

ASSESSING THE LEVEL OF AWARENESS ON WASH RELATED DISEASES IN  
KALIRO TOWN COUNCIL KALIRO DISTRICT, UGANDA.

BY

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## DECLARATION

I declare that all the work presented in this research study is my original work and no part or duplicate of it has been presented to any institution for award of Bachelors or any other qualification.

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Date.....13<sup>th</sup>/5/2022.....

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**APPROVAL**

This is to certify that this proposal was developed by Masanja Alex under my supervision.

**Mr. F**

Date **Sign**.....13/05/2022

**Kabale University Supervisor.**

## **LIST OF ABBREVIATIONS**

BC	Behavior Change
BCR	Benefit Cost Ratios
BCT	Behavior Change Techniques
CLTS:	Community led total sanitation
DfID	United Kingdom Department for International Development
FGD	Focus group discussions
MDGs	Millennium Development Goals
MOH:	Ministry of Health.
MWE	Ministry of Water and Environment
NGO	Non-Governmental Organization
NLs	Natural Leaders
NPA	National Planning Authority
OD:	Open defecation
ODF:	Open defecation free
PRA	Participatory Rural Appraisal Sustainable
SDGs	Development Goals Sustainable
SDGs:	Development Goals. Statistical Package for
SPSS SSA	Social Scientists Sub-Saharan Africa
STHs	Soil Transmitted Helminthoses
IJNDP	United Nations Development Program
UNICEF	United Nations International Children's Emergency Fund
USF	Uganda Sanitation Fund
UNICEF:	United Nations Children's emergency Fund.
UTAUT	Unified Theory of Acceptance and Use of Technology
VHTs	Village Health Teams
VIP	Ventilated Improved Pit Latrines
WASH	Water Sanitation and Hygiene
WASH:	Water sanitation and Hygiene.
WHO:	World Health Organization

## OPERATIONAL TERMS

**Sanitation:** Refers to conditions relating to environmental health, especially the provision of clean drinking water and adequate sewage disposal.

**Hygiene:** Refers to conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness.

**Water:** Refers to a colorless, transparent, odorless liquid that forms the seas, lakes. Rivers and rain and is the basis of the fluids of living organisms.

**Disease:** Refers to any harmful deviation from the normal structural or functional state of an organism, generally associated with signs and symptoms and differing in nature from physical injury.

**Food:** Refers to any nutritious substance that people or animals eat or drink that plants absorb in order to maintain life and growth.

**Environment:** Surroundings or conditions in which a person, animal or plant lives or operates.

**Pathogen:** A bacterium, virus or other microorganism that can cause disease.

**Infection:** Refers to the process of infecting or the state of being infected.

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## CHAPTER ONE

### **1:0 Introduction**

The effects of poor water, sanitation and hygiene (WASH) affect every aspect of health and development, hinder economic and social development and constitute a major hurdle to poverty alleviation. As stated in Communication for behavior change and control of diseases of Public health importance, many communicable diseases can be effectively managed by improving WASH practices. Water borne disease prevalence can be reduced through implementing the three key WASH practices. Safe disposal of faeces and hand washing with soap at critical times can reduce prevalence of water borne diseases by 30% and 40% respectively. Likewise, safe treatment and storage of drinking water can reduce the prevalence of water borne diseases by 30-50% as seen in Urban and rural water supply. UNICEF, 2019.

### **1:1 Back ground**

Globally, 2.3 billion people lack basic sanitation (892 million people practice open defecation), 844 million people lack basic drinking water, and 2.5 million people lack improved sanitation.

In developing countries, WASH is one of the most important felt needs in Environmental Health in this 21 st century as stated in community health and development. However, about 842000 people die as a result of inadequate WASH each year, representing 58% of the total diarrheal deaths. World Health Organization: Water, Sanitation and Hygiene Phenotypes and Six Predictors in Low and Middle-Income Countries. Hugh Ellis and Erica Schoenberg.

In Sub-Saharan Africa, WASH remains one of the major Environmental Health challenges with very low coverage. Nearly, half of the population (319 million) does not use WASH facilities, 58% in Sub Saharan Africa lack basic drinking water. In Ethiopia, the 2016 Demographic and Health Survey (DHS) Report indicated that only 57% the households in rural areas obtain their drinking water from improved sources and 39% have no toilet facility. The prevalence of diarrhea episodes in the community was reported to be 12%.

Lack of awareness on WASH is one of the most imperative causes for transmission of infectious diseases as explored in Communication for behavior change. Effectiveness of WASH depends not only on the provision of WASH

facilities but also and most importantly on the compliance of individuals. WHO, 2019. Unless people have adequate awareness in relation to WASH, mere access to the services is not sufficient to mitigate health problems related to unsafe water, poor sanitation and hygiene. The extent of safe WASH practices can be determined by the people's awareness towards WASH a key principle in Community health and development promotion.

