of the district. It is on this stream that Choma dam was built which provides piped water to the town for residents and fishing ground. The district has more than 125 dams scattered all over and some of these include Popota, Moomba, Nkanga, Mochipapa and Munzuma dam while important streams include Kabwesha, Semahwa and Munzumanane (GRZ, 2006b). Some areas of the district are characterised by light marshlands. This has resulted into high ground water tables that are good for borehole drilling and well development.

3.2.3 Soils and Vegetation

According to GRZ (2006b) Choma district soils are brownish to redish yellow with a fine texture. But around the drainage basins they are usually dark in colour and sticky. GART (2006) reveals that the brownish yellow to redish yellow soils are classified as haplic acrisols. While the dark sticky soils around most drainage

and flooded areas are referred to as vertsols. Nonetheless, Choma soils are inherently infertile due to poor drainage and vulnerability to degradation due to continued cultivation in the area, low in organic matter content, nutrient and water retention.

GART (2006) further reveals that woodlands and grasslands dominate the vegetation of Choma district. The predominant vegetation types are the *Brachystegia* (Miombo) and Acacia (*Muunga*) Woodlands on the plateau, which includes the project area. The grassland consists mostly of *Hyparrhenia, Andropogon* and *Heteropon,* The *mada* triandra as the main components. Most of the vegetation is characterized by vegetation which is in its secondary succession and this is because of seasonal bush fires and cultivation which disturb the primary vegetation.

3.2.4 Relief

Most parts of the district lie between 1200 to 1350 metres above sea level (masl). The terrain is nearly flat to gently undulating with slopes usually less than 5 percent. Choma lies on a plateau, border between the most Southern part of the Kafue watershed and the Zambezi watershed with the shore of Lake Kariba over 60 km to the South-east (GART, 2006).

3.3 Socio-Economic Characteristics

This section describes the population, the social amenities, the types and management structure of schools and economic activities of the local people in Choma District.

3.3.1 Population

According to CSO (2010) Choma district has the third largest population in Southern province after Mazabuka and Kalomo districts. It is also the third most densely populated district after Livingstone and Mazabuka. In 2010 population census revealed that the total population for the district was 244,180 and this is

divided into 118,486 males and 125,694 females. About 114,876 were 18 years and above while 129,304 were below 18 years. This means that 53 percent of the total population is composed of the youth. Moreover, the average annual population growth rate for the district between 2000 and 2010 was 1.8 percent of which males was 1.6 percent and 1.9 perce, nt for females.

3.3.2 Social Amenities

Choma district has a lot of social amenities. For instance, it is the regional headquarters for Southern Water and Sanitation Council (SWASCO) which provide piped water and sewage services to the residents in the urban area. The town is supplied with water from two sources, namely Munzuma and Choma reservoirs. The estimated urban population supplied with water by SWASCO is around 37,000 (GRZ, 2006b). On the other hand, the main sources of water supply in rural areas are boreholes, reservoirs, wells and streams. Currently, there are about 125 dams and 364 boreholes in the district and mostly sunk with the help of District Water, Sanitation and Health Education (D–WASHE) and Red Cross (GRZ, 2006b). There are 450 villages in the district of which only 50 are under D–WASHE water supply network.

It also has a number of health institutions and the major one is Choma General Hospital. Education services are characterized by a few colleges (the major one being Choma Trades Training Institute) and a lot of both secondary and primary schools. Few sporting facilities are found in the district and among them are the golf course and soccer stadium. In addition, there is one hotel and a lot of lodges and guest houses.

3.3.3 Schools in Choma District

Choma district schools are managed by a 16 member District Education Board constituted by the DEBS, DESO, PTA Representative, four union representatives, one High School Headmaster, 6 members from the community, One Councilor and Chairman of the Basic Schools Heads Association, GRZ (2006b). According

to Ministry of Education (MoE) (2012), there are 201 schools in the district. These include the Lower Basic, Middle Basic, Upper Basic, Secondary/high and Community Schools. The pre-schools are thus managed by the local council.

3.3.4 Economic Activities

The majority of the population in Choma district depends on agricultural related activities for its livelihood, including crop production and livestock rearing. In 2000, the number of farm holders was estimated at 12,599 for Choma, with 84% and 16% representing small scale and medium farm holders respectively, while only 0.4 percent of farm holders were large-scale holders (FAO, 2004). The major cropping systems in Choma district are cereals (maize), legumes (groundnuts and cowpea), and roots and tubers (sweet potato). Other crops produced are vegetables (both exotic and traditional), fruits (including banana and mango), tobacco and sunflower. Livestock rearing is important for many rural households in Choma district and mainly involves poultry, goats, cattle and pigs. FAO also reports that other important livelihood sources in Choma district are wage labour, charcoal burning, trading, and handicraft. Figure 2a shows land preparation while Figure 2b shows trading at an open market, as some of the economic activities in Choma District.

Figure 2: Photographs showing (a) Land preparation for agriculture and (b) Open market place in Choma district. Source: Field Data, 2013.

Overall, this chapter has provided the background information of the study area. The geographical location, physical and socio-economic characteristics have been acknowledged.

CHAPTER FOUR: METHODOLOGY

This chapter discusses the methodology used in this study. It gives the description of the research design, target population, sample size and sampling procedure, research instruments and data collection procedures used. Problems encountered during data collection and analysis and data interpretation have also been discussed in the chapter.

4.1 Data Collection

The strategies employed in the study which included the study design, sample size and sampling technique and the data collection strategy which includes the tools such as questionnaires, interviews, focus group discussions and observations are discussed here.

4.1.1 Study design

The study was a survey. Cohen and Manion (1980) argue that surveys gather data at a particular point in time with the intention of describing the nature of existing conditions or identifying standards of which existing conditions can be compared or being able to determine the relationships existing between events. This study adopted both qualitative and quantitative methods of data collection. Qualitative data was collected using interviews with Key Informants, Questionnaires through the open ended questions and Focus Group Discussions and analyzed thematically through detailed descriptions and explanations of information submitted by respondents. On the other hand, quantitative data which included the numbers of Schools and WASH facilities was collected through the questionnaires and analyzed using SPSS and Excel in order to generate frequencies and percentages.

The study was limited to key informants, Head teachers, teachers and pupils. Each respondent in the case of the Headteachers represented a school. Stratified random sampling was used because the sample frame was small and the schools were not normally arranged in a systematic pattern. According to Bless and Smith (1995), Stratified Random Sampling is a method that involves the division of a population

into smaller groups known as strata. The strata are formed based on the attributes or characteristics of the members. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. The subsets of the strata are then put together to form a random sample. The advantage of this method is that it captures key characteristics in the sample hence being proportional to the overall population. However, the disadvantage of this method is that the subgroups may not be formed and that different strata do not have the same fraction amongst each other.

4.1.2 Sample Size and Sampling Technique

The sample frame included all schools in the district and this encompassed the Secondary, Primary, Community schools and the Interactive Radio Initiative Programme (IRI) centres or schools. There were 15 secondary schools and 153 primary schools, 27 community schools and six (6) IRI centres as shown on the Appendix I. This brought the total number of schools in the district to 201. The sampling strategies employed were stratified random sampling for the schools and their respondents and purposive sampling for key institutional respondents within Choma district.

The complete list of all the schools in Choma district was collected from the District Education Office. The collected list of schools was clustered according to their type and level of education they offered. In this case, four different groups were identified which included high (secondary) schools, basic or primary schools, community schools and IRI centres. From the stratified schools, 65 schools were selected randomly within Choma District. The selection of the above schools was done by means of lottery – assigning each school a number from one (1) to 201 and then randomly selecting 65 schools based on their stratum. From each and every stratum, schools were selected according to their ratio. The 65 schools selected were earmarked for interviews but during the study, only 60 schools participated in the study. This is because no response was received from five (5) schools as either contacted schools refused to return or lost the research

instruments. Due to limited time for the research, the researcher could not collect the research tools. This means that the response rate for the questionnaires was 92.3%.

The chosen sample size was 65 schools/respondents and this was drawn as follows;

- Total number of schools in the district was 201
- Stratified random sampling method was used
- Ratio of the sample to population size;

  f = n/N = sample size/size of population

  f: Ratio, **n**: sample size and **N**: total population

  f = 65/201

  f =1/3.092

Using the above ratio, sample sizes for each stratum was calculated and then added each result to make the total sample as illustrated in Table 2. According to the Sample frame, there were four (4) strata namely; Secondary schools, Basic schools, Community schools and IRI centres.

Table 2: Sampling and sample size of selected schools in Choma District

No.	Stratum	Type of School	Number of schools
1	1	Secondary schools	5
2	2	Basic schools	49
3	3	Community	9
4	4	IRI Centres	2
Total			**65**

In order to arrive at the particular schools that were sampled, the Choma district Census list as shown on Appendix I was used and on this list, the schools were assigned numbers from one (1) to 201. Each school that appeared every after three (3) schools was taken to be part of the sample. This was done for all the four strata and finally the sample was constituted.

The selection of key informants was purposive by targeting the district heads of government departments of MESVTEE and MLGH as they are directly involved

in the School Water, Sanitation and Hygiene programme. Similarly, WASH specialists at district World Vision and United Nations International Children Emergency Fund (UNICEF) were included. This brought the total number of key informant selected purposively to four (4).

4.1.3 Data Collection procedure

Before commencing the research, the researcher sought permission from the DEBS in Choma district. The researcher was hence given an introductory letter which introduced him to target schools in the district. While in the schools, the researcher first sought permission from the Head teacher or administration to conduct the study and use the infrastructure before proceeding with the study.

4.1.4 Data Collection Tools

The data for this study was collected using multiple strategy technique. The strategy allowed collaboration of data obtained from each of the various different methods. In this study, apart from semi-structured questionnaires, in-depth interviews, focus group discussions, document review and observation were used to confirm the findings.

4.1.4.1 Primary Data

Semi-structured questionnaires, in-depth interviews, focus group discussions and observations were used to collect primary data.

(a) Questionnaire survey

Information relating to the implementation of School WASH programme in the schools was collected from the participants. Semi-Structured questionnaires were used and the schedule had both close and open ended questions as shown in Appendix II. 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. Moreover, the questionnaire was administered in English as the target group was conversant with the language. As such, a set of

questionnaires was administered to 60 Headteachers of schools. With the help of one research Assistant, the Researcher read out the instructions before the respondent filled in the questionnaire.

The questionnaires were filled in during the respondents' free time although the researcher gave a time frame of five working days in which he would collect the filled in questionnaires. However, for rural schools, the researcher had to wait at each school to collect the filled in questionnaire because the schools were scattered in distant places. As such it would have been costly to collect the questionnaires if they were left in such schools. In upholding confidentiality, Headteachers were told not to write their names but the names of the school.

(b) Observations

Observations were also actively employed on the selected schools' premises to verify some of the responses that were given. Key elements that were observed were the toilet facilities, hand washing facilities, artistic work for water, sanitation and hygiene on the walls and the availability of clean water for use in the selected schools.

(c) Focus Group Discussions

Three Focus Group Discussions (FGD) were conducted which included groups for the pupils (as the youth), school Matrons (as the women) and male hostel parents/counselors (as the men). Each FGD comprised of 6-10 participants and were facilitated by the Researcher. During the discussions, the researcher with the help of one research Assistant used a Mobile Cell Phone to record the discussion. All the three FGDs were conducted at Masuku Secondary School. This was one of the boarding schools in Choma district.

(d) In-depth Interviews

In depth interviews were conducted with the Planning Officer at the DEBS, the District WASHE coordinator at Choma district, MLGH and World Vision so as to capture information which was not captured in the questionnaires.

4.1.4.2 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 was also useful on how School WASH programme has been implemented in other countries and the extent various stakeholders were collaborated in these activities.

4.2 Data Analysis

Data analysis was done using quantitative statistical methods. The data obtained from the questionnaires was recorded in Statistical Package for Social Sciences (SPSS) and Excel sheets to analyze quantitatively. Excel analyzed all responses of the questionnaires to bring out statistical representation of data in graphs and figures with frequencies and percentages. On the other hand, descriptive data was analyzed qualitatively by comparing and grouping rather categorizing respondents' opinions. It is from here that emerging themes from the data obtained were grouped or categorized and then interpreted. Nonetheless, all information was linked to field observations during the time of data collection. Digital data such as photographs were also used to bring out some aspects of the schools' surrounding.

4.3 Limitations of the study

The Researcher faced a number of challenges during data collection process. Some of them are listed below;

i. Some Head teachers or schools that were sampled refused to participate in the study especially in urban schools as they expected to be paid or compensated for their participation while others were not certain with their right to confidentiality in the study hence the Researcher had to consider other schools. A lot of time was lost in the process of finding other schools. Due to limited time for data collection, some schools which were

sampled were left out thereby reducing the sample from the targeted 65 schools to 60 schools.

ii. Getting feedback from urban schools was very difficult as some schools lost the research instruments while others took long time than was expected. As such some of the distributed questionnaires were not collected by the Researcher from the participating schools due to limited time allocated for the exercise hence failing to meet the targeted 65 schools to 60 schools.

iii. Due to limited time, long distances and lack of information when the IRI programmes took place, the researcher could not collect data from the IRI centres. IRI Centres were therefore replaced with Primary schools hence the study did not have any information from IRI programme centres.

Overall, this chapter has described the research design that was adopted and procedure used to collect and analyse data.

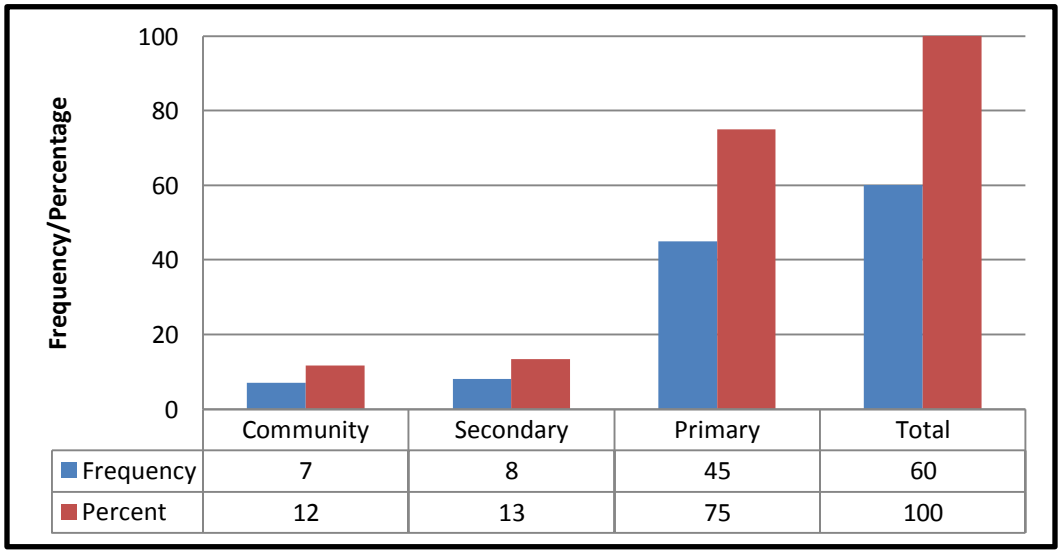
CHAPTER FIVE: FINDINGS OF THE STUDY

5.1 Data Reporting and Presentation

Reporting and presentation of the findings of the study was done by employing a variety of methods which included graphs, tables and photographs. This chapter reports the findings of the study by focusing on the type of schools, teacher-pupil ratio, general WASH in schools, elements of school toilets/latrines, hand washing facilities, water supply and hygiene education. The chapter also provides the respondents' recommendations, responses from selected District line ministries and cooperating partners and responses from FGDs.

5.2 Types of Schools

This study covered different types of schools which included community, secondary or high, primary or basic schools as shown in Figure 3. These schools were also categorized according to their source of funding or sponsorship as categorized in the school census.