Kaliro District has been implementing WASH projects such as CLTS and as a package of health extension programs and it has been implemented since 2017 by considering its significance for the protection of Environmental Health and reducing WASH related mortality and morbidity. DHIS, 2020. Despite continued efforts of WASH programs, frequent WASH related epidemics including Acute Watery Diarrhea (AWD) are still persistent with high proportions in the area with 86.4% latrine coverage and only 43% hand washing coverage. DHIS, 2020. This could be due to lack of awareness on proper WASH practices in Kaliro District. Therefore, determining the level of awareness on WASH related diseases in Kaliro Town council is essential to design and apply appropriate strategic measure to prevent WASH related diseases, a key principle in Epidemiology. This study could be also used as a baseline to assess the impact of WASH interventions.

## **1:2 Problem Statements**

Growing up in a clean and safe environment is every child's right as elaborated in resource management and health policy. Access to clean water, basic sanitary facilities and good hygiene practices not only keep children thriving, but also give them a healthier start in life. UNICEF/Uganda, 2019.

Despite COVID-19 putting the spotlight on the importance of hand hygiene to prevent the spread of disease, three billion people worldwide, including hundreds of millions of schools going children, do not have access to hand washing facilities with soap. People living in rural areas, urban slums, disaster prone areas and low-income countries are the most vulnerable and most affected. (CDC, 2018).

Worldwide, 2.2 billion people still lack access to safe drinking water,

More than half of the global population does not have access to safe sanitation, Three billion people do not have access to hand washing facilities with soap, Still, 673 million people practice open defecation. WHO, 2019.

The consequences of unsafe water, sanitation and hygiene on children can be deadly. Over 700 children under 5 years die every day of diarrheal diseases due to lack of appropriate WASH services. (WHO, 2019).

Diarrhea alone one of the major childhood killers in Uganda, kills 33 children every day.data.unicef.org. But in Uganda, poor sanitation and hygiene as well as unequal access to safe drinking water make thousands of children very sick and at risk of deaths.

Diarrhea alone one of the major childhood killers in Uganda, kills 33 children every day. MOH Report 2021, Uganda.

In most cases, children get the disease by drinking unsafe water or coming into contact with contaminated hands theirs or parents or care givers that have not been washed with soap.

Early childhood diarrhea is not only deadly; it also contributes to Uganda's high level of stunting, which in turn affects children's cognitive development and performance at school. In schools, lack of proper sanitation of facilities also lead to high absenteeism and drop outs, especially for girls. (UBOS, 2021 ).

Access to improved water and sanitation facilities does not on its own necessarily lead to improved health. It needs another step. There is now very clear evidence showing importance of hygienic behavior especially hand washing with soap after defecating and before eating or preparing food to health improvement. (Life Water International Report/Kaliro, 2018.)

Another key to reducing childhood illness and death is to stop using open field or the bush as toilets. Behavior change is the key to increasing the practice of hand washing with soap and ending open defecation. The change can be accomplished through motivation information and education. (Life Water International Report/Kaliro, 2018.)

Clean water must be readily available for people to improve their hygiene habits, as must soap as elaborated in Urban and rural water supply. And girls must have privacy and dignity when using sanitation facilities.

Ministry of Health-Uganda through Sanitation fund supports Community led total sanitation, a process of education and communication to help change behavior.

(UNICEF, 2020).

In Uganda, nearly a tenth of the population practice open defecation and two thirds of households do not wash with soap. World Bank, 2020. And Kaliro specifically with 13.4% open defecation and 57% still not practicing proper hand washing. (DHIS, 2020.)

Therefore, determining the level of awareness on WASH related diseases in K.aliro Town council was essential to design and apply appropriate strategic measure to prevent WASH related diseases.

### **1 :3 Research questions.**

The study was guided by the following questions

1. What is the level of awareness on sanitation and hygiene in Kaliro Town Council?
2. What are the WASH related diseases in Kaliro Town Council?
3. What are the strategies for prevention and control of WASH related diseases in K.aliro Town Council?

### **1:4:0 The study was guided by the following objectives 1 :4: 1**

#### **General objective**

To assess the level of awareness on WASH related diseases in Kaliro Town Council, Kaliro District so as to design and apply appropriate strategic measures to prevent WASH related diseases.

#### **1:4:2 Specific objectives.**

The specific objectives of the study were:

1. To assess the level of awareness on sanitation and hygiene in Kaliro Town Council.
2. To determine WASH related diseases in Kaliro Town Council.
3. To assess the existing strategies for prevention and control of WASH related diseases in Kaliro Town Council.

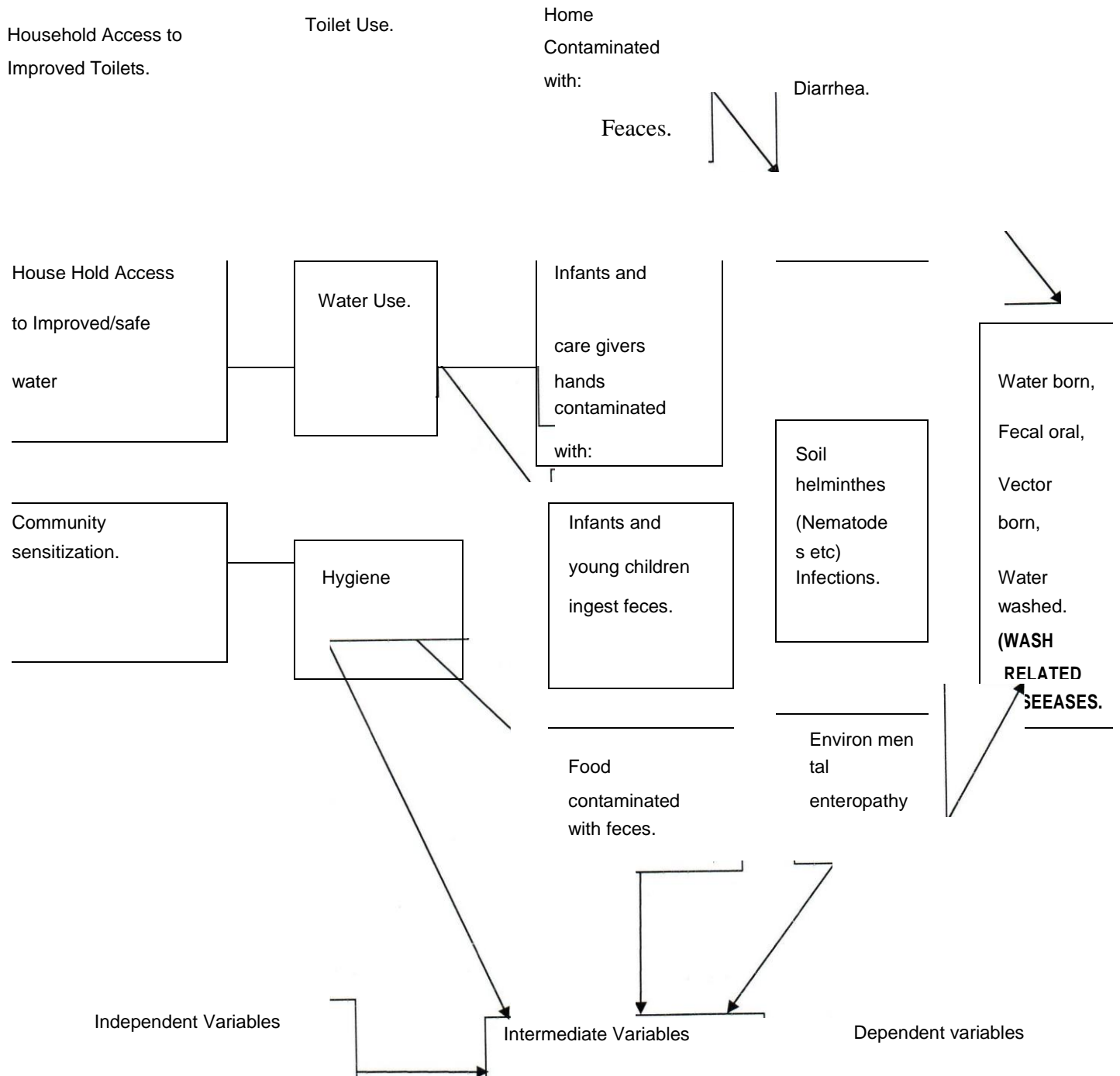
#### **1:5 Significance of the study**

The study would aid Kaliro Town Council Health Department to design and apply appropriate strategic measure to prevent WASH related diseases.

This study could be also used as a baseline to assess the impact of WASH interventions in Kaliro Town council.

The study results would also be submitted to Community Health Department of Kabale University School of medicine for the award of Bachelor in Environmental Health Sciences.

5.



Source: <https://www.researchgate.net/publications>

1 :6 Figure 1 showing conceptual frame work 6

**1:6:1 Explanatory notes for conceptual frame work**

Poor house hold access to improved toilets led to low toilet use hence causing increased contamination of homes with feces which resulted into occurrence of WASH related diseases. Improving access to improved toilets promoted proper usage hence reducing the occurrence of WASH related diseases.

Low access to safe/improved water led to use of water from un improved sources/ un safe water which resulted into ingestion of feces and contamination of care givers and children's hands. This led to worm infection and other water born and fecal oral diseases in humans.

Lack of community sensitization hindered community awareness on better sanitation and hygiene practices hence leading to poor hygiene and sanitation. This resulted into food contamination and environmental enteropathy conditions which led to occurrence of WASH related diseases.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2:0 Introduction**

Water and sanitation are essential for life, health, but they are essential for dignity, empowerment and prosperity. Water and sanitation are human rights, fundamental to every child and adult. But Uganda, poor sanitation and hygiene, as well as unequal access to safe water make thousands of people sick and at risk of death. (UNICEF/Uganda, 2018).