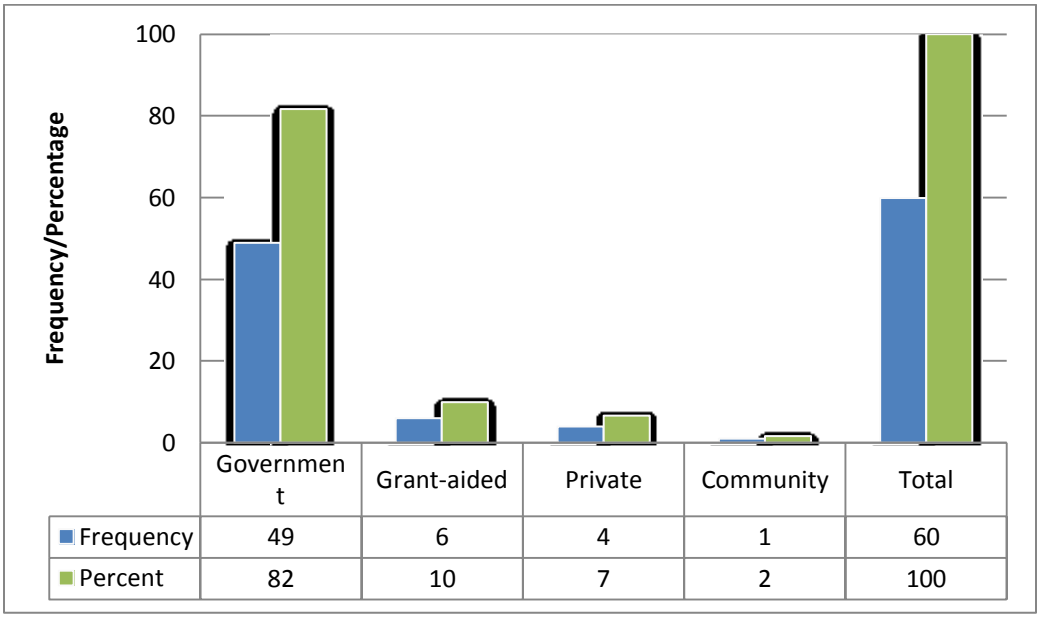
	Community	Secondary	Primary	Total
Frequency	7	8	45	60
Percent	12	13	75	100

Figure 3: Types of Schools in Choma District. Source: Field Data, 2013.

Figure 3 reveals that only three types of schools participated in this study and these included the community, secondary and primary schools. There were 60

schools that were investigated and among these, 45 (75%) offered primary education. Eight (13%) of them were Secondary schools while Community schools were seven (12%). None of the IRIs participated in the study despite being sampled. It can therefore be concluded that the majority of schools investigated were primary or basic schools.

These schools were further categorised based on their source of support. Various schools had different sources of their funding according to their establishment. Figure 4, shows the 60 schools that participated in the study and their major sources of funding.



	Government	Grant-aided	Private	Community	Total
Frequency	49	6	4	1	60
Percent	82	10	7	2	100

Figure 4: Types of Schools and their major mode of support. Source: Field Data, 2013.

As shown in Figure 4, 49 (82%) of the schools were government schools and six were grant-aided schools popularly known as mission schools. Others included four private schools (7%) and only one (2%) was entirely supported by the community. As such, most of the schools especially primary or basic schools received their funding from the government. Additionally, they had other sources of support from the volunteers and well wishers.

5.3 Research Participants

This study revealed that among 60 schools that participated in the study (Figure 5a), there were 1470 teachers. Of this number 815 (55%) were female and 655 (45%) were male teachers. On the other hand, Figure 5b revealed that there were 33,921 pupils from the 60 schools that participated. Out of these, 17,662 (52%) were girls and 16,259 (48%) were boys. The overall Teacher/Pupil ratio was 1:23, while the ratio of male teachers to boys was 1:25 and for female teachers to girls was 1:22.

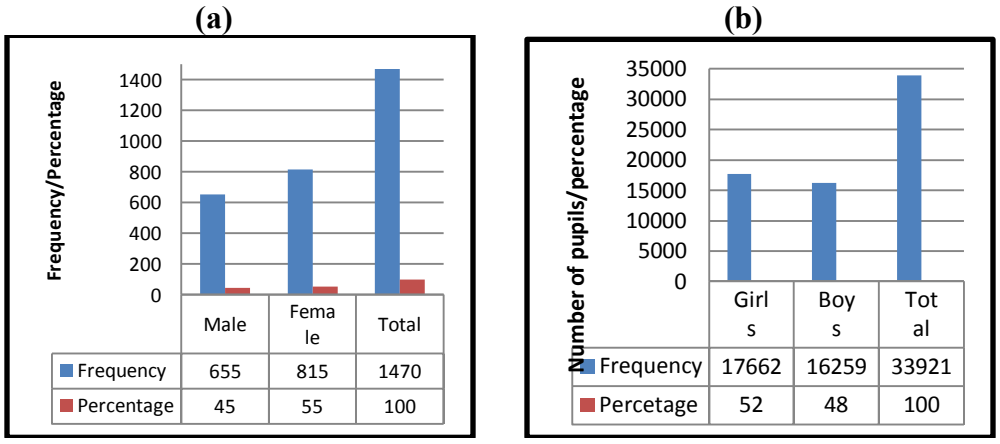


Figure 5: Frequency of (a) male and female teachers and (b) boys and girls. Source: Field Data, 2013.

5.4 General WASH in schools

Out of the 60 schools visited, the research revealed that 34 (57%) of them had WASH related committees. However, 23 (38%) schools stated that they did not have any WASH related committee while three (5%) schools did not indicate whether they had committees or not. Moreover, as shown in Figure 6, the study found that 34 (57%) schools had WASH related meetings though the frequency varied from one school to the other.

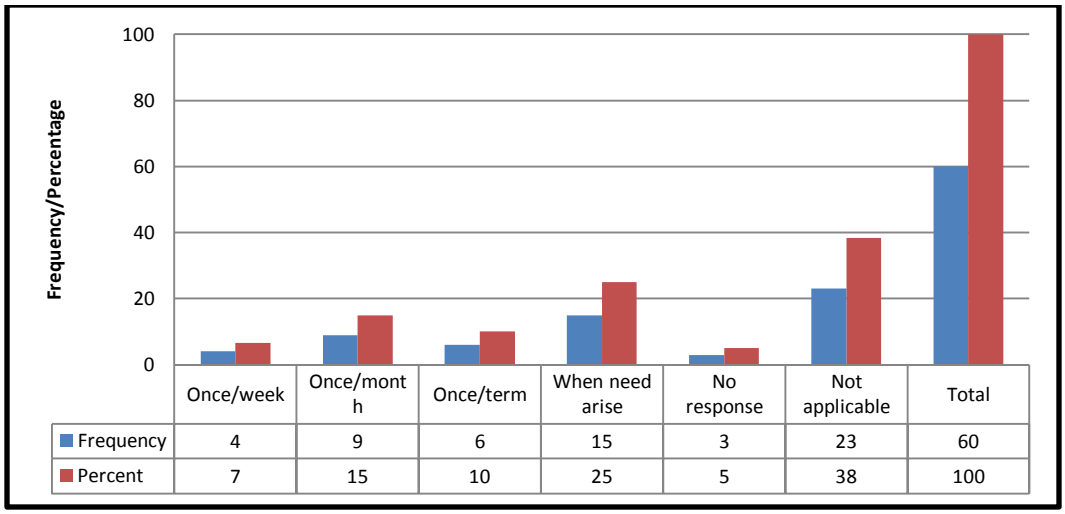


Figure 6: Frequency of WASH related meetings held in schools. Source: Field Data, 2013.

As illustrated in Figure 7, 35 (59%) schools indicated the presence of various WASH related activities and the majority of them (40%) supported hand wash maintenance while hygiene education was the least at only two percent. On the other hand, 23 (38%) schools had no record of WASH related activities while three percent did not respond.

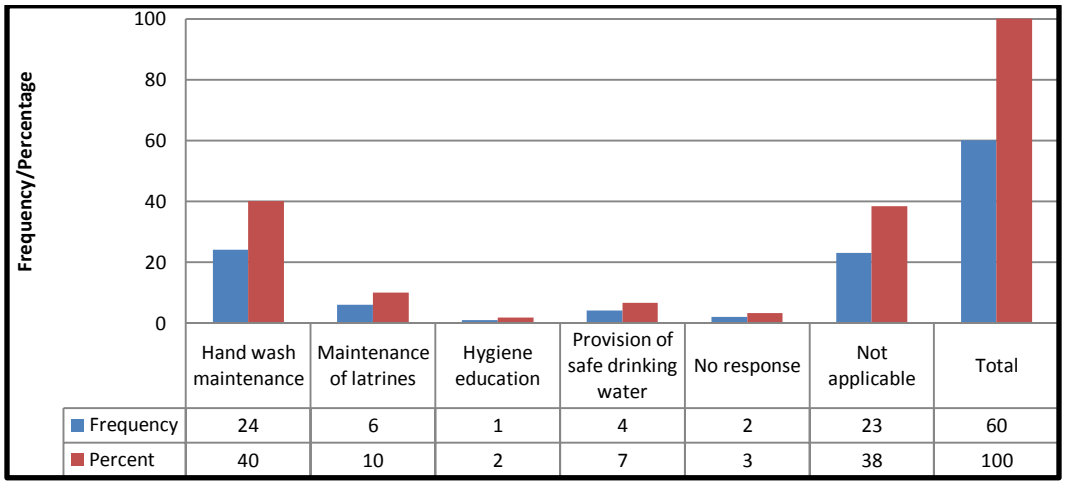
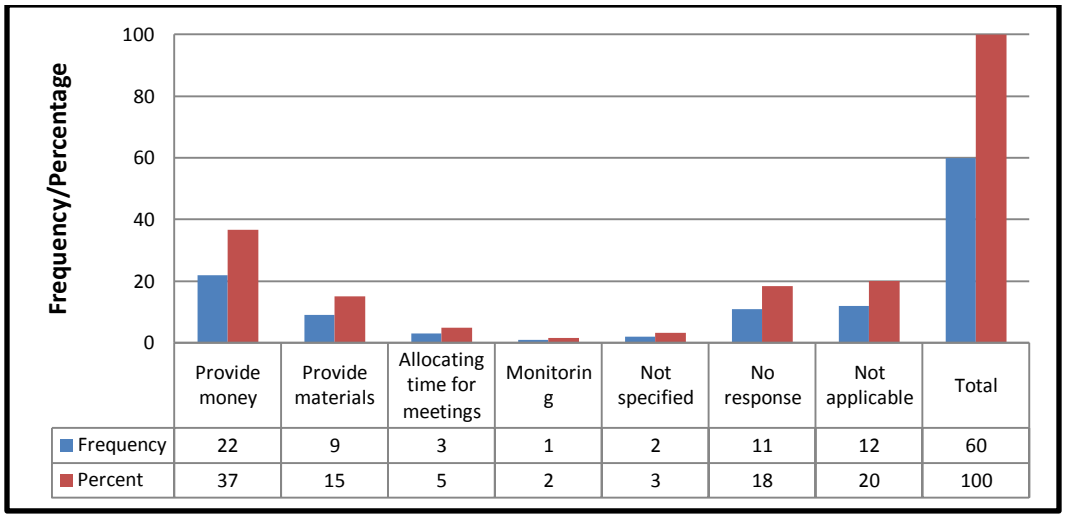


Figure 7: WASH related activities conducted in schools. Source: Field Data, 2013.

The study also revealed that only 16 (27%) schools had trained personnel in WASH activities and most of these were not teachers. They were either called

Cleaners or Sanitary officers. However, 25 (42%) schools indicated that no one was trained. In addition, six schools indicated that it was not applicable while 13 (22%) schools did not give any response on whether they had a member trained or not.

The research further revealed that schools' administration had various ways they supported the activities relating to water, sanitation and hygiene in the schools that were visited. Figure 8 reveals that school administrations had roles to play in the WASH activities. About 22 (37%) schools which provided money, nine (15%) schools provided various types of materials such as building materials which included Burnt bricks and Sand, five (5%) percent allocated time for the meetings related to the programme and one (2%) school only monitored the WASH related activities. On the other hand, the study revealed that 12 (20%) schools had no support from the administration, 11 (18%) schools did not give any response and only two (3%) schools did not specify the kind of activities they were involved in relation to the water, sanitation and hygiene activities.



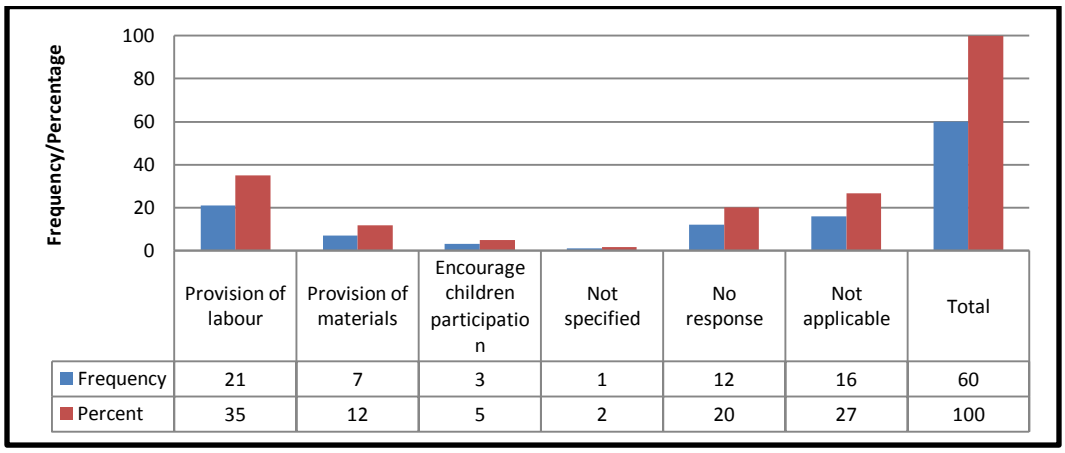
	Provide money	Provide materials	Allocating time for meetings	Monitoring	Not specified	No response	Not applicable	Total
Frequency	22	9	3	1	2	11	12	60
Percent	37	15	5	2	3	18	20	100

Figure 8: School administration support given towards WASH activities. Source: Field Data, 2013.

Finally, with reference to the community's participation in the schools' water, sanitation and hygiene activities, the study revealed in 29 (48%) schools the surrounding communities participated in the activities while for 16 (27%) schools

the community did not participate. Furthermore, eight (13%) schools indicated that it was not applicable to them while seven (12%) schools did not respond. This was because either they were private schools or did not know the role the community played in their schools.

However, as shown in Figure 9, the community participated in different ways from school to school. This study indicated that in 21 (35%) schools the community provided labour for various activities in schools, seven (12%) schools indicated that the community provided materials while only three (5%) schools revealed that the community encouraged children whenever the schools needed the children's participation in WASH activities. However, 16 (27%) schools indicated that the community did not participate in any way, 12 (20%) schools did not respond to the question and one school representing two percent indicated community participation but did not specify the kind of participation.



	Provision of labour	Provision of materials	Encourage children participation	Not specified	No response	Not applicable	Total
Frequency	21	7	3	1	12	16	60
Percent	35	12	5	2	20	27	100

Figure 9: Mode of community participation in School WASH programmes. Source: Field Data, 2013.

5.5 School toilets/latrines

The study found that 16 (27%) schools had flush toilets while 43 (72%) schools had pit latrines. However, one (2%) school did not respond to the question. Nonetheless, Figures 10a and 10b show the flush toilet and pit latrine, respectively, as the types of toilets the study found with pit latrines being most common in rural schools.

Figure 10: Photographs showing (a) Flush toilet and (b) Pit latrine. Source: Field Data, 2013.

As shown in Figure 11a there were 556 toilet seats/holes for the pupils. Girls had more than the boys as there were 305 (55%) seats/holes for girls and 251 (45%) were seats/holes for boys. Figure 11b shows that there was a total 149 seat/holes of toilets for the teachers in the schools with 73 (49%) seats/holes being for the female teachers and 76 (51%) seats/holes for male teachers.

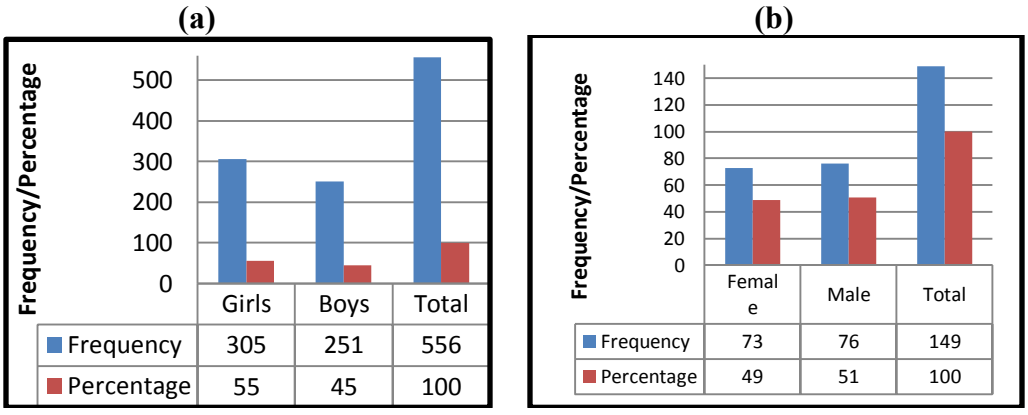
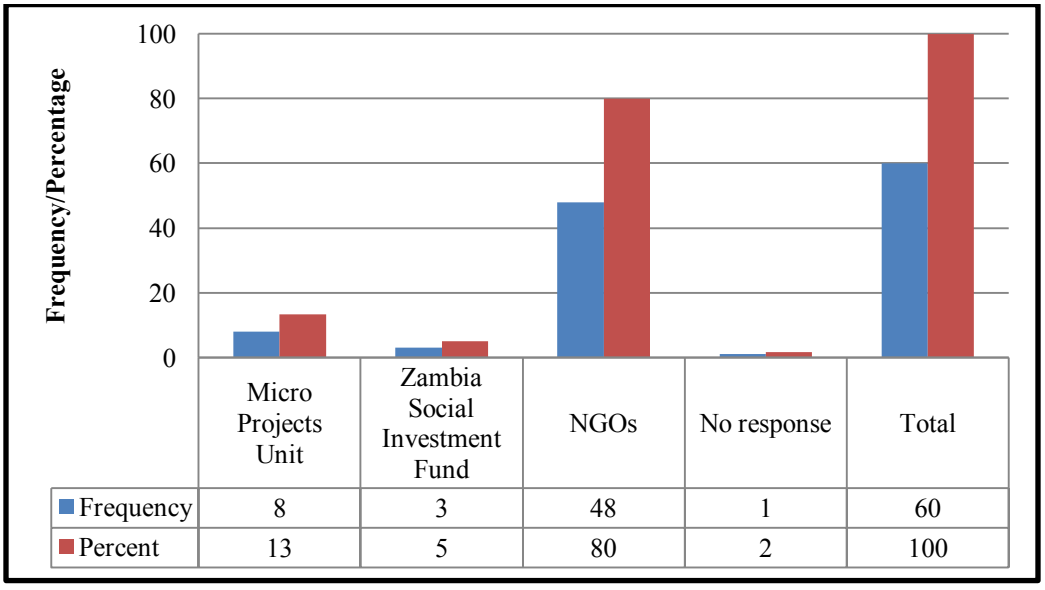


Figure 11: Frequency of (a) pupils' toilets and (b) teachers' toilets. Source: Field Data, 2013.

Moreover, it was revealed that 57 (95%) schools had toilet cleaning schedule. Two (3%) schools indicated that they did not have any schedule while only one (2%) school did not respond to the question. The study also found out that 50

(83%) schools had a maintenance committee that was responsible for the maintenance of toilets in the schools. Seven (12%) schools did not have committees in place while three (5%) schools did not respond to the question.

Figure 12 shows that out of 48 (80%) schools that received funds for the construction of toilets from various non-governmental organizations only 11 (18%) schools received theirs from the government. The 11 schools were further divided into eight (13%) schools which received from Micro Projects Units and three (5%) schools from the Zambia Social Investment Fund.



	Micro Projects Unit	Zambia Social Investment Fund	NGOs	No response	Total
Frequency	8	3	48	1	60
Percent	13	5	80	2	100

Figure 12: Sources of funding for construction of toilets. Source: Field Data, 2013.

5.6 Hand washing facilities

Various types of hand wash facilities existed in the schools. The research found various types of facilities and some were permanently built out of concrete tank while others were improvised by the individual schools. Figure 13 shows the different types of hand wash facilities found in schools.

Figure 13: Photographs showing (a) Sinks, (b) concrete tank with tap, (c) Plastic bucket with tap and (d) Plastic container found in Choma Schools. Source: Field Data, 2013.

The study also found that there were a total of 390 hand wash facilities in the schools. Figure 14, shows that there were four categories of the hand wash facilities namely concrete tank with a tap, bucket with a cup, plastic container with a tap, and plastic container without a tap. There were 107 (27 %) concrete tanks with a tap that existed in the schools. Moreover, 79 (20%) buckets with a cup, 154 (40%) plastic containers with taps and 50 (14%) plastic containers without taps were also found in the schools.

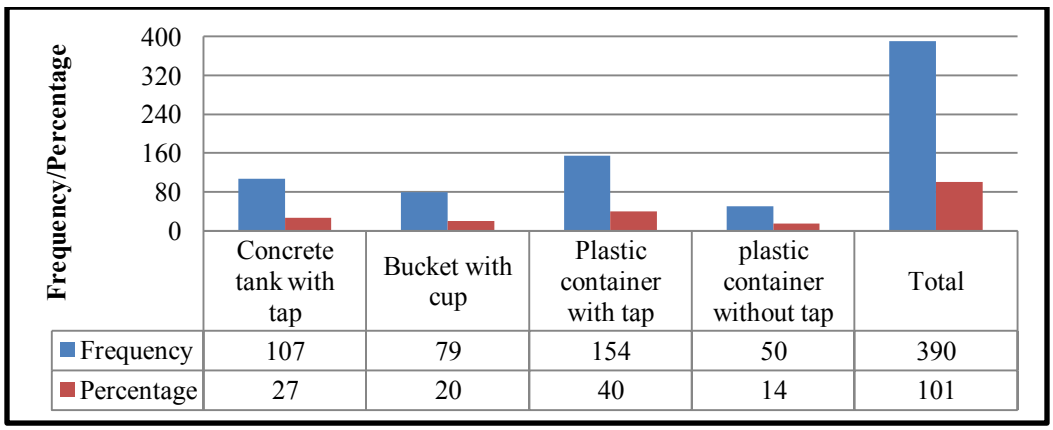
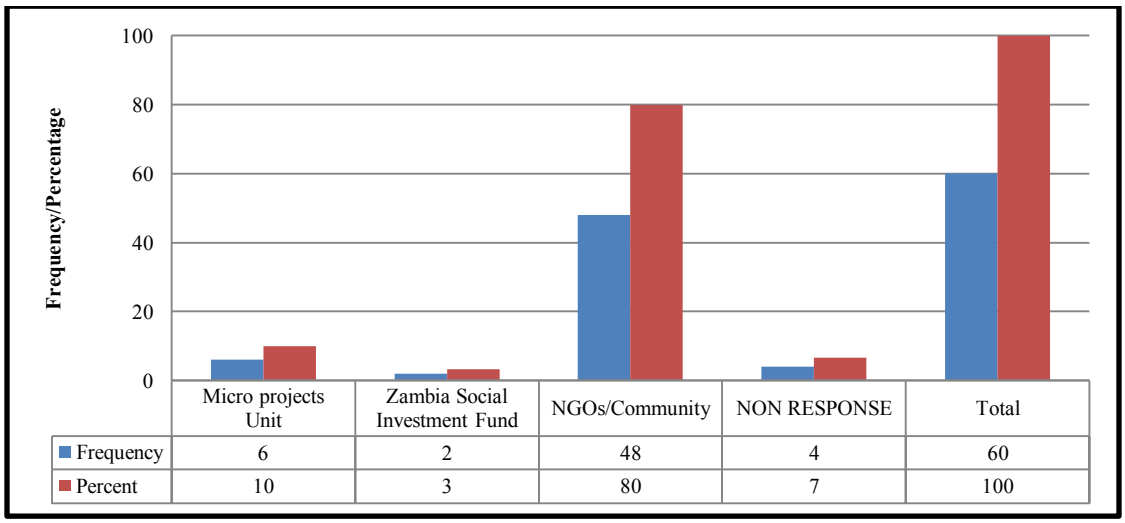


Figure 14: Hand wash facilities found in schools. Source: Field Data, 2013.

Of all the facilities, it was revealed that 45 (75%) schools had cleaning schedules in place while eight (13%) schools did not have any. On the other hand, the question was not applicable to one (2%) school and there was no response from six (10%) schools.

There were various sources of funding for the hand wash facilities in the schools under investigation. Figure 15, shows found that eight (13%) schools received their funding from the government of which six (10%) schools from the Micro Projects Unit (MPU) and two (3%) schools received theirs from the Zambia Social Investment Fund (ZAMSIF). Moreover, 48 (80%) schools received their support from NGOs and the community while four (7%) schools, did not indicate the source of their support for the hand wash facilities.



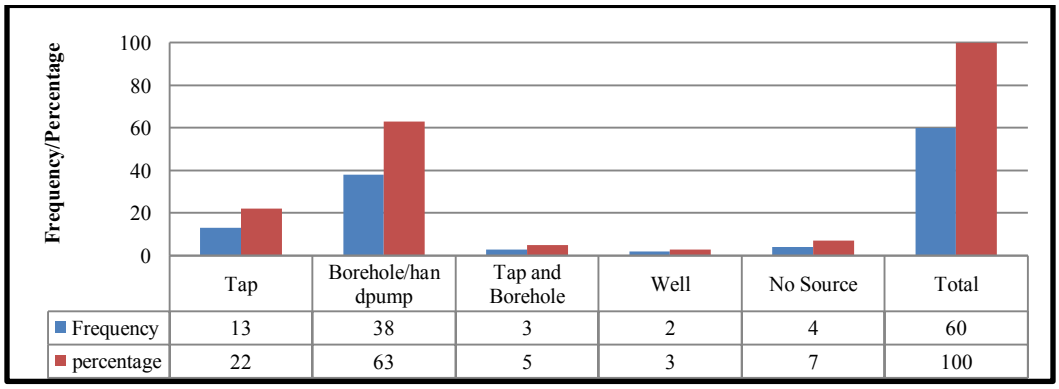
	Micro projects Unit	Zambia Social Investment Fund	NGOs/Community	NON RESPONSE	Total
Frequency	6	2	48	4	60
Percent	10	3	80	7	100

Figure 15: Source of funding for hand wash facilities. Source: Field Data, 2013.

5.7 School water supply

The study found that 55 (92%) schools had sources of water while five (8%) schools did not have any water source. Figure 16, shows that there were various types of water sources in schools. Of all the schools, 13 (22%) schools had tap water from the District Water utility company (SWASCO), 38 (63%) schools had boreholes or handpumps without taps, three (5%) schools had boreholes with taps

and two schools depended on wells as their source of water. However, four (7%) schools did not have sources of water of any kind within their grounds.



	Tap	Borehole/handpump	Tap and Borehole	Well	No Source	Total
Frequency	13	38	3	2	4	60
percentage	22	63	5	3	7	100

Figure 16: Types of water sources in schools. Source: Field Data, 2013.

As stressed above, some of the sources of water that were found in schools were hand pumps (Figure 17a), water wells (Figure 17b) and the taps of piped water (Figure 17c).

(a) **(b)** **(c)**

Figure 17: Photographs showing (a) Hand pump, (b) Water Well and (c) Tap water. Source: Field Data, 2013.

Moreover, the study found out that 51 (85%) schools had regular supply with water running either throughout the day or at specific time of the day when water was supplied. Seven (12%) schools had irregular water supply. On the other hand, one (2%) school did not respond to the question and one (2%) school indicated

that the question was not applicable to the school because it didn't have any water source.

With reference to water management in schools, the study found that 51 (85%) schools had people that were responsible for the management of water. Four (7%) schools reported that they did not have responsible officers while four (7%) schools did not give any response. However, the question was not applicable to one (2%) school as it had no water source. Moreover, the study revealed that 43 (72%) schools shared their water facilities with the surrounding community. About 13 (22%) schools did not share their facilities with the community while four (6%) schools did not respond to the question.

Furthermore, the study revealed that there were various sources of funding for the construction of the water sources in schools. Figure 18 shows that for 34 (57%) schools, funds were received from NGOs, 15 (25%) schools from MPU and in eight (13%) schools the funds came from ZAMSIF. However, 3 (5%) schools did not know the source.

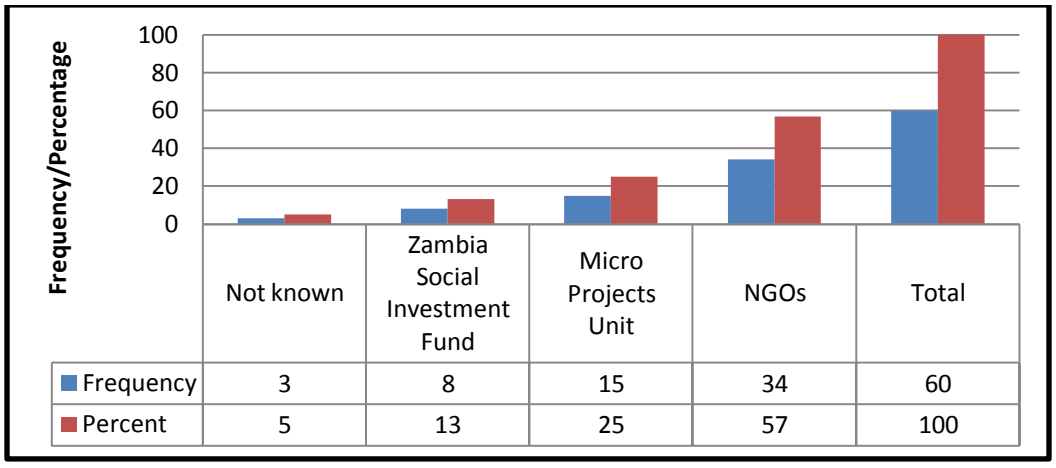


Figure 18: Sources of funding for the water facilities available in schools. Source: Field Data, 2013.

Regarding maintenance and repair works, the study revealed that schools received no funds directly from the Ministry of Education or the DEBS. However, some of them used part of the grants from the government such as National Implementation Framework (NIF). In most cases school funds were raised from

the school fees and Parents Teachers Associations (PTA). Others used contributions by users, community contributions and from the members of staff which included teachers and auxiliary staff while others used the user charges paid by the beneficiaries of the facilities. On the other hand, in case of the private schools, it was the responsibility of the owners of the schools.

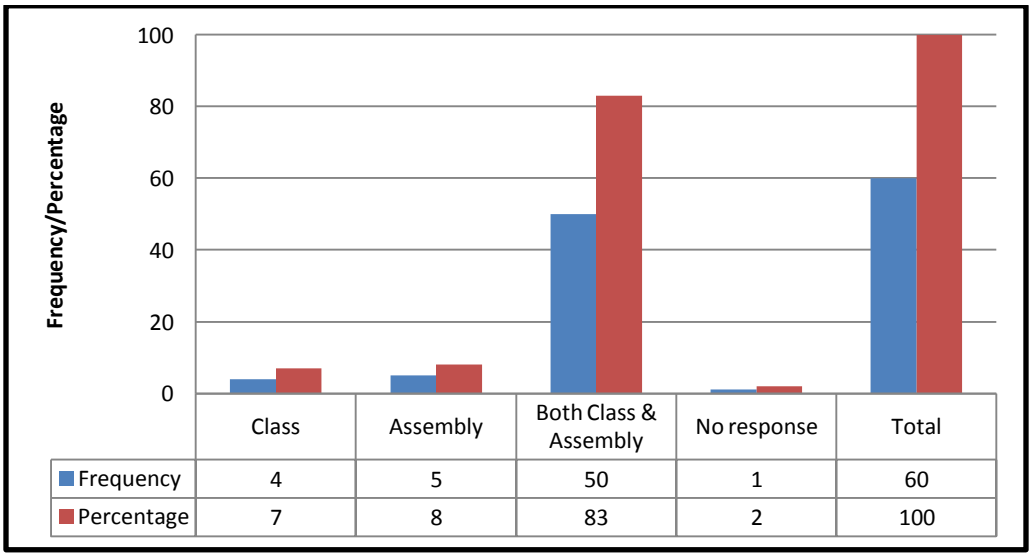
5.8 Hygiene education

The schools' response on hygiene education in the district was positive. The study found that hygiene education took place in the 58 (97%) schools and only two (3%) schools indicated that they did not offer hygiene education. Moreover, 57 (95%) schools revealed that hygiene education was part of the MESVTEE school curriculum and only three (5%) schools said that there was no hygiene education in the curriculum. It was also revealed that a lot of different teaching aids for hygiene in the schools that participated were used. The most used aids were textbooks. Others were models, pictures and posters. On the other hand, the study found that 37 (62%) schools had health clubs which helped with advocacy through which hygiene education was taught. However, 16 (27%) schools did not have health clubs and seven schools did not respond.