In most cases, children get disease by drinking unsafe water or coming into contact with contaminated hands, their parents or care givers that have not washed with soap.

Access to improved water and sanitation facilities does not on its own necessarily lead to improved health, it needs another step. There's now clear evidence showing the importance of hygienic behavior especially hand washing with soap after defecating and before eating or preparing food to health improvement. Another key to reducing childhood illnesses and deaths is to stop using open fields or the bush as toilets. In Uganda, nearly a tenth of the population practices open defecation and two thirds of households do not wash with soap. It is poor people who carry the greatest burden of poor sanitation. The poorest 20% of the population is 13.5 times more likely to defecate in the open than the wealthiest 20%, according to World Bank.

Behavior change communication is the key to increasing the practice of hand washing with soap and ending open defecation. The change can be accomplished through motivation, information and education. Clean water must be readily available for people to improve their hygiene habits, as must soap. And girls must have privacy and dignity when using sanitation facilities. (UNICEF Uganda Annual Report 2019).

#### **2:1 Strategies of prevention and control of WASH related diseases.**

##### **Toilet use, water use and hygiene**

Proper sanitation facilities for example toilets and latrines promote health because they allow people to dispose of their waste appropriately as elaborated in Excreta and waste water management and treatment. Throughout the developing world,



many people do not have access to suitable sanitation facilities resulting in improper waste disposal. Absence of basic sanitation facilities can:

Result in unhealthy environment contaminated by human waste. Without proper sanitation facilities, waste from infected individuals can contaminate a community's land and water, increasing the risk of infection for other individuals. Proper waste disposal can slow the infection cycle of many disease-causing agents. Fecal oral, water born and vector borne diseases can result from such conditions. This is fully discussed in Environmental pollution and solid waste management course units.

Contribute to the spread of many diseases/ conditions that can cause wide spread of illness and death. Without proper sanitation facilities, people often have no choice but to live in and drink water from an environment contaminated with waste from an environment contaminated with waste from infected individuals, thereby putting themselves at risk for further infection. Inadequate waste disposal drives the infection cycle of many agents that can be spread through contaminated soil, food, water and insects such as flies. (MDGs Report, 2007, UNICEF, 2019 and IRC 2020.)

### **2:3 Community water systems**

Human health and wellbeing are strongly affected by the environment in which we live, the air we breathe, the water we drink and the food nutrients we eat. Community water systems and water safety plans are important ways to ensure the health of the community. (See notes of Urban and rural water supply.)

In many places, communities lack the capacity to effectively adapt their current systems for water, sanitation and hygiene to the community's changing needs (population growth, changes in water quality).

According to WHO, the objectives of water safety plans are to ensure safe during water through good water supply practices which include,

Treating the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets and,

Preventing re-contamination during storage, distribution, and handling of drinking water. WHO-Water Safety Plans.

## **2:4 WASH Related Diseases Prevalence**

Safe water, sanitation and hygiene are fundamental for human health. Yet more than 884 million people globally have no safe water to drink. Nearly 2.4 billion people lack access to basic sanitation facilities. Many people resort to open defecation, a practice that can endanger the safety of water used for drinking and personal use.

Infants and children are more likely to die due to lack of access to safe water. Many diarrheal diseases spread through unsafe water and sanitation. These conditions along with poor hygiene can also cause the deadly fecal oral and water borne diseases such as cholera and typhoid fever. Poor WASH conditions are also linked to emerging challenges such as extensively drug resistant typhoid fever and other vector borne diseases.

Focused efforts are needed to accelerate and sustain progress towards eliminating threats like antibiotic resistant infections.

## **2:5 Diarrhea**

Many water borne infections cause diarrhea and loss of body fluids, resulting too often in severe dehydration and death. Diarrhea is the fifth leading cause of death among children under the age of 5 years. Frequent and recurring diarrhea can reduce children's growth and cognitive development and increase their susceptibility to other infectious diseases.

About 88% of diarrhea associated deaths are due to unsafe water, inadequate sanitation and insufficient hygiene. G8D. 2016. (Diarrheal Disease Collaborators Lancet.)

77% Due to inadequate WASH

70% Due to unsafe water.

54% Due to unsafe sanitation.

34% Due to lack of hand washing facilities.

2:2:2 Cholera

In 2017, the Global Task force on cholera control launched Ending cholera: The Global Road map to 2030. The declaration calls for a collective approach to reduce cholera by 90% and to eliminate local disease transmission by 2030. Infections cause extreme diarrhea with rapid loss of body fluids and can be fatal within hours if not treated.

Cholera has been reported in 47 countries worldwide and is most likely to affect the poorest and most vulnerable populations, including young children and older adults.

Global efforts which primarily focus on outbreak response are shifting to include long term prevention initiatives through improved WASH and cholera vaccines.