In addition, the study learnt that a lot of teachers were involved in ensuring that pupils kept high levels of hygiene. These included all the teachers with varying responsibilities such as the Headmaster, Deputy Headmaster, class teachers, guidance teachers, hostel patrons and matrons, teachers on duty, preventive and maintenance leader and pupils themselves. Only one school reported that it had a sanitary officer who maintained cleanliness in the schools as shown in Figure 19.

Figure 19: School Sanitary Officer in front of a drain at St. Mulumba Basic School. Source: Field Data, 2013.

It was further reported that 59 (98%) schools held discussions on hygiene with the pupils and only one (2%) school did not. These schools had different times for such meetings. As shown in Figure 20 below, 50 (83%) schools discussed hygiene issues with pupils during both class and school assembly time. Five (8%) schools held discussions during assembly time, four (7%) schools had theirs during class time only and one (2%) school did not respond.



	Class	Assembly	Both Class & Assembly	No response	Total
Frequency	4	5	50	1	60
Percentage	7	8	83	2	100

Figure 20: Frequency of schools' discussion of hygiene with pupils in schools. Source: Field Data, 2013.

5.9 Waste Disposal

There were basically three options or ways through which schools disposed the wastes generated. They either put the wastes mainly paper in the rubbish pits or bins and then burnt or buried when they were full or dropped in the pit latrines. While the menstrual wastes (sanitary pads) were put in the pit latrines. Figure 21 shows the different ways through which schools disposed their waste.

Figure 21: Photographs showing (a) Open pit, (b) Filled bin and (c) Pit latrine. Source: Field Data, 2013.

5.10 Schools Recommendations

The schools in the study submitted the following recommendations for water, sanitation and hygiene (WASH) programme in schools;

- In the schools where WASH has existed before it should be revamped while where it was not introduced, it should be introduced quickly.
- Conduct more sensitization on WASH to the communities where children came from.
- The D-WASHE office to regularly train teachers or hold workshops on WASH in schools.
- Change and improve the curriculum so as to include WASH in order to strengthen teaching of pupils on hygiene habits.
- Government to build more sanitation and water facilities in schools to be built particularly those in the rural areas.

- Government to create routine and steady funding for providing WASH facilities in schools.
- Conduct routine monitoring and evaluations of WASH activities in schools by the MESVTEE inspectors.
- Each school should post guidelines on maintenance and utilization of water sources such as Boreholes.
- Introduction of water-borne and VIP toilets in rural schools.
- Ministry of Health and NGOs should assist schools with soap for hand washing purposes and disinfectants.
- Provide concrete hand washing facilities in schools to avoid or reduce blockages, repair and maintenance costs.
- Provide more educational materials and posters about WASH to schools so that WASH information could easily be spread.
- Conduct regular sensitization of WASH by WASH in schools partners (NGOs).
- Create and introduce school WASH prize as it would encourage schools to increase their efforts on WASH.
- Conduct training of pupils in WASH activities as they are directly affected in a school system.

5.11 Role of Government in Implementing WASH

In order to understand the role of the government in the implementation of water, sanitation and hygiene in schools, interviews were conducted with the Choma District Education Board (DEBS' office) and the Ministry of Local Government and Housing (MLGH) officials.

In order to understand the role of the Local Council in the implementation of WASH in Schools, an interview was conducted with the District coordinator for the Rural Water, Supply and Sanitation and the District Planning Officer as the leaders of D-WASHE. The interview revealed that the current Local Government Act mandated Local Authorities in the country Choma Local Authority included

to provide water and sanitation in general to both urban and rural areas of the district. Since school WASH is for both urban and rural areas, the authority also had interest.

The local authority did not work directly with the schools but co-opted them through the Ministry of Education in the promotion of School WASH in the district. As a partner institution in the district, the council lobbied for funds from donors and the government. The institution thus did not fund any school WASH activities. In various areas of the district, schools worked with the Village Water, Sanitation and Hygiene Education (V-WASHE) committees. Membership of schools to the local council was directly through the council's collaboration with the DEBS.

On the other hand, the interview with the Choma DEBS' management officials (Planning Officers) revealed that School WASH programme was a new programme for the schools and that it was initiated by UNICEF in 2010. The District did not work in isolation in its implementation hence the major partner for the entire education sector in the province and Choma District and School WASH in particular was UNICEF. However, the district did not receive any funds directly from UNICEF but grants from the Ministry of Education headquarters. Thus in its own capacity, the DEBS did not fund any school. Its role therefore was supervision and monitoring of the implementation of the programme in schools. For all the grants, schools were expected to distribute the funds as outlined in schools budget form (Table 3).

Table 3: Template of the Choma District Schools budget form.

School:						
Funding type (GRZ/NIF):						
Allocation:						
Quarter:						
Year:						
S/n	**Programme**		**Item description**	**Qty**	**Unit Price**	**Total amount**
1.	General Administration (15%)					
2.	Infrastructure (40%)	Rehabilitation (80%)				
		Maintenance (20%)				
3.	Equity (15%)	Gender and OVC Activities (22%)				
		SHN Activities (27%)				
		HIV Activities (30%)				
		CSEN Activities (21%)				
4.	Curriculum Development and Education Materials (30%)					
TOTAL						
GRAND TOTAL						
Percentage variation (adjustment) allowed per programme is **plus/minus 10%**						

Source: MESVTEE (2013)

WASH related activities were thus expected to be part of equity which was 15% of the total budget for each school and specifically under SHN activities which would be 27% of the allocation for equity.

Further findings showed that UNICEF had few schools where it funded directly through the construction of WASH facilities such as latrines, urinals and hand washing facilities. However, together with UNICEF, the DEBS conducted regular workshops on WASH related activities. UNICEF also helped the district with training manuals on WASH related activities.

5.12 Pupils' and Teachers' responses

All the Focus Group Discussions were conducted at Masuku Secondary School. The male and female teachers were divided into two groups, while the third group was composed of pupils. Each group had a minimum of six participants.

The study revealed that pupils were not aware of the existence of the School WASH programme in their school. Their knowledge on WASH issues was based on their participation in Preventive Maintenance Systems (PMS) that existed in their school and that they were mandated to participate in it. They further said that the other way they learnt about WASH issues was from the administration's encouragement for high levels of cleanliness during school assemblies. As such they revealed that most of the surroundings were generally well maintained except that there was congestion for toilet facilities, poor water supply and lack of hand wash facilities. They therefore participated in the WASH related activities by taking part in PMS, regular cleaning of toilets, ablutions and the surroundings of the school.

The discussion with the male teachers revealed that teachers did not know the existence of school WASH programme at Masuku Secondary School and Choma district but they were aware of the SHN programme. Despite that, they highlighted the importance of issues of water, sanitation and hygiene in schools to the learners. They said that the major challenges at Masuku Secondary School were the poor and unreliable water sources which mainly were boreholes and hand pumps, unbalanced pupil to toilet ratio and lack of funds to procure facilities like hand WASH facilities. The safety of water from the boreholes was not monitored, guaranteed and due to over enrolment there was over abstraction of water. As a result, during the dry season, there is usually less water from the boreholes and water appeared brown in colour. They also revealed that the funding school received from the government, was not enough hence focusing mainly on school administration and classrooms thereby overlooking WASH activities.

It was further revealed that it was mandatory for teachers to participate in issues of hygiene and health among pupils in the school. Each teacher had an area in the school which they surpervised during the preventive maintenance system days. On this day, teachers in their respective areas of operation, worked with the assigned pupils to clean the surroundings. They also participated through the school's regular assemblies by sharing sanitation and hygiene issues, sharing knowledge in class, participation in the general administration of the school as Masters on Duty for particular periods of time and in the inspections of hostels for the pupils.

On the other hand, discussion with female teachers revealed that participants were not aware of School WASH programme but were quite aware of the SHN programme which they said was just on paper. The participants were of the view that female pupils faced more challenges than boys in the school due to their nature. Poor pupil/toilet ratio was identified as the major problem for the girls. Some of the challenges identified included poor location of water sources which were far from the girls' hostels. As such, girls could not use the water sources at night as they feared to be attacked. Others included the lack of hand wash facilities and sanitary pads. Lack of sanitary pads in the school made pupils use pieces of cloth which were not safe as they could not hold the menstrual hence staying away from class during their time for menstruation. In many cases, teachers helped girls with their own facilities through their role as matrons.

Like their male counterparts, female teachers revealed that it was mandatory for teachers to participate in issues of hygiene and health among pupils in the schools. Each teacher had a portion of an area in the school which they supervised during the preventive maintenance system day. During this day, teachers in their respective areas of operation, worked with the assigned pupils to clean the surrounding. They also participated through the school's regular assemblies by sharing sanitation and hygiene issues, sharing knowledge in class, participation in the general administration of the schools as Masters on Duty for particular periods of time and in the inspections of hostels for the pupils.

Overall, the findings from the questionnaires, interviews, focus group discussions and observation established that despite School WASH programme being acknowledged at the Ministry level, there was no evidence of its existence in some schools in the District under study. It was not yet in schools and implementation of related activities depended on the SHN policy and its guidelines. As regards the roles in the implementation process, the government played the major role of policy formulation, monitoring and supervision but very little funds were committed towards the implementation of the programme. A number of challenges such as financial constraints, lack of trained personnel and dilapidated and inadequate facilities outweighed the benefits of the allocated funds for the programme hence underperformance of the SHN policy.

The following chapter discusses the results in relation to the objectives and also relates them to other similar studies that have been done within and outside Zambia.

CHAPTER SIX: DISCUSSION OF FINDINGS

6.1 Data Interpretation

Quantitative data was interpreted by use of graphs with frequencies and percentages while for qualitative data, categories and themes were considered and interpreted accordingly.

6.2 Evaluation

Evaluation of the study was made by making use of the findings (both quantitative and qualitative) and observed WASH aspects in relation with the existing guidelines for the establishment of WASH in schools. Based on the roles of the government and the set guidelines; the study determined and established benefits received and evaluated performance of the SHN policy in schools in the implementation process.

6.3 Schools in Choma District

Choma District has three types of schools namely Primary, Basic and Secondary schools. Most of them were managed by the government and very few were Community, Grant-Aided and Private schools. Moreover, most of them were primary and basic schools and widely spread across the district. Choma being largely a rural district, most of the schools were located in the rural areas and a larger proportion was far from the Central Business District (CBD). This entails that clients of most of these schools were rural people and mostly peasants with limited sources of income thereby limiting their participation in the school related activities.

The above background requires that the government takes the leading role in policy formulation, execution and support towards School WASH activities as most of the schools depended on its support. This means that the government ought to formulate and enact regulations and policies for the entire education sector in the country. This is consistent with the view of UNICEF (2012) that WASH interventions in schools worldwide aim for government policies. It is in

this context that the government being the major stakeholder in the education sector takes the leading role in the implementation of the programme.

6.4 Pupil enrolment

According to AusAID (2012), pupil enrolment in Zambian schools of which Choma is not exception, has been on the rise while the supporting infrastructure has remained the same. Shatunka (2009), reports that free primary education policy (Grades 1-7) was introduced to Zambian schools in 2002. Since then no pupil at grades 1-7 was levied any user fees including PTA levies. Similarly no child ought to be denied enrolment or excluded from school for failure to contribute to PTA fund raising activities and others (MOE, Circular No. 3, 2002). As a result primary school enrollment increased by over 60%. However, this policy does not support infrastructure development and sustainability as it is concerned with being able to accommodate the enrolled children neglecting the critical role played by WASH facilities.

The teachers - pupils' ratio varied from one school to the other and from one locality of the district to the other. There was an imbalance between the rural and urban schools with urban schools having more teachers than the rural schools. In most urban schools, the ratio averaged 1:18 while in rural schools it was as high as 1:68. Rural schools had fewer teachers and in selected cases, schools did not have female teachers at all. This situation affects the implementation of school WASH programme which needs the availability of both the male and female teachers for its successful execution in schools. The few and lack of female teachers in schools to whom girls could confide in about their sexuality, reduces attention towards the girl child in Choma schools and this eventually increases girls absenteeism especially during their menstruation period.

6.5 General WASH in Schools

This study revealed that School WASH programme was in existence in Choma District, but, it was not yet fully operational in Choma schools. Very few schools

implemented the WASH programme and most of them implemented the SHN prorgramme as instructed by the government. School WASH programme in Choma district was therefore not implemented by the government but it was a parallel programme supported by the cooperating partners and NGOs which included UNICEF and World Vision (WV) operating in selected schools. Even then, it was not fully implemented as school WASH but community WASH with very little involvement in the schools existing in the hosting chiefdoms. This agrees with UNICEF (2006) that there is a misunderstanding between the School WASH and SHN programmes both at school and management level as some schools looked at the two programmes as the same when in actual framework, they are different. After the formulation of the SHN policy in 2006, all the government schools have been mandated to follow the SHN programme.

The guiding principle of the SHN policy which was the underlying guideline in the implementation of School WASH is accepting and believing that optimum health and nutritional status of children is a determining factor for their effective learning in school (MOE, 2006). The success of the programme in Choma District was entirely dependent on the government as the coorperating partners just supported the implementation of the programme in selected schools. They focused on particular activities in the implementation process such as the hardware component (construction of latrines, boreholes as water sources, hand wash facilities or sanitation) and the software component (hygiene behaviour sensitization) in selected schools.

Generally, schools in Choma district had WASH related committees in place. This shows that even if the programme was not yet in schools, related activities took place. Despite that, 38% of the schools revealed that they did not have any WASH related committees in place. This means that there was a back log of schools that did not have systematic programme for the management of WASH activities. They may either not have been taken serious or were haphazard without well spelt out goals and responsibility establishment with rural schools being affected more.

Similarly, the study revealed that 57% of the schools had schedules of the meetings on WASH related activities. This is encouraging but more needed to be done considering the extent of the district. On the other hand, 38% of the schools did not have schedules. This implies that there was nothing that compelled schools to hold meetings and hence no record of such activities was expected to be found in schools. For those that did, most of them only met when there was need to do so or a crisis. Holding of such meetings was dependent on the judgment of the schools' administrators in the system. It is in this sense that WASH activities in schools were overlooked as they appeared to be mere routine activities in the school system with limited impact on the well being of children.

Arising from above, most of the WASH activities in schools focused on hand wash maintenance and advocacy of good sanitation and hygiene among pupils. The choice of these two activities may be attributed to the fact that they were the cheapest and easiest to acquire and implement. Activities such as maintenance of toilets/latrines and provision of safe drinking water received little attention as they attracted a lot of costs and hence schools could not manage. The schools' participation in the maintenance and construction of water points and latrines was based on the occurrence of emergencies such as collapse of latrines or breakdown of boreholes. This can be attributed to lack of funds by the schools as they did not have income generating activities and that most of them were far from the business houses that opted to support schools that were in town and near the Central Business District (CBD). This tendency therefore made rural schools which were the majority in the district not have extra sources of funding apart from the PTA, government and NGOs. The regular grants from the government were usually small and had guidelines on how they were spent. Moreover, most schools did not have the means to raise funds as user fees were abolished through the free education policy at primary school level making implementation of WASH activities in various schools was a farfetched idea.

In addition, very few schools had trained personnel as sanitary officers. For those that had sanitary workers, most of them were untrained cleaners or office

orderlies that were used as sanitary workers and were mainly found in urban schools and non in rural schools. Even among urban schools it was mostly the private schools and secondary schools that had sanitary workers. In the absence of skilled employed staff, pupils were responsible for sanitary work in schools. This exposed the lives of pupils to risks of contracting diseases which would eventually slow and delay the implementation of the programme and ultimately having delayed results.

Despite the lack of skilled personnel for cleaning purposes, individual schools' administration was an important element in the implementation of WASH activities in schools. The study revealed that in 67% of the schools, the administration had key roles in the implementation of various WASH activities. These roles varied from provision of funds, materials, allocation of time for meetings, monitoring, lobbying for community participation and the provision of funds. Since schools had difficulties in raising funds, the community was a reliable partner. However, not all schools benefited from the community's participation. This study revealed that only 48% of the schools benefited in various ways. In this regard, communities provided materials which included building materials like Pan Bricks for the construction of latrines, labour during construction and repair of facilities such as latrines and water points and encouraged children to participate whenever schools needed their participation in WASH related activities. However, some schools did not do well and lacked community participation as the community shunned such schools due to poor schools' rapport with them. The community felt detached from the schools hence not taking part in the implementation of various WASH activities.

6.6 The Role of the Government

Various institutions and stakeholders who had different roles participated in the implementation of WASH in Schools programme in Choma District. This saw the participation of several government line ministries with particular interests. Of great importance were the Ministry of Education, Science and Vocational

Training and Early Education (MESVTEE), Ministry of Health (MoH) and Ministry of Local Government and Housing (MLGH). MESVTEE is the mother of the programme and was responsible for the planning, coordination and monitoring of hygiene promotion and the construction of WASH related facilities such as school toilets. In other words it can be argued that Choma DEBS did not have any capacity to fund any school but supervised and monitored schools for the implementation of WASH related activities through SHN programme.

MESVTEE was also responsible for the distribution of regular grants from the government to individual schools. It must be noted that at this stage, the DEBS monitored and supervised the distribution and use of funds to schools. Despite the positive action at this level, among the distributed funds, the allocation for SHN (WASH related activities) was very insignificant as on average each school received K30 (USD5.00) per quarter of the year. The allocation was not just insignificant but insufficient for the successful implementation of WASH activities in schools.

On the other hand, GRZ (2009) and the findings of this study agree that MLGH was responsible for the overall planning, monitoring, setting of technical standards related to household toilets and other household sanitation products. While at the district level the implementation and monitoring of sanitation and hygiene at household level was the responsibility of the Choma District Council. Like other districts in the country, Choma District had a Rural Water Supply and Sanitation programme (RWSS) focal point person who was eventually the coordinator of D-WASHE. Through this programme, the Local Government Act mandated the local authority to provide water and sanitation in general to both rural and urban areas. However, the local authority did not work directly with the schools but indirectly through its collaboration with the DEBS. It had various Village Water, Sanitation and Hygiene Education (V-WASHE) committees across the district. It is through these committees that the local authority was expected to work with schools as each rural school would be surrounded by some villages and

schools' membership to these committees was directly through the local authority's collaboration with the DEBS.

Despite the well established role of the local council, WASH issues in schools were rarely its concern as much of the activities concerned communities which schools rarely benefited from. According to GRZ (2006b) and CSO (2010), Choma district had a total of 446 villages which found in the following areas: Macha chiefdom had 72 villages, Moyo chiefdom (73 villages), Singani chiefdom (137 villages), Mapanza chiefdom (56 villages) and Hamaundu chiefdom (108 villages). However, this favoured urban schools than rural schools since out of 446 villages that are in the district, only 50 V-WASHE committees existed. As such, most of the rural schools which were the majority were not part of any V-WASHE and did not benefit from such arrangement.

On the other hand, this study revealed that MoH in Choma district was also an active partner in as far as SHN or WASH in schools was concerned. Through the Environmental Health Technologist (EHT) officers at the district level and deployed in Rural Health Centres (RHC), the MoH played a preventive role on the issues of sanitation and hygiene in schools. EHTs were expected to carry out regular tests of water and assessment of the school environments. However, this study agrees with GRZ (2009) that there was a severe shortage of staff at many RHCs and that there were long distances between RHCs and schools in Choma rural. As such, most of the rural schools used untested and untreated ground water and users were not certain of its safety.

In addition, this study revealed that there was a misunderstanding of the roles of the government and the cooperating partners. The latter were not implementers of the programme in schools but supported the implementation process which was the responsibility of the government through MESVTEE. This conflicted with MESVTEE's view that WASH in schools was implemented by NGO's while the government implemented SHN programme. As such through its work, World Vision (WV) also supported by providing logistics which included meeting the

costs for the movements and payment of allowances of people engaged in selected cases in the implementation process.

Nonetheless, it is of great importance to conclude that the government's role was not well executed as it did not meet its obligations such as paying of allowances to the participants in the programme and further cancelled all extra duty allowances hence discouraging participation from the teachers. Essentially there were no incentives from the government for the government employees especially teachers and this contributed to the stagnation and failure of the programme in schools as teachers did not feel appreciated and encouraged to participate fully in the programme implementation.

6.7 Guidelines for Implementation of School WASH

This study revealed that the implementation of WASH in Choma schools was not well coordinated. There were no specific guidelines for the implementation of the programme in schools. The programme relied on the guidelines for the SHN programme which had very little bearing on School WASH. Other than that, it was also based on the guidelines set in National Rural Water Supply and Sanitation Programme (NRWSSP), National Urban Water Supply and Sanitation Programme (NUWSSP) which were spearheaded by MLGH and the 1995 Public Health regulations. However, the regulations did not translate into conditions that prevailed in schools thereby missing the link with school WASH and they were basically on general WASH issues in the society thereby neglecting key issues in schools for the successful implementation of WASH.

In relation to the existence of the School WASH policy in the schools in Choma district, partners in the implementation process in the district operated with the support of NRWSSP. It is with this background that this study concluded that there was no School WASH policy in place but an interim School WASH policy by UNICEF which was also not yet operational and was still in a pipeline. Other than NRWSSP, World Vision made use of its two documents; "Jesus: The source of living water" and the "Teachers' Manual for Water Sanitation and Hygiene

Education" (http://www.wvi.org/cleanwater). Despite functioning towards a common ground, harmonization of the programme was difficult as adherence to specific guidelines was dependent on a particular sponsor in the area.

Furthermore, the findings suggested that there was confusion on the particular guidelines to follow in schools. The MESVTEE recommended ratio of 40 male student per toilet and 25 female students per toilet in schools while the 1995 Public Health Regulations stipulated 1 closet per 10 girls and 1 closet per 20 boys. However, the guidelines for the implementation of SHN programme activities were silent on the specific ratios. This clearly shows that guidelines were not well coordinated and conflicted with each other hence standards may not have been adhered to. As such, Schools could not do any of these because they lacked clear guidelines. This is because these guidelines existed only at the Ministry level. GRZ (2007) outlined the guidelines for the hand basins, water closets and pit-latrine as illustrated in Table 4.

Table 4: Ministry of Education's Guidelines for Implementation of WASH in Schools

Facility	**Requirement**
Latrines (Public Health Regulations)	1. Water closets/seats and pit latrines for girls ✓ 1 closet/seat for every 10 or part of 10 for the first 30 ✓ Four closets or seats for over 30 and 50 ✓ Five closets or seats for over 50 and under 70 pupils ✓ Six closets or seats for over 70 and under 100 2. Water closets or seats and pit latrines for boys ✓ One closet for every 20 or part of 20 for the first 100 Thereafter, one closet or for every 30 or part of 30 pupils
Latrines (MoE)	✓ Boys: 1 Latrine/ 100 pupils √Girls: 1 Latrine/ Next 25
Hand Wash Basins (MoE)	✓ 8 Basins/ 100 pupils ✓ 3 Basins/ Next 50 pupils

Source: GRZ (2007)

However, every school in the district particularly those that received grants from the government only had guidelines on how funds were distributed and it was where SHN activities were budgeted for in the school funds budget form. However, the allocated percentage for such activities was negligible and insufficient such that no meaningful improvements could be made in the implementation of WASH in Choma schools.

6.8 Benefits of Schools from Government support

The WASH facilities in schools in the district had various sources of support for their construction. These included the government, NGOs and the Community. This study revealed that the government's support towards WASH related activities in schools through Zambia Social Investment Fund (ZAMSIF) and Micro Projects Unit (MPU) amounted to 13% of all the facilities. On the other hand, the NGOs together with the Community contributed 80%. Through this, latrines were constructed in various schools and communities who improved sanitation in schools and surrounding communities. Similarly, boreholes were drilled which were shared by both schools and the communities. Others included hand washing facilities and health and hygiene education. Despite this, the support was quite effective in the schools as it was shared with the community. In this context, NGOs' participation was overwhelming more than what the government committed towards the implementation of the programme in the district.

Despite routine funding from the government towards schools through ZAMSIF, MPU and National Implementation Framework (NIF), it can be safely argued that the allocations were limited, insufficient and could not help solve various WASH challenges in schools. This is consistent with UNICEF (2010)'s report that the government's funding towards WASH was insufficient. Nonetheless, most of the schools in the district as earlier alluded to, were government schools. This entails that they also depended on the regular government allocation of funds to schools. Considering the limited support from the government and the fact that it was the

major stakeholder in the programme implementation, School WASH activities were underfunded leading to a lot of challenges making it difficult to appreciate the benefits recorded in schools.

6.9 Performance of the SHN policy

One of the SHN policy objectives was to increase the number of hand washing facilities in schools. This study revealed that there were various types of hand wash facilities in Choma district schools and these included the modern sinks, concrete tank with a tap, plastic bucket with a tap and plastic container (5 litre containers). The modern sinks were limited to the urban schools due to the availability of running water. However, in most of the schools with these facilities, they were not in use because of the irregular supply of water to the schools by the water utility company SWASCO. In this case, schools had various initiatives such as a plastic container with a tap.

Schools that had regular water supply drew it from electric driven boreholes. The major challenge for such schools was the high tariff charges by the Zambia Electricity Supply Company (ZESCO). On the other hand, rural schools mainly had the concrete tank with a tap or plastic bucket with a tap but most of these facilities were not functional as they needed repair as shown in Figure 22a below. This rendered them unusable hence schools were unable to access service. It can be logically concluded that most of the children in rural schools did not wash their hands after using toilets or latrines. Very few schools had initiatives as they emphasized the importance of washing hands after every use of a toilet as depicted in Figure 22b. This was easy and cheap facility as the schools did not meet any cost in their erection. However, it facility was not sustainable and too small for a school population. It therefore had to be filled with water regularly to be able to cater for the large number of school pupils.

Figure 22: Photographs showing (a) Non-functional hand wash facility, and (b) Improvised hand wash facility found in schools. Source: Field Data, 2013.

Moreover, it was revealed that schedules for cleaning the hand wash facilities were available in schools. Most of them were aligned with the general cleaning time for the entire school. However, this activity was quite ordinary as most of the schools did not have necessary apparatus and chemicals for cleaning but merely used water. Despite having various sources of funds for their construction, resources (funds) committed towards them were insufficient hence the facilities were either none operational and needed urgent maintenance and repair or they were not there at all.

On the other hand, this study revealed that 72% of the schools that participated in this study used pit latrines as their toilets and only 28% had flush toilets. This is consistent with USAID (2010) report that of the 9,564 sanitary facilities in schools, 87.5% of them consisted of pit latrines. However, these pit latrines ranged in quality with some schools having high quality latrines while few of them had poor quality as shown in figures 23a (Collapsed latrine), 23b (Make-shift latrine), 23c (Latrine without roof) and 23d (High quality latrine).

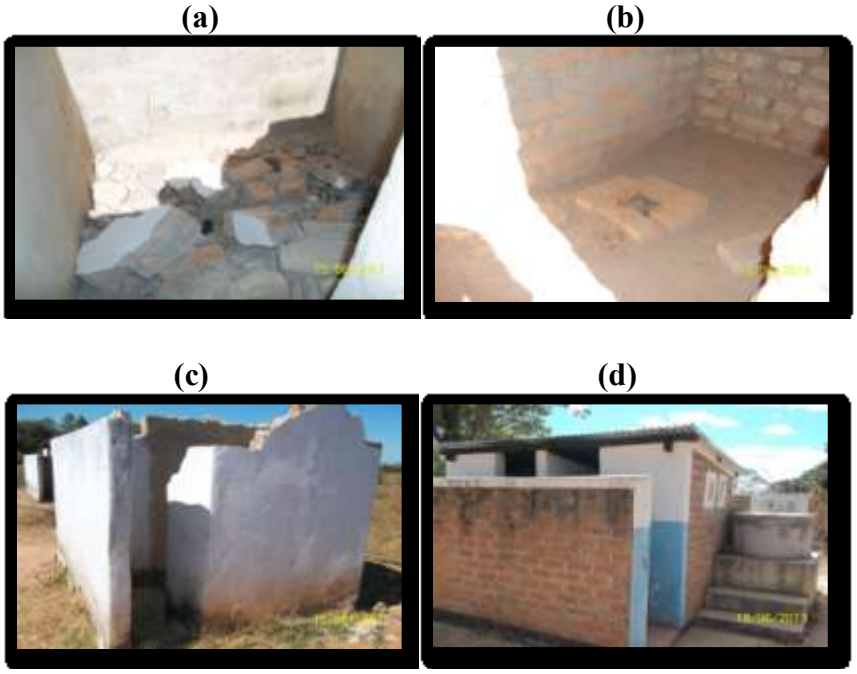


Figure 23: Photographs showing (a) Collapsed latrine, (b) Make-shift latrine, (c) Latrine without roof, and (d) High quality latrine found in schools. Source: Field Data, 2013.

It was further revealed that schools that had high quality toilets as shown in Figure 23d, were supported by the NGOs while for those in Figures 23a, 23b and 23c were community initiatives in various rural schools. This showed the differences in commitment in the workmanship. For those that were supported by the NGOs they were constructed out of durable materials and were properly built. On the other hand, those that were constructed out of community intiative showed little signs of expert knowledge during their construction and cheap materials were also often used. Moreover, some of them did not have roofs fixed, not properly cleaned and in selected schools, latrines almost collapsed. Such facilities put children's lives at risk of accidents in case the latrines collapsed and this was found in government supported schools only. It is in this view that the government supported schools lagged behind in issues regarding WASH hence undermining the intended targets of the SHN policy.

In addition, it was also revealed that 80% of the schools received their funding for the construction and repair of toilets/latrines from the combination of the NGOs and the community while government contributions amounted to 18% only.

Despite the government being responsible for most of these schools, very little was done as regards the provision of safe and adequate sanitation in schools in Choma District. As such, the ever rising school population through enrolment was not matched with the existing infrastructure hence posing both present and future challenges on the successful implementation of the SHN programme and ultimately School WASH programme.

Insufficient funding and the increase in enrolment, significantly affected the pupil - toilet ratios. This study revealed that the general toilet - pupils ratio was One toilet/closet to 61 pupils while for the boys was One toilet/closet to 65 boys and One to 58 for girls. Despite being lower than what AusAID (2012) reported that the country's pupil per toilet ratio was about 90 pupils per toilet, the findings of the study still remain higher than the MESVTEE recommendation of One to 40 pupils for boys and 25 pupils for girls. This pose risks among children which would lead to contraction of diseases such as diarrhoea, dysentry and many others due to congestion in schools with limited WASH facilities thereby defeating the salient components in the implementation of the guidelines of the SHN policy.

Moreover, the life span of these toilet facilities was reduced exposing schools to challenges due to insufficient funds in schools. This scenario calls for the need of the viable maintenance strategies. In this vien, 83% of the schools had the maintenance committees in place which were responsible for the maintenance of the toilets and 95% of the schools also had the cleaning schedules for the toilet facilities. But, it must be noted that since most of the schools did not have sanitary officers, pupils were responsible for the cleaning of the facilities. Cleaning in most of the schools was done once a week and mostly during preventive maintenance and local inspections especially in boarding schools which took place weekly.

In addition, congestion for toilets and poor cleaning behaviours resulted into open defecation as some pupils opted to go to the bush. Girls on the other hand would stay away from school during their menstrual period thereby losing school attendance time. Moreover, the increase in pupil enrolment did not match with the

existing infrastructure thereby adding pressure on the already old infrastructure. This is consistent with UNICEF (2010) that states that there is a bias in infrastructure development towards classroom construction over sanitation facilities in response to the huge numbers of learners still out of school.

On the other hand, research revealed that 95% of the schools in the study area had water sources which included Taps connected from the District water utility company Southern Water and Sanitation Council (SWASCO), boreholes (hand pumps) and shallow wells. The type of a water source for individual schools depended on the location with urban schools having tap water which was more reliable and serviced by SWASCO. It was also tested and treated before it was consumed by residents. In this view, diseases as a result of sanitation and contaminated water such as diarrheoa, dysentery and cholera were minimized. However, rural schools depended on hand pumps and a few shallow wells drilled and dug within the school grounds for their water supply. This was more reliable as water could be drawn any time with unregulated quantities. However, this means that most the rural schools consumed ground water which was not tested to ascertain its quality.

Similarly, during the dry season and drought the amount of water abstracted from the available water sources reduces resulting in water shortages among rural schools. In such periods, school children were forced to walk long distances in search of alternative sources which mostly were nearby villages and streams which also posed health risks to the children and reduced their time for learning. Drought and the dry season lowers the water table as a result water facilities developed a lot of mechanical faults and were eventually abandoned (Figure 24). This attracted a lot of repair costs which most of the schools were not able to offset as they did not have means of raising funds and that the quarterly grants from the government were insufficient and had specific guidelines on how they are spent.