## **2:6 Typhoid**

Typhoid is a bacterial disease spread by drinking or eating contaminated water or food. The first known outbreak of a strain of extensively drug resistant (XDR) typhoid fever in Pakistan resulted in over 10,000 cases from 2016-2019, including 30 cases in the US.

The XDR strain does not respond to most antibiotics, making infections harder to treat. As treatment options become more limited, further preventive measures are urgently needed to prevent typhoid infections and deaths, such as improved sanitation and hygiene and typhoid vaccination campaign. (CDC, 2020).

## **2:7 Awareness on sanitation and hygiene**

In relation to other factors influencing ODF status, knowledge of sanitation and hygiene is important because it influences behavioral change hence sustainability. Additionally, people should have an understanding (factual knowledge) of how they could be affected by diarrhea through open defecation. (CLTS for open defecation free Environment: A case study of Nawaikoke and Budomero Sub counties, Kaliro District. Mbaguta Alex Muhumuza, 2019).

Water and sanitation are essential for life and health, but they are also essential for dignity, empowerment and prosperity. Water and sanitation are human rights fundamental to every child and adult. (UNICEF, 2020).

But in Uganda, poor sanitation and hygiene as well as unequal access to safe drinking water make thousands of children very sick and at risk of deaths.

Diarrhea alone one of the major childhood killers in Uganda, kills 33 children every day.

In most cases, children get the disease by drinking unsafe water or coming into contact with contaminated hands theirs or parents or care givers that have not been washed with soap.

Early childhood diarrhea is not only deadly; it also contributes to Uganda's high level of stunting, which in turn affects children's cognitive development and performance at school. In schools, lack of proper sanitation facilities also leads to high absenteeism and drop outs, especially for girls.

Access to improved water and sanitation facilities does not on its own necessarily lead to improved health. It needs another step. There is now very clear evidence showing importance of hygienic behavior especially hand washing with soap after defecating and before eating or preparing food to health improvement.

Another key to reducing childhood illness and death is to stop using open field or the bush as toilets. (CLTS for open defecation free Environment: A case study of Nawaikoke and Budomero Sub counties, Kaliro District. Mbaguta Alex Muhumuza, 2019).

In Uganda, nearly a tenth of the population practices open defecation and two thirds of households do not wash with soap. (World Bank, November 2020.)

It is the poor who carry the greatest burden of poor sanitation. The poorest 20% of the population is 13.5 times more likely to defecate in the open and the wealthiest 20% according to the World Bank.

Behavior change is the key to increasing the practice of hand washing with soap and ending open defecation as elaborated in communication for behavior change. The change can be accomplished through motivation information and education. Clean water must be readily available for people to improve their hygiene habits, as must soap. And girls must have privacy and dignity when using sanitation facilities.

UNICEF supports Community led total sanitation, a process of education and communication to help change behavior. (UNICEF, 2020).

## **CHAPTER THREE**

### **Methodology**

#### **3:1 Study design**

The study was cross sectional in nature. No **table of authorities entries found**.

Both qualitative and quantitative methods were employed in to collect data.

#### **3:2 Study Area**

The research was carried out in Kaliro Town Council in Kaliro district located in Busoga Sub region, Eastern part of Uganda. Kaliro Town council was purposively selected due to the fact that it's densely populated and prevalent with diarrheal diseases and researcher understands the socio-dynamics off the area.

#### **3:3 Scope of the study**

The study was carried out in Kaliro Town Council, in Kaliro district. Kaliro Town Council consists of five parishes, Bukomankoola, Lum bu ye, Budini, Buyunga and Naigombwa with 19 villages and one Health Centre II and III. Kaliro is one of the 128 districts in Uganda with an elevation of 1,100m and area of 1,063 KM squared. It's found in Busoga sub-region, Eastern Uganda. Kaliro is made up of 11 Sub-counties and 4 Town Councils, 62 parishes and 544 villages. Kaliro district borders Serere district to the North, across Lake Nakuwa, one of the lakes that comprise Lake Kyoga water complex. Pallisa district lies to the North East, Namutumba district to the South East, Iganga district to the South, Luuka District to the South West and Buyende district to the North West. (UBOS, 2017a).The study will focus on households, business and domestic premises in the respective communities.

#### **3:4 Study variables**

##### **3:4:1 Dependent Variable**

Knowledge on WASH related diseases were the dependent variables whose increase or decrease are determined by changes in the intermediate and independent variables.

For example, house hold access to improved toilets, Household access to improved or safe water and community sensitization were the dependent variables on which whose improvement directly influences improvement on the intermediate variables. i.e water use, toilet use and sanitation and hygiene. Occurrence and spread of WASH related diseases is directly related to sanitation

and hygiene practices. Bad sanitation and hygiene practices like no hand washing both after visiting a toilet and before eating or preparing food, using open fields for defecating and use of unsafe water led to outbreaks of WASH related diseases.