Figure 24: Abandoned hand pump due to lack of water. Source: Field Data, 2013.

Such situations did not only affect schools and children but in most cases the entire communities surrounding them as they depended on the same sources of water as well. The study also revealed various sources for the construction of water facilities with 57% of them coming from the NGOs and 38% from the government. Despite this overwhelming response from the government and NGOs, much of this funding was received only at the inception of the projects while subsequent maintenance costs are entirely dependent on individual schools. As a result, most of the basic schools that did not have any means of raising funds, channeled grants from the government towards repair work. Other than that, some funds were raised from the PTA or community contributions.

As key programme implementers, teachers had several roles in the school systems in the implementation of either SHN or school WASH activities. It is of paramount importance to note that it was mandatory for teachers to participate in issues of hygiene and health among pupils in their respective schools. This study revealed that they participated through school assemblies, sharing knowledge in class and in the general administration as Masters on duty for particular periods of time. This is in line with UNICEF (2009) which is of the view that teachers should monitor the state and use of water, sanitation and hygiene enabling facilities, organize the care and maintenance of facilities. Despite varied roles and being more responsible, they did not possess any form of training in SHN or

School WASH related activities. Together with the poor state of facilities and lack of incentives for their participation in the programme, teachers were less effective in their monitoring, communication, organization, care and maintenance of various WASH related facilities in respective schools. This could be a possible source of some weakness in the successful implementation of the programme in schools.

In addition, the inception of the SHN proramme in schools encouraged the formation of health clubs such as Anti-HIV/AIDS. This study found that very few schools had such clubs and in operation. The failure of clubs in schools was attributed to lack and limited support for the similar activities by individual schools and to a larger extent grants from the government. This scenario has an imprint on the successful implementation of the programme. The poor participation and lack of clubs in schools left a lot of children ignorant of their SHN or WASH duties, obligation and deprived of supposedly benefits and ultimately inhibiting the successful implementation of the programme.

In relation to schools advocacy on WASH issues, Choma District schools had various ways in which they sensitized the pupils and notable among them were through Class and School Assembly. However, these methods had challenges too as they were time bound thereby having little emphasis towards pupils' need to change and improve their behaviours towards good sanitation and hygiene attitudes. Pupils' knowledge and attitudes towards health environment was evident in that despite the availability of disposal facilities, litter was found uncollected around school's grounds. Mostly the collected litter was burnt thereby increasing the challenges of air pollution. In this context, despite the existence of the legal framework for disposal of solid waste and waste water, the policy is ineffective as it does not clearly state the best and convenient ways of disposing waste.

As a result, none of the schools followed the guidelines as most of them either buried or burnt the wastes they generated which was against the SHN

implementation guidelines for good and adequate, refuse disposal systems and to guard against sources of pollution. Despite that, no appropriate measures have been taken by the appropriate institutions such as the Local Council in ensuring that schools complied with the waste disposal measures. In conclusion, this study is of the view that there were a lot of challenges schools faced in the implementation process of the SHN programme. This is consistent with UNICEF (2010)'s report that identified various challenges which included lack of resources (funds) for new structures, repairs and maintenance.

6.10 Extent to which research objectives have been addressed

The respondents were able to give relevant information with regards to the research questions. It was guided by four objectives. Firstly the research sought to determine the role of the Zambian government in implementation of WASH in schools in Choma District. This was addressed in Chapter 2 section 2.5 and 2.8, Chapter 5 section 5.9 and Chapter 6 section 6.4. The sections outlined the roles of the government which included policy formulation, monitoring and supervision of the implementation process, provision of funds and construction of additional adequate infrastructure for the implementation process. But there was no School WASH policy in Choma District to guide the implementation of the programme.

In the same vein, the research sought to establish guidelines for the implementation of School WASH programme. The research question was addressed in Chapter 2 sections 2.6 and 2.7 and Chapter 6 section 6.5. As such, there were no guidelines specifically for the implementation of School WASH programme but the SHN programme and general sanitation although schools were not aware of them but the DEBS was aware of the existence of WASH programme.

The third objective was addressed in the sense that respondents for questionnaires, in-depth interviews and focus group discussions were able to explore the various challenges schools faced which outweighed the benefits realized. Schools received inadequate and insufficient funds for the various WASH related

activities in schools. As such schools were characterized by dilapidated or lack of WASH facilities. This was addressed in Chapter 2 sections 2.4 where the importance of the programme was discussed, 2.7 and Chapter 5 scection 5.10 where despite the various benefits, the programme coverage was still poor and section 2.8 where despite funds being allocated for the construction of new schools, and old schools were not catered for hence remained without adequate water and sanitation. Consequently, it was found as discussed in section 6.6 that the government contributed very little support of about 13% whereas the NGOs and other partners contributed 80% towards the success of WASH programme in schools.

Finally, this study sought to establish the performance of SHN policy in schools. Despite the existence of the policy in schools, very little has changed. As presented in Chapter 5 sections 5.4, 5.5, 5.6, 5.9 and 5.10, insufficient funds, inadequate and lack of facilities were reported. This was further discussed in section 6.7 where a lot of challenges were highlighted and that in some schools the programme completely failed.

CHAPTER SEVEN: SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Summary

The study evaluated the implementation of school WASH programme in Choma district. Realizing the existing gaps in the implementation of WASH programme in schools, the study determined the role of the government, established the existing WASH related policy and guidelines which are followed in the implementation process. It also determined benefits schools recorded from various forms of government support and finally established the performance of the SHN policy in the implementation of WASH related activities. In order to achieve the objectives of this study, stratified random sampling method was employed to arrive at the specific schools that were investigated. As such, 60 schools participated in this study. On the other hand, purposive sampling was used for the key informants. The study thus involved questionnaire survey for the schools, interviews with key informants, focus group discussions with teachers and pupils and observations.

As part of the findings of the study, most of the schools that participated in this study were government schools. This gave the government absolute control on the schools and policy implementation in these schools as opposed to a situation where such service was be under private hands hence schools followed the SHN programme policy. Nonetheless there was no clear school WASH policy in existence with very little benefits recorded from the government support. Finally, the SHN programme has a lot of challenges mainly due to insufficient funds committed towards the programme. As such, the provision of education in Choma concentrated on buildings to accommodate pupils neglecting issues of WASH.

7.2 Conclusion

The success of School WASH programme in Choma District is dependent on the regular grants from the government which include National Implementation

Framework (NIF). Most of the schools are in rural areas and most of their clients are rural dwellers with inadequate sources of income hence failure to adequately support the schools. As a result, schools did not have funds for the implementation of the School WASH programme. In addition, school enrolment across the district has continued to grow with the same old infrastructure hence more pressure. It is thus high in rural schools where it averages 68 pupils per teacher (1:68) meaning that there are fewer teachers in rural schools than urban schools. Schools development therefore has focused so much on the ways to accommodate excess school population as outlined in the 2009 School Infrastructure Operational Plan. The continued rise in school population without clear measures to solve the challenges ultimately threatens the success of water, sanitation and hygiene in schools.

Even if WASH existing in schools, the government implemented the School Health and Nutrition (SHN) programme. The programme focuses on the health and nutrition of children in a school system and all government schools followed it. On the other hand, Non Governmental Organisations (NGOs) which included WV and, United Nations International Children Emergencgy Fund (UNICEF) were not implementers but supported WASH in schools by supporting the government's implementation of the SHN programme. They thus focused on particular activities such as construction of latrines, water sources and did not take full responsibility of the SHN or WASH programme in school. However, there is little material and financial support from the government hence the programme faces a lot of challenges in the implementation process, thereby making various activities of the programme difficult to implement especially among rural schools.

Despite the limited funding towards the programme, MoE had guidelines on how funds to schools were spent and the WASH related activities were supported and guided by the SHN policy. The policy emphasis is on health and nutrition in schools of which the latter was no longer supported in schools and it is limited on the importance of water supply and sanitation. Essentially, there is no WASH policy in Choma and Zambia at large and implementation guidelines for WASH

related activities are only at the Ministry level (DEBS, PEO and headquarters) and none existence in Choma schools. Hence schools were not aware and did not implement any of the guidelines.

In this regard, schools in Choma district had a lot of challenges. These included lack of funds and even when they were available, they were limited hence not being able to record meaningful results. They were also irregularly received by the schools. On the other hand, the lack of trained personnel in WASH activities in schools pose a significant challenge in the implementation of the programme as there wa limited knowledge and guidance. Moreover, the lack of incentives for the SHN focal persons in schools, discouraged participation in the programme. Rural schools in particular had more challenges which included water supply problems as they depended on ground water which was rarely tested for its safety. Most of the water points dried up in the dry season when the water table goes lower in the ground resulting in frequent mechanical faults of hand pumps and boreholes especially among rural schools hence difficult to repair and maintain due to insufficient funding. Thus the operation of the SHN programme policy in the implementation of WASH in Choma District failed to meet it objectives.

It is concluded that school WASH programme in Choma district has no policy framework such that implementation is based on guidelines for SHN programme which is not well implemented. Despite being known at the Ministry level, WASH in Schools is not yet in schools hence schools implement the SHN programme which is also poorly supported. Implementation of School WASH and SHN programmes should go beyond mere knowledge of their existence but succeed in improving the number of facilities in schools

7.3 Recommendations

In order to improve WASH in schools in Choma district, there should be a number of measures put in place to ensure adequate, effective and reliable requisites for the successful implementation of the programme. The following

recommendations were made for improvement of programme implementation in Choma district.

i. As regards establishment of guidelines for the implementation of WASH in Schools, a comprehensive WASH policy in schools should be formulated with fresh and specific targets on water, sanitation and hygiene so as to create a clear roadmap and scale up the implementation of school WASH programme.
ii. The government should increase its funding to the schools and the schools budget form should be revised and increase the percentage allocation towards WASH activities. The current allocation for SHN (27%) under Equity (15%) is very small and cannot help solve current WASH challenges in schools.
iii. The District Education Board Secretary should be conducting regular trainings and workshops on teachers to improve their knowledge and expertise in WASH related issues for their easy and effective participation in their respective schools.
iv. The Ministry of Education infrastructure plan should be revisited and revised to include issues of water, sanitation and hygiene so that the number of schools rather classrooms to be constructed should correspond with the WASH facilities needed with respect to enrolment.
v. Increase collaboration between MoH and MESVTEE through the Environmental Health Technologist in order to carry out regular water tests in rural schools as they depend on ground water from borehole rather handpumps which are not part of the water utility company. This is in order to ascertain the safety of the water used in rural schools
vi. Choma district MLGH should increase the number of V-WASHEs in the district so that more rural schools may be catered for and benefit from the programmes under V-WASHE committees.
vii. Partner institutions which include World Vision and UNICEF should advocate for the government to adopt WASH programme so that all the schools benefit.

REFERENCES

Alexander, K., and Dreibelbis, R. (2012). Research Summary: Results form a School WASH Service Delivery Trial May-November, 2011.

AMCOW (2010). Draft water supply and sanitation in Zambia: Turning finance into services for 2015 and beyond. AMCOW country status overview.

AusAID (2012). Water, sanitation and Hygiene Global programme and Cross-Regional Support: Civil Society WASH funds Design Document. Australian Aid, Addis Ababa.

Bless, C. and Smith, H. C. (1995). Fundamentals of Social Research Methods; An African Perspective. Juta and Company limited, Lusaka.

Bruce, M. (ed) (2012). DFID's programme in Zambia: Fifth Report of session 2010-2013, House of commons, London. Vol 1, 16 July 2012.

CARE (2012). Sustaining and scaling school water, sanitation and hygiene plus community impact.

Carriger, S. C. (2007). Towards Effective Programming for WASH in Schools: A manual on scaling up programmes for water, sanitation and hygiene in schools . Delft: IRC International Water and Sanitation Centre.

Choma District Education Board 2012, Annual Schools Census

Cohen, L. and Manion, L. (1980). Research Methods in Education. Routledge Falmer

CSO (2010). Census of population and Housing: Preliminary Population Figures. Lusaka: Central statistical Office, February 2011.

Dreibelis, R. Greene, L.E., and Freeman, M.C. (2012). Water, sanitation, and primary school attendance: a multi-level assessment of determinants of household- reported absence in Kenya. *International Journal of Educational Development* 33 (5), 457-465

Emory University Center for Global Safe Water, (2009). School Facilities Assessment: Baseline to End of Year 2 Comparisons, Atlanta.

FAO (2004). Strengthening Institutional Capacity in Mitigating HIV/AIDS Impact on the Agricultural Sector: Potential Mitigation Interventions for Choma District, Zambia. FAO, Rome.

Freeman, M. C., Greene, L. E., Dreibelbis, R., Saboori, S., Muga, R., Brumback, B. and Rheingans, R. (2012). 'Assessing the impact of a school-based water treatment, hygiene and sanitation programme on pupil absence in Nyanza Province, Kenya: a cluster-randomized trial.' *American Journal of Tropical Medicine & International Health*, 17: 380–391.

Freund, P., Graybill, E. and Keith, N. (2005). Health and Education working together: A case study of a successful School Health and Nutrition Model. Creative Associates International Inc, Lusaka.

GART (2006). Golden Valley Agricultural Research Trust-Study Site Presentation, Wahara: Batoka-Choma.

GRZ; Public Health Act and Public Health (Drainage and Latrine) Regulations of Zambia, 1995, Laws of Zambia, Vol. 17 (www.parliament.gov.zm)

GRZ (2006a). Fifth National Development Plan. Ministry of Finance and National Planning, Lusaka.

GRZ (2006b). Choma District Situation Analysis-2006. Choma Municipal Council, Choma.

GRZ (2007). National Rural Water Supply and Sanitation Programme. Ministry of Local Government and housing, Lusaka; November 2007.

GRZ (2008). Integrated Water Resources Management and Water Efficiency (IWRM/WE). Volume 1; Main Paper 2007-2030, April 2008, Lusaka.

GRZ (2009). Sanitation and Hygiene component of the National Rural Water Supply and Sanitation Programme (2006-2015). Ministry of Local Government and Housing, Lusaka.

GRZ (2010). National Water Policy 2010. Ministry of Energy and water Development, Lusaka, February 2010.

GRZ (2011). Sixth National Development Plan 2011-2015: Sustained Economic and Poverty Reduction. Ministry of inance and National Planning, Lusaka.

GU (2012). Sectoral Specific Schedules and Guidelines 2012/13: Water and Sanitation Sector. Ministry of Water and Environment, Kampala, May 2012.

http://www.wvi.org/cleanwater

Kaululwe, S. R. (2006). The effects of free education policy in Basic Schools of Ndola and Masaiti District of the Copperbelt Province, Zambia, University of Zambia. Master's thesis, 81-86

Mbilima, K.C. (2008). Water Supply and Sanitation in Zambia: Reform and Regulation, Lusaka, Zambia.

McMahon, S., Winch, P.J., Obure, A.F., Ogutu, E.A., Ochari, I.A., and Rheingans, R. (2011). 'The girl with her period is the one to hang her head' Reflections on menstrual management among schoolgirls in rural Kenya. *BMC Inter Health Hum Rights,* 16:11(1):7.

MoE (2002). Progress Report on the Free Primary Education Grade 1-7 Policy Implementation Assessment: Lusaka, Ministry of Education.

MoE (2006). National School Health and Nutrition policy. Lusaka, March, 2006.

MoE (2012). Choma District 2012 Annual Schools Census Analysis. Choma Education Board Secretary, Choma.

Mooijman, A., Snel, M., Ganguly, S., Shordt, K. (2010). Strengthening Water, Sanitation and Hygiene in Schools – A WASH guidance manual with a focus on South Asia. IRC International Water and Sanitation Centre, The Hague.

Nagpal, T. (2010). Clean start: Focussing on school water, sanitation and hygiene: A reflection from GWC. Global water challenge, Washington.

NWASCO (2012). Urban and Peri-Urban water supply and sanitation sector report 2011/2012. National Water Supply and Sanitation Council, Lusaka.

Nyambe, I. A. and Feilberg, M (2009). Zambia- National Water Resources Report for WWDR3 (Water in a changing world), June 2009.