### **3:4:2 Independent Variables**

The independent variables are variables whose improvement or reduction affects the dependent variable both directly or indirectly. They included;

Community sensitization increases community awareness which led to behavior change resulting into improved household sanitation and hygiene hence preventing occurrence and spread of WASH related diseases.

Improved household access to improved toilets prevents water and food contamination which limited occurrence of WASH related diseases in households.

Improved household access to improved/safe water led to improved sanitation and hygiene which directly prevented occurrence of WASH related diseases.

### **3:5 Study Populations**

Household heads or eligible members of the households who were 18 years and above in respective villages. Village Health teams and Health Assistants of Kaliro Town Council were also chosen for focus group discussion. Total of 295 members consisting of twelve VHTs and two Health Assistant respectively.

### **3:6 Selection criteria**

Simple random sampling was used to select the representative sample of different households that participated in the study. List of households was exposed to a lottery technique to select the household because of the wide geographical spread of the areas. Random sampling helped the researcher to save time and other resources and gave equal chance to all households to take part in the study. From estimated population in Kaliro Town Council, 7632 HHs. Since Kaliro district has 86.4% of households with pit latrines. (DHIS, 2020). This was used as the base proportion of sanitation conditions in the study area.

### **3:7 Sample size**

Study sample size was calculated using the standard statistical formula (Kish, 1965). A sample size

291 respondents will be calculated as follows:

The sample size will be determined as follows;

$n = \frac{Z^2 P q}{d^2}$  where  $N > 10,000$

$n = \frac{1.96^2 \times 1.37 \times 0.14}{0.05^2}$

$3.8416 \times 1.37 \times 0.14 / 0.0025$

$0.7368 / 0.0025$

$n = 281.72$  approximating to 291 respondents including 5% for non response.

(15)

n- Being the sample size

d - Degree of accuracy 0.05

p- Population being affected 1.366 or 1.37 q-

Population not affected 0.14

Z-1.96 standard normal deviation

Source: [www.ncbi.nlm.nih.gov/pmc](http://www.ncbi.nlm.nih.gov/pmc)

### **3:8 Sampling procedure**

The sampling procedure was systemic random sampling of households depending on the number of households in the village. Probability (purposive) sampling was employed for Health Assistants and VHTs respectively. Three hundred one households were interviewed, and fourteen key informants (Health Assistants and VHTs).

The study participants were selected by random sampling procedure from selected villages, all the five parishes were selected for the study and two villages were randomly selected from each parish. Systemic random sampling was used to select households from the villages. The number of households to be selected from each village depended on the total number of households there, from which the sampling interval was developed.

### **3:9 Plans for data collection and processing**

An introductory letter was obtained from the department of Community health Kabale University that introduced the researcher to the relevant authorities that who allowed him to carry out the research in the area of study. The introductory letter was then presented to the Town Clerk, Kaliro Town Council who



introduced the researcher to the Health department Head who finally introduced the researcher to the respondents. Plans were made, dates and convenient time fixed and steps taken to collect data as follows; at different occasions for acclimatization, and questionnaires to respondents and held interviews with different categories of respondents. The data collected was then analyzed, interpreted, discussed and used for compiling the research report.

Primary data was collected using guided interview questionnaires, focus group discussion and observational checklists whereas secondary data collection was by making reference to existing literature in the public library, internet or from technical staff. Data was analyzed using statistical percentages, pie charts and graphs respectively.

#### **3:9:1 Guided interview/questionnaire.**

These were designed for the household heads, focus groups and technical staff.

The researcher asked questions as the respondents replied to them.

#### **3:9:2 Observational checklists.**

Observation enabled the researcher to attain first hand data as he/ she saw, recorded and analyzed the sanitation and hygiene status in households using a checklist.

#### **3:10:0 Quality assurances**

Measures were taken to ensure data collection was valid. The data collection tools were developed in consultation with relevant officers and supervisors. They were presented and research assistants were briefed on how to conduct the interviews. Data was obtained only from groups of interest and reliable public sources. Pretesting of the data collection tools was conducted in Kasokwe Sub County to ascertain the validity and reliability of the tools.

#### **3:10:1 Orientation Meeting**

An orientation meeting was conducted for the research assistants to familiarize them with the purpose of the study so that they could collect data in the field efficiently. In order to get reliable data, the research assistants were thoroughly briefed about the objectives and the methodology of the study. The approach and

mechanism to conduct the research was explained to them. The following topics were specially covered during the briefing:

- Objectives and methodology of the assessment
- Duties and responsibilities of the study team members
- Interview techniques
- Methods of filling questionnaires
- Concepts and definitions of various terms and terminologies used in the questionnaires
- Art of building proper rapport with the respondents to get cooperation from them during the field survey; and
- Art of taking information through FGD.

### **3:10:2 Quality control Validity of Instruments**

Questionnaires before being administered, were first examined by colleagues taking the same program as the researcher. They were scrutinized by the supervisor. This ensured that the terms used in the questionnaire were precisely defined and properly understood. The instruments were then piloted, tested on an appropriate population of twenty households and one focus group in Kasokwe Sub-county.