Saboori, S., Mwaki, A., Porter, S., Okech, B., Freeman, M.C., and Rheingans, R.D. (2011). 'Sustaining school hand washing and water treatment programmes: lessons learned and to be learned'. *Waterlines* (30)4: 298-311.

Saboori, S., Mwaki, A., and Rheingans, R.D. (2010). Is Soapy water a viable solution for hand washing in schools? (2010), *Waterlines,* 29(4), 329-336.

Shatunka, M. (2009). Linking Quality Water Sanitation Services in Schools to Quality education in Zambia. SNV Netherlands Development Organisation.

Tobin, J. V. and Koppen, V. P. (2005) Water, Sanitation and Hygiene Education for Schools: Roundtable Proceedings and Framework for Action. United Nations International Children Emergency Fund, Oxford.

UNDP (2002). Handbook on Monitoring and Evaluation for Results. United Nations Development Programme, New York.

UNESCO (2006). Water: A shared responsibility. United Nations Educational, Scientific and Cultural Organisation, New York.

UNICEF (2006). Assessment of the school sanitation and hygiene Education programme in Katete and Petauke district of Eastern province and Monze, Sinazongwe and Mazabuka districts of Southern Pronvince.

UNICEF (2008). Progress on drinking water and sanitation special focus on sanitation. United Nations International Children Educational Fund, Nairobi.

UNICEF (2009). Child-Friendly schools: Emerging Practice in Eastern and Southern Africa. A human rights based approach. United Nations International Children Education Fund, Nairobi.

UNICEF (2010). Water, Sanitation and Hygiene Annual Report 2010. United Nations International Children Education Fund, New York.

UNICEF (2011). WASH in Schools Monitoring Package. United Nations International Childrens Fund.

UNICEF (2012). Water, sanitation and hygiene (WASH) in schools: A companion to the child friendly schools manual. United Nations International Children Education Fund, New York.

UNICEF/IRC (2005). Water, Sanitation and Hygiene Education for Schools, Roundtable Meeting Roundtable Proceedings and Framework for Action, Oxford, 24-26 January 2005.

USAID (2010). USAID-Zambia country Development cooperation Strategy 2011-2015. United States Aid, Lusaka.

WaterAid (2010). Draft waterAid Zambia country strategy- 2011-2015.

World Vision (2009). Water, Sanitation and Hygiene. World Vision, Washington DC.

APPENDIX I: LIST OF SCHOOLS IN CHOMA DISTRICT EDUCATION BOARD

1. HIGH SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	BATOKA HIGH	40086	SIMACHECHE	CHOMA CENTRAL	BATOKA	30	2009
2	CHOMA	CHOMA DAY HIGH	1091	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	2	1948
3	CHOMA	CHUUNDU HIGH	5093	KALUNDANA	CHOMA CENTRAL	CHOMA 'A'	1	2005
4	CHOMA	JEMBO HIGH	5095	HAMAUNDU	PEMBA	HAMAUNDU	82	1933
5	CHOMA	NDONDI HIGH	40085	NACHIBANGA	PEMBA	MOYO 'B'	55	2009
6	CHOMA	PEMBA SECONDARY	5100	PEMBA	PEMBA	PEMBA	65	1974

2. SECONDARY SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	CHOMA SECONDARY	5092	KALUNDANA	CHOMA CENTRAL	CHOMA 'A'	3	1962
2	CHOMA	FRANCES DAVIDSON SEC	5094	MACHA	MBABALA	MACHA	75	1994
3	CHOMA	MACHA GIRLS SECONDARY	5096	MACHA	MBABALA	MACHA	72	1974
4	CHOMA	MASUKU SECONDARY	5097	NAMUSWA	CHOMA CENTRAL	MASUKU	61	1986
5	CHOMA	NJASE GILRS SECONDARY	5099	KALUNDANA	CHOMA CENTRAL	CHOMA 'A'	3	1963
6	CHOMA	SIKALONGO SECONDARY	5101	BATOKA	PEMBA	SIKALONGO	38	1983
7	CHOMA	ST. MARKS SECONDARY	5102	MAPANZA 2	MBABALA	MAPANZA	73	1928

3. PRIVATE HIGH AND SECONDARY

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	MUKASA SEMINARY	5098	KALUNDANA	CHOMA CENTRAL	CHOMA 'A'	2	1966
2	CHOMA	NECT EDUCATION TRUST	14065	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	3	2003

4. UPPER BASIC SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	ADASTRA	1080	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	1	1959
2	CHOMA	BATOKA	1081	BATOKA	PEMBA	BATOKA	33	1967
3	CHOMA	BBOMBO	1082	BATOKA	PEMBA	BATOKA	38	1958
4	CHOMA	BULANDA	1083	HAMAUNDU	PEMBA	PEMBA	75	1946
5	CHOMA	CHAZANGWE	1084	MANG'UNZA	MBABALA	MANG'UNZA	110	1929
6	CHOMA	CHEELO	1085	KASIYA	PEMBA	BATOKA	55	1938
7	CHOMA	CHIBWE	1086	MAPANZA	MBABALA	MAPANZA	74	1956
8	CHOMA	CHILALANTAMBO	1087	CHILALANTAMBO	MBABALA	MAPANZA	65	1957
9	CHOMA	CHILUNDU	1088	KASIYA	PEMBA	PEMBA	54	1948
10	CHOMA	CHIPANDE	1089	BATOKA	PEMBA	SIAKALONGO	21	1989
11	CHOMA	CHISIKILI	1090	MBABALA	MBABALA	MBABALA	45	1938
12	CHOMA	CHOOMPA	1092	HAMAUNDU	PEMBA	HAMAUNDU	88	1905
13	CHOMA	CHUULU	1093	SIASIKABOLE	CHOMA CENTRAL	MASUKU	60	1960
14	CHOMA	DEMU	1094	HAMAUNDU	PEMBA	PEMBA	60	1927
15	CHOMA	HAJAMBA	1098	KAUBA	PEMBA	MOYO B	135	1933
16	CHOMA	HALUMBA	1099	MBABALA	MBABALA	MBABALA	40	1930
17	CHOMA	HAMOONDE	1100	CHILALANTAMBO	MBABALA	MACHA	67	1949
18	CHOMA	JAPI	1104	HAMAUNDU	PEMBA	PEMBA	70	1949
19	CHOMA	JEMBO	1105	HAMAUNDU	PEMBA	HAMAUNDU	82	1933
20	CHOMA	KABANZE	1107	SIMAUBI	MBABALA	MACHA	120	1958

21	CHOMA	KABIMBA	1108	KABIMBA	MBABALA	MACHA	70	1959
22	CHOMA	KAKUBA	1110	MAAMBO	PEMBA	HAMAUNDU	108	1920
23	CHOMA	KANCHOMBA	1111	HAMAUNDU	PEMBA	HAMAUNDU	100	1921
24	CHOMA	KASIKILI	1113	MAAMBO	PEMBA	HAMAUNDU	103	1926
25	CHOMA	KASIYA	1114	KASIYA	PEMBA	KASIYA	71	1937
26	CHOMA	KASYONGO	1115	NACHIBANGA	PEMBA	BATOKA	49	1948
27	CHOMA	KAUBA	1116	KAUBA	PEMBA	MOYO A	80	1937
28	CHOMA	LUGWALO	1118	MANG'UNZA	MBABALA	MANG'UNZA	125	1944
29	CHOMA	MAAMBO	1120	MAAMBO	PEMBA	HAMAUNDU	113	1946
30	CHOMA	MAANDA	1121	MAPANZA	MBABALA	MAPANZA	75	1939
31	CHOMA	MACHA CENTRAL	1123	MACHA	MBABALA	MACHA	74	1959
32	CHOMA	MACHA MISSION	1124	MACHA	MBABALA	MACHA	78	1930
33	CHOMA	MALINDI	1127	MAPANZA	MBABALA	MAPANZA	84	1960
34	CHOMA	MALUMA	1128	BATOKA	PEMBA	BATOKA	38	1948
35	CHOMA	MANDALA	1129	MBABALA	MBABALA	MBABALA	42	1936
36	CHOMA	MANG'UNZA	1130	MANG'UNZA	MBABALA	MANG'UNZA	95	1950
37	CHOMA	MAPANZA	1131	MAPANZA	MBABALA	MAPANZA	75	1932
38	CHOMA	MASONSA	1132	MAPANZA	MBABALA	MAPANZA	77	1935
39	CHOMA	MASOPO	1133	BATOKA	PEMBA	CHOMA 'A'	25	1957
40	CHOMA	MASUKU MINE	1134	NAMUSWA	CHOMA CENTRAL	MASUKU B	78	1982
41	CHOMA	MAUKA	1137	MANG'UNZA	MBABALA	MANG'UNZA	105	1960
42	CHOMA	MAYASANINO	1138	MAAMBO	PEMBA	HAMAUNDU	130	1988
43	CHOMA	MAYOBO	1139	SIMAUBI	MBABALA	MAPANZA	125	1967
44	CHOMA	MBABALA	1140	MBABALA	MBABALA	MBABALA	30	1959
45	CHOMA	MBOOLE	1141	BATOKA	PEMBA	BATOKA	50	1931
46	CHOMA	MPINDA	1145	SIMAUBI	MBABALA	MAPANZA	90	1962
47	CHOMA	MUCHENJE	1146	NAMUSWA	CHOMA CENTRAL	MASUKU B	64	1954
48	CHOMA	MUFUNGU	1148	NACHIBANGA	PEMBA	MOYO A	65	1931
49	CHOMA	MUNTUWABULONGO	1150	NACHIBANGA	PEMBA	MOYO A	62	1942

50	CHOMA	MUNYAMA	1151	KASIYA	PEMBA	KASIYA	88	1964
51	CHOMA	MUNYONA	1152	MAAMBO	PEMBA	HAMAUNDU	102	1931
52	CHOMA	MUTANDALIKE	1153	NAKEEMPA	CHOMA CENTRAL	CHOMA 'B'	15	1956
53	CHOMA	MUTONGWA	1154	CHILALANTAMBO	MBABALA	MAPANZA	85	1940
54	CHOMA	MUYANDA	1155	SIMAUBI	MBABALA	MACHA	80	1935
55	CHOMA	MUZOKA	1156	KASIYA	PEMBA	BATOKA	45	1996
56	CHOMA	MWANACHILENGA	1157	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	40	1960
57	CHOMA	NABUKOWA	1158	MANG'UNZA	MBABALA	MANG'UNZA	78	1957
58	CHOMA	NACHIBINGA	1159	NACHIBANGA	PEMBA	BATOKA	52	1946
59	CHOMA	NAHUMBA	1160	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	3	1956
60	CHOMA	NAKEEMPA	1161	NAKEEMPA	CHOMA CENTRAL	CHOMA 'B'	45	1930
61	CHOMA	NALITUBA	1162	MBABALA	MBABALA	MACHA	62	1958
62	CHOMA	NALUBE	1163	CHILALANTAMBO	MBABALA	MAPANZA	72	1928
63	CHOMA	NAMAANZA	1164	SIASIKABOLE	CHOMA CENTRAL	MASUKU B	63	1991
64	CHOMA	NAMUSWA	1165	NAMUSWA	CHOMA CENTRAL	MASUKU B	85	1927
65	CHOMA	NDONDI	1167	NACHIBANGA	PEMBA	MOYO B	55	1948
66	CHOMA	NEMFWE	1168	MACHA	MBABALA	MACHA	90	1940
67	CHOMA	NEW KACHENJE	1169	SIMAMVWA	CHOMA CENTRAL	CHOMA 'A'	20	1975
68	CHOMA	OLD KACHENJE	1170	MANG'UNZA	MBABALA	MANG'UNZA	110	1955
69	CHOMA	PANGWE	1171	SIMAMVWA	CHOMA CENTRAL	CHOMA 'A'	25	1959
70	CHOMA	PEMBA	1173	PEMBA	PEMBA	PEMBA	60	1947
71	CHOMA	POPOTA	1174	SIMAMVWA	CHOMA CENTRAL	CHOMA 'A'	11	1972
72	CHOMA	SHAMPANDE	1175	SIKALUNDU	CHOMA CENTRAL	CHOMA 'B'	3	1965
73	CHOMA	SIACHIDINTA	1176	BATOKA	PEMBA	BATOKA	35	1942
77	CHOMA	SIAMAAMBO	1181	SINGANI	CHOMA CENTRAL	CHOMA 'A'	15	1957
74	CHOMA	SIAMABBONKA	1178	KAUBA	PEMBA	MOYO A	63	1983
75	CHOMA	SIAMAKANDO	1179	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	60	1981
76	CHOMA	SIAMALUBA	1180	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	33	1945
78	CHOMA	SIANKOPE	1183	SINGANI	CHOMA CENTRAL	CHOMA 'B'	25	1938

79	CHOMA	SIASIKABOLE	1184	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	45	1935
80	CHOMA	SIAZWELA	1186	SIABUNKULULU	PEMBA	SIKALONGO	60	1934
81	CHOMA	SIBALUMBI	1187	HAMAUNDU	PEMBA	HAMAUNDU	87	1936
82	CHOMA	SIBANYATI	1188	STATE LAND	CHOMA CENTRAL	CHOMA 'B'	25	1974
83	CHOMA	SICHIKALI	1189	BATOKA	PEMBA	BATOKA	50	1965
84	CHOMA	SIKALONGO	1190	BATOKA	PEMBA	BATOKA	38	1938
85	CHOMA	SIKATUMBA	1191	KAUBA	PEMBA	MOYO B	70	1965
86	CHOMA	SILUKWIYA	1192	KABIMBA	MBABALA	MBABALA	55	1940
87	CHOMA	SIMAUBI	1193	SIMAUBI	MBABALA	MAPANZA	76	1958
88	CHOMA	SIMBULO	1194	KASIYA	PEMBA	KASIYA	88	1954
89	CHOMA	SIMPWEZE	1195	NAKEEMPA	CHOMA CENTRAL	CHOMA 'B'	35	1989
90	CHOMA	SIMUDIMA	1196	KASIYA	PEMBA	KASIYA	81	1935
91	CHOMA	SIMUKANKA	1197	NAKEEMPA	CHOMA CENTRAL	CHOMA 'B'	27	1990
92	CHOMA	SIMUNZELE	1198	MBABALA	MBABALA	MBABALA	50	1935
93	CHOMA	SINGANI EAST	1199	SINGANI	CHOMA CENTRAL	CHOMA 'B'	25	1930
94	CHOMA	SINGANI WEST	1200	SINGANI	CHOMA CENTRAL	CHOMA 'B'	25	1957
95	CHOMA	SIVUBWA	1201	SINGANI	CHOMA CENTRAL	CHOMA 'B'	98	1945
96	CHOMA	ST. PATRICKS	1203	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	2	1954
97	CHOMA	SWAN	1204	SIKALUNDU	CHOMA CENTRAL	CHOMA 'B'	1	1959
98	CHOMA	ZAMBIA NATIONAL SER.	1206	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	12	1989

5. MIDDLE BASIC SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	AIRPORT **(NEW)**	9016	KULUNDANA	CHOMA CENTRAL	CHOMA A	3	2004
2	CHOMA	BEN MULALU **(NEW)**	7486	NAKEEMPA	CHOMA CENTRAL	CHOMA B	21	2001
3	CHOMA	CHIMOWA **(NEW)**	7993	PEMBA	PEMBA	PEMBA	60	2003