#### **Reliability of Instruments**

An instrument is reliable if it measures consistently what it is supposed to measure. Even if it is administered by other researchers, it should produce the same results. In this study, the test-retest method was used to establish the instruments' reliability. In addition; the alternate form reliability method was used.

### **3:11:0 Ethical consideration**

The free and informed consent of each individual participant was obtained at the start of the study. Respondents were read for an informed consent form and explained the purpose of the study, what participation in the study were involved, how confidentiality and anonymity was maintained, the right to refuse to participate in the study or to withdraw from the study without any penalty, the benefits and risks of participating in the study. Study participants were not required to undergo any invasive procedures. Personal / sensitive issues were explored when a good relationship was established with the informant. The research team was urged and required to respect the culture of the respondents

during the data collection process. Confidentiality and anonymity was maintained by the use of code numbers on the questionnaire other than names. Information that was obtained was only used for the purposes of this study. The data collected was accessible only to the people involved in the study and the principal investigator stored the questionnaires and other study tools in a lockable filing cabinet.

### **3.12 Plan for dissemination of the research findings**

The findings were compiled into a report by the researcher.

A copy of the research report shall be submitted to Community Health department of Kabale University School of Medicine for partial fulfillment of the award of Bachelor's Degree in Environmental Health Sciences.

A copy of the research report shall be given to the Environmental health officer, Kaliro Town Council. The student will retain a copy for future reference.

### **3.13 Limitations and delimitations of the study**

**There were non-respondents bias.** Some respondents' caused some delay in answering questionnaires because most of them were in market places or far away gardens and thus hard to be seen. This was solved by appealing to them for cooperation and regular follow up.

**Lack of enough funds:** Funds were needed especially in purchasing stationery, typesetting, printing and photocopying. This problem was addressed by appealing to well-wishers and family members for support.

**Information bias:** Some respondents approached were reluctant in giving out information because of the sensitive of topic under study. This was solved by assuring such respondents that information was needed for academic purposes and would be treated with utmost confidentiality.

## **CHAPTER FOUR**

### **PRESENTATION, INTERPRETATION AND ANALYSIS OF FINDINGS**

#### **4.0 Introduction**

In this chapter, the researcher presents, interprets the findings of the study and analysis in line with the set objectives, which include; to assess the level of awareness on sanitation and hygiene in Kaliro Town Council, to determine WASH related diseases in Kaliro Town Council and, to assess the existing strategies for prevention and control of WASH related diseases in Kaliro Town Council.

The social characteristics of the respondents are also considered to establish their relationship with the variables under investigation.

#### **4.1 Gender of respondents**

The research further investigated the respondents' gender. The reason was to find out if both sexes hold same views or different ones on levels of **awareness** on WASH and in Kaliro Town Council, hand washing. This is presented statistically below;

##### **Gender of respondents**

The study revealed that 36.1% of the respondents were males and 63.9% females.

### **Age Brackets of respondents**

The researcher explored on the age of the respondents as a way to establish the hand washing practices among households in Kaliro Town Council in relation to age. The results are tabulated below;

#### **Age of respondents.**

The study revealed that 133 ( 45. 7%) of the respondents were below the age of 20 years, 52.2% were between 21-30 years, and 2. 1% were in the age bracket of 31 years and above.

#### **Marital status of the respondents.**

The study revealed that 31.6% of the respondents were found to be single, 47.4% of them were married and 21% revealed that they had divorced as indicated below.

#### **Education back ground**

The study results in relation to education level revealed that 61 (21 % ) respondents attained primary education, 67 (23.0%) the majority attained O level education, 64 (22%) advanced level, 54(18.6%) attained tertiary education and 45 (15.4%) never attained any formal education.

**Table 4.1. Socio-demographic data. (Age, sex and marital status and education back ground of the respondents)**

	<b>Respondents</b>	<b>Number</b>	<b>Percentage %</b>
	Below 20 years	133	45.7
	21-30	152	52.2
	31 and above	06	21
<b>Sex</b>			
	Male	105	36.1
	Female	186	63.9
<b>Marital status</b>			
	Single	92	31.6
	Married	138	47.4
	Divorced	61	21