4	CHOMA	CHIMU**(NEW)**	8822	NAKEEMPA	CHOMA CENTRAL	CHOMA B	27	2004
5	CHOMA	CHOMA BASIC	4480	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	3	2008
6	CHOMA	HABBANYUKA	1096	MAAMBO	PEMBA	HAMAUNDU	150	1945
7	CHOMA	HABEENZU	1097	KAUBA	PEMBA	HAMAUNDU	71	1948
8	CHOMA	HAMUBBWATU	1101	CHILALANTAMBO	MBABALA	MBABALA	47	1947
9	CHOMA	HARMONY	1102	MOOMBA	CHOMA CENTRAL	CHOMA 'A'	12	1995
10	CHOMA	JALILA	1103	HAMAUNDU	PEMBA	HAMAUNDU	93	1935
11	CHOMA	KABANGA	1106	MAPANZA	MBABALA	MAPANZA	80	1933
12	CHOMA	KADOMBO	1109	MANG'UNZA	MBABALA	MANG'UNZA	102	1970
13	CHOMA	KALALASAKA **(NEW)**	6548	NAMUSWA	CHOMA CENTRAL	MASUKU B	85	1997
14	CHOMA	KALUNDU KA MARIA	7484	MUBULA	CHOMA CENTRAL	CHOMA B	5	2000
15	CHOMA	KAPONDO	1112	SIMAUBI	MBABALA	MAPANZA	70	1998
16	CHOMA	KASONDE **(NEW)**	6550	SIABUNKULULU	PEMBA	SIKALONGO	60	2000
17	CHOMA	KATABA **(NEW)**		CHILALANTAMBO	MBABALA	MBABALA	53	2010
18	CHOMA	KATUMBI	14300	MACHA	MBABALA	MACHA	80	2007
19	CHOMA	KAZIMAULU	1117	KAUBA	PEMBA	MOYO A	105	1966
20	CHOMA	KAZUNGULA **(NEW)**	8720	NACHIBANGA	PEMBA	BATOKA	56	2003
21	CHOMA	LUPATA	1119	MACHA	MBABALA	MACHA	75	1941
22	CHOMA	MABWEATUBA	1122	MACHA	MBABALA	MACHA	84	1935
23	CHOMA	MAKKALAKKALA **(NEW)**	6552	NAMUSWA	CHOMA CENTRAL	MASUKU B	68	2000
24	CHOMA	MAKOMBA	1125	KASIYA	PEMBA	KASIYA	80	1939
25	CHOMA	MASUKU	1135	NAMUSWA	CHOMA CENTRAL	MASUKU B	71	1921
26	CHOMA	MAUBWE	1136	MBABALA	MBABALA	MBABALA	42	1976
27	CHOMA	MICHELO	1142	MAAMBO	PEMBA	HAMAUNDU	109	1950
28	CHOMA	MOOMBA	1143	SIMAMVWA	CHOMA CENTRAL	CHOMA 'A'	14	1978
29	CHOMA	MOYO	1144	KAUBA	PEMBA	MOYO A	65	1965
30	CHOMA	MUDUKULA	1147	SIABUNKULULU	PEMBA	BATOKA	54	1930
31	CHOMA	MUKOMBO	1149	KAUBA	PEMBA	MOYO B	75	1932
32	CHOMA	MUNZUMA	8570	SINGANI	CHOMA CENTRAL	CHOMA B	25	2004

33	CHOMA	MUTAMA RIVER	40092	MANG'UNZA	MBABALA	KASIYA	77	2008
34	CHOMA	MUTANGA **(NEW)**		KABIMBA	MBABALA	MBABALA	52	2011
35	CHOMA	MWAPONA **(NEW)**	7992	SIMACHECHE	CHOMA CENTRAL	CHOMA B	1	2000
36	CHOMA	NDAWANA	1166	CHILALANTAMBO	MBABALA	MAPANZA	78	1928
37	CHOMA	PATASI	1172	SIASIKABOLE	CHOMA CENTRAL	MASUKU	53	1990
38	CHOMA	SIABUNKULULU	4469	SIABUNKULULU	PEMBA	SIKALONGO	64	2000
39	CHOMA	SIACHOONGA	1177	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	50	1994
40	CHOMA	SIAMVULA	1182	SINGANI	CHOMA CENTRAL	SIKALONGO	42	1998
41	CHOMA	SIATEMBO	1185	BATOKA	PEMBA	CHOMA 'A'	25	1987
42	CHOMA	SIMWAMI HILL	40091	NAMUSWA	CHOMA CENTRAL	MASUKU B	115	2008
43	CHOMA	ST. MULUMBA	1202	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	1	1985

6. COMMUNITY SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	CHILUBE COMMUNITY	6547	BATOKA	PEMBA	BATOKA	26	2002
2	CHOMA	CHILUMBWE COMMUNITY	14063	CHILALANTAMBO	MBABALA	MACHA	63	2005
3	CHOMA	CHIVUMA COMMUNITY	9018	MANG'UNZA	MBABALA	MANG'UNZA	84	2003
4	CHOMA	CHOOYE COMMUNITY	14061	SINGANI	CHOMA CENTRAL	MASUKU A	35	2003
5	CHOMA	GAMELA COMMUNITY	8683	SINGANI	CHOMA CENTRAL	CHOMA B	21	2004
6	CHOMA	HAKWAAMBWA COMM	14062	CHILALANTAMBO	MBABALA	MAPANZA	70	2004
7	CHOMA	HANYUTA COMMUNITY	8576	KAUBA	PEMBA	MOYO B	145	2006
8	CHOMA	KAAMBA COMMUNITY	9019	HAMAUNDU	PEMBA	PEMBA	80	2003
9	CHOMA	KAANGA COMMUNITY	8823	SIASIKABOLE	CHOMA CENTRAL	MASUKU A	68	2004
10	CHOMA	KAILI COMMUNITY	8824	SIKALONGO	PEMBA	SIKALONGO	45	2004
11	CHOMA	KAMUNZA COMMUNITY	9020	KULUNDANA	CHOMA CENTRAL	CHOMA A	5	2004

12	CHOMA	KASAMU COMMUNITY	9021	MBABALA	MBABALA	MBABALA	48	2003
13	CHOMA	KASIWE COMMUNITY	6549	MAPANZA	MBABALA	MAPANZA	85	2000
14	CHOMA	KASUKWE COMMUNITY	8684	BATOKA	PEMBA	SIKALONGO	60	2004
15	CHOMA	LUBWE COMMUNITY	8892	NAMUSWA	CHOMA CENTRAL	MASUKU B	79	2004
16	CHOMA	LUGWASYO COMMUNITY	6551	SIMACHECHE	CHOMA CENTRAL	CHOMA B	2	1999
17	CHOMA	MABANGA COMMUNITY	7991	BATOKA	PEMBA	SIKALONGO	47	2001
18	CHOMA	MALAMBA COMMUNITY	7483	KAUBA	PEMBA	MOYO B	68	2001
19	CHOMA	MULAMPA COMMUNITY	14056	MAAMBO	PEMBA	HAMAUNDU B	113	2005
20	CHOMA	NAKAMPATU COMMUNITY	8721	MAAMBO	PEMBA	HAMAUNDU B	130	2003
21	CHOMA	NAMANKWENGA COMM	8890	KAUBA	PEMBA	MOYO B	50	2003
22	CHOMA	SALVATION ARMY COMM	8571	SIKALUNDU	CHOMA CENTRAL	CHOMA B	4	2005
23	CHOMA	SHALOM COMMUNITY	14060	SINGANI	CHOMA CENTRAL	CHOMA B	27	2002
24	CHOMA	SIJUWA COMMUNITY	8723	SIABUNKULULU	PEMBA	SIKALONGO	60	2004
25	CHOMA	SIKABBUBBA COMMUNITY	8889	NAKEEMPA	CHOMA CENTRAL	CHOMA B	40	2003
26	CHOMA	SIKAKWA COMMUNITY	14067	SIASIKABOLE	CHOMA CENTRAL	MASUKU B	55	2005
27	CHOMA	SINALUNGU COMMUNITY	6555	KABIMBA	MBABALA	MACHA	68	2000

7. IRI CENTRES

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	CHOOMPA IRI	7994	HAMAUNDU	PEMBA	HAMAUNDU A	88	2001
2	CHOMA	KAKUBA IRI	NEW	HAMAUNDU	PEMBA	HAMAUNDU B	108	2008
3	CHOMA	KANCHOMBA IRI	7996	HAMAUNDU	PEMBA	HAMAUNDU A	93	2001
4	CHOMA	KASIKILI IRI	7997	MAAMBO	PEMBA	HAMAUNDU A	103	2001
5	CHOMA	MICHELO IRI	7995	MAAMBO	PEMBA	HAMAUNDU B	109	2003
6	CHOMA	MUNYONA IRI	7998	MAAMBO	PEMBA	HAMAUNDU B	60	2001

8. PRIVATE SCHOOLS

S/NO	DISTRICT	SCHOOL NAME	EMIS CODE	WARD	CONSTITUENCY	TESS ZONE	DISTANCE TO DEBS OFFICE	YEAR SCHOOL OPENED
1	CHOMA	ABRAHAM'S MISSION SCHOOL	40056	SIMACHECHE	CHOMA CENTRAL	CHOMA 'A'	2	2003
2	CHOMA	ALBRIGHT PRIVATE	4010002	KULUNDANA	CHOMA CENTRAL	CHOMA 'B'	1	2009
3	CHOMA	CITY OF ANGELS (JACARANDA)	14058	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	1	1997
4	CHOMA	FAITHWOOD	1095	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	1	1997
5	CHOMA	LITTLE JANE SCHOOL	40057	SIKALUNDU	CHOMA CENTRAL	CHOMA 'B'	4	2005
7	CHOMA	MBUTO MBOTU PRIVATE (PRECIOUS SEED)	14053	SIMACHECHE	CHOMA CENTRAL	CHOMA 'B'	3	2006
8	CHOMA	NEW DAWN PRIVATE	4010003	MUBULA	CHOMA CENTRAL	CHOMA 'B'	2	2008
9	CHOMA	NIZA	4469	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	1	2001
11	CHOMA	RIVER JORDAN	14052	KULUNDANA	CHOMA CENTRAL	CHOMA 'A'	1	2000
12	CHOMA	WONGA	14054	KULUNDANA	CHOMA CENTRAL	CHOMA 'B'	1	1998

APPENDIX II: SEMI-STRUCTURED INTERVIEW SCHEDULE

Topic: An evaluation of the implementation of Water, Sanitation and Hygiene (WASH) programme in Schools in Choma district, 2009-2013.

Introduction

Dear respondent,

Your school has been chosen to help answer this questionnaire which is strictly for academic purpose. The exercise serves to uphold your right of confidentiality.

Section A: Background

1. Name of the school……..…….
2. In which Zone is your school? .....
3. Type of the school
   1. Seondary [ ] 2. Primary [ ] 3. Community [ ] 4. IRI Centre [ ]
4. Who sponsors the school?
   1. Government [ ] 2. Grant-Aided [ ] 3. Private [ ] 4. Community [ ]
5. Number of teachers;1. Male…… 2. Female……
6. Number of pupils;

Year	girls	boys
2013		

7. Does your school have a WASH committee?
   1. Yes [ ] 2. No [ ]
8. If yes, when was it formed? ……..……
9. How often does it meet?
   1. Once per week [ ] 2. Once per month [ ] 3. Once per term [ ] 4. When need arise [ ]
10. What activities does the committee do? List them (tick in the box).
    1. Hand wash maintenance [ ]
    2. Maintenance of latrines [ ]

3. Hygiene education [ ]
4. Environmental education [ ]
5. Provision of safe drinking water [ ]
6. Others (kindly explain) [ ] ……..……

11. How does the committee implement the activities in your school?

……..……

12. Who introduced these WASH activities in your school?

……...…….

13. Has any member of the committee been trained in WASH programme?

1. Yes [ ] 2. No [ ]

14. If yes, who trained them? ……..……

15. How does the school administration support in implementation of the activities?

1. Providing money [ ]
2. Providing materials [ ]
3. Allocating time for activities [ ]
4. Monitoring [ ]
5. Other (kindly specify) ……..……

16. Does the community participate in the implementation of the WASH activities?

1. Yes [ ] 2. No [ ]

17. If yes, how does it participate?

1. Provision of labour [ ]
2. Provision of materials [ ]
3. Encourage children participation [ ]
4. Others (kindly explain) [ ] ……...

18. If not, why? ……..…….

19. What challenges does your school face in the implementation of WASH activities?

……..……

20. How is the school trying to solve these challenges?

……..……

Section B: School Toilets/Latrines.

21. What type of toilets does your school have?

1. Flush [ ] 2. Latrine [ ]

22. Who funded their construction?
    1. Micro projects Unit [ ]
    2. Zambia Social Investment Fund [ ]
    3. Other (kindly specify) ……..……..

23. How many are for pupils?
    1. Girls ……..2. Boys ……...

24. How many are for teachers?
    1. Female ……..2. Males …….

25. How many of these facilities are not operational?
    1. Pupils [ ] 2. Teachers [ ]

26. What rules are in place for the use of toilets/latrines in your school?

    ……

    ……

27. Does the school have a schedule for cleaning the toilets/latrines?
    1. Yes [ ] 2. No [ ]

28. Is there a maintenance committee for sanitary facilities in your school?
    1. Yes [ ] 2. No [ ]

Section C: Hand Washing Facilities

29. How many hand wash facilities does your school have?

facility	**number**	**operational**	**Not operational**
Concrete tank with tap			
Bucket with cup			
Plastic containers with tap			
Plastic containers without tap			

30. Who funded the construction of these hand wash facilities?
    1. Micro Projects (Unit MPU) [ ]
    2. Zambia Social Investiment Fund (ZAMSIF) [ ]
    3. Other (kindly specify)

    ……..……..

31. Where are these facilities located?

Location	Number facilities
Outside the toilet/latrine	
Near school building	

32. Who fills up the facility with water?

……..……..

33. Is there a cleaning schedule for the hand washing facilities?

1. Yes [ ] 2. No [ ]

34. Who cleans the facilities? ……...……...

Section D: Water Supply

35. Does your school have water sources?

1. Yes [ ]2. No [ ]

36. If yes, what is the type of these water sources? ……..……

37. Who funded the construction of these facilities?

1. Micro Projects Unit (MPU) [ ]
2. Zambia Social Investment Fund (ZAMSIF) [ ]
3. Others (kindly specify) ……..……

38. Are the water sources located within the school grounds?

1. Yes [ ] 2. No [ ]

39. How available is water?

1. Regular [ ] 2. Irregular [ ]

40. If irregular, kindly explain

……...……

……...……

41. Is there someone responsible for the management of water supply facilities?

1. Yes [ ] 2. No [ ]

42. How are funds for maintenance and repair of the facilities raised?

Source	Amount	Frequency	By who
Contribution			

Fundraising activities			

Other (kindly explain) ……..……..

43. Do you share these facilities with the community?

    1. Yes [ ] 2. No [ ]

Section E: Life Skills Based Hygiene Education

44. Does your school offer education on hygiene to the pupils?

    1. Yes [ ] 2. No [ ]

45. Does the school curriculum include education on hygiene?

    1. Yes [ ] 2. No [ ]

46. What teaching aids are used to promote personal hygiene among pupils in your school?

    ……

47. Are there any health clubs at your school?

    1. Yes [ ] 2. No [ ]

48. How are your pupils taught sanitation and hygiene skills?

    ……..……

49. Who is responsible for personal hygiene of the pupils at your school?

    ……..…

50. What do you do with the refuse generated at your school?

    ……..

51. Does your school discuss hygiene issues with pupils?

    1. Yes [ ] 2. No [ ]

52. When are these discussions held?

Class	
Assembly	

Section F: Suggestions

53. What would you like to be done about WASH in your school?

    ……

Thank you for your cooperation…!

APPENDIX III: FOCUS GROUP DISCUSSIONS INTERVIEW GUIDES

1. Focus Group Discussion with Youths (Pupils)

i. What do you know about school WASH programme?
ii. How important is WASH in your schools?
iii. How available;
    a. Water in your school?
    b. Toilets/latrines in your school?
iv. What is your role in the WASH programme in your school?
v. WASH challenges in your schools.

2. Focus Group Discussion with women (female teachers)

i. How important is WASH programme in your?
ii. State of WASH facilities for both the girl child and female teachers in your schools.
iii. Role of female teachers in implementation of WASH activities in your schools.
iv. Challenges of female teachers in your schools.
v. How have you tried to solve the challenges?

3. Focus Group Discussion with men (male teachers)

i. Importance of WASH to the boy child in your schools.
ii. State of WASH facilities for both boys and male teachers in your schools.
iii. Role of male teachers in implementation of WASH in your schools.
iv. Challenges of male teachers in your schools.
v. How have male teachers tried to solve the challenges?

APPENDIX IV: INTERVIEW GUIDES WITH KEY INFORMANTS

1. District Education Board Secretary (DEBS): Choma District

i. Guidelines for the establishment and implementation of WASH in schools.
ii. The role in the implementation of WASH in schools.
iii. Yearly budgetary allocation to schools.
iv. Budgetary allocation for school WASH programme.
v. Partners of WASH in schools.

2. Choma Local Authority (Choma District)

i. Council's role in the implementation of WASH in schools in the district.

3. World Vision Zambia (Choma District)

i. What are the places and schools of interest in Choma district?
ii. Why did you choose the above named schools?
iii. What does WV do in those schools about WASH?
iv. How does the government support WV's programme?
v. Is there a school WASH policy in Zambia?