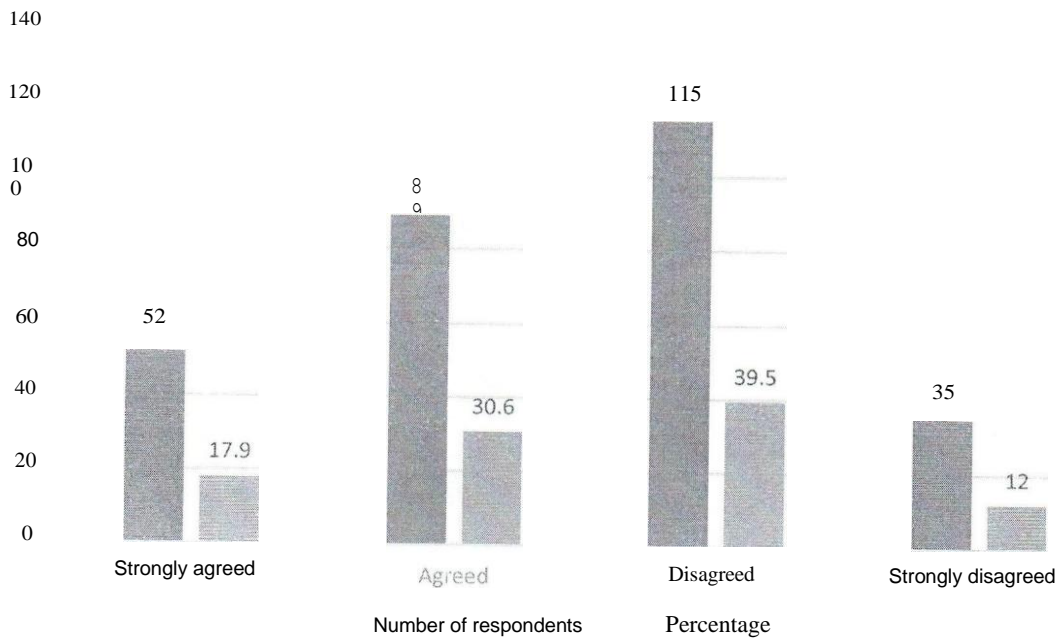
Education back ground			
	Primary	61	21
	0 level	67	23
	Advanced level	64	22
	Tertiary	54	18.6
	None at all	45	15.4

**Source:** Field data 2022

## **4.2 RESPONDENTS AWARENESS OF SANITATION AND HYGIENE**

After deriving and assessing all the necessary demographic data from the respondents questions were asked to derive answers that would enable the author to assess the knowledge level of the respondents concerning the topic of sanitation and hygiene practices.

Respondents were asked to indicate how much they agreed or disagreed with a series of statements. The first statement was that the use of hand disinfectant is better than hand washing with soap. Following the question of hand disinfectant being better than hand washing with soap, 52 (17.9%) of the respondents strongly agreed, 89 (30.6%) respondents agreed, 115 (39.5%) of the respondents disagreed, and 35 (12.0%) of the respondents strongly disagreed. Figure 4.1 below shows the results of the feedback from the respondents.



**Figure 2: Response whether the use of hand disinfectant is better than hand washing with soap.**

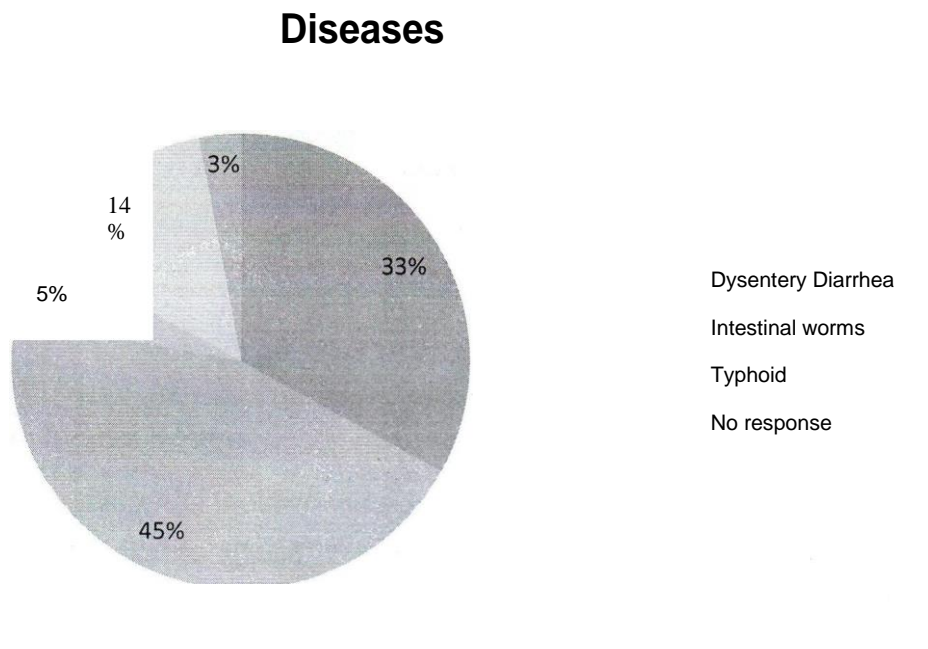
The second statement asked the respondents whether microbes on doors, toilet, and bathroom tap handles can cause illnesses to human beings. In response to the question, majority of them 273 (93.8%) answered yes to the question. Only 18 (6.2%) respondents answered No to the question.

### Presence of microbes



**Figure 3: Responses to whether microbes on door, toilet and bathroom tap handles can cause illness to human beings.**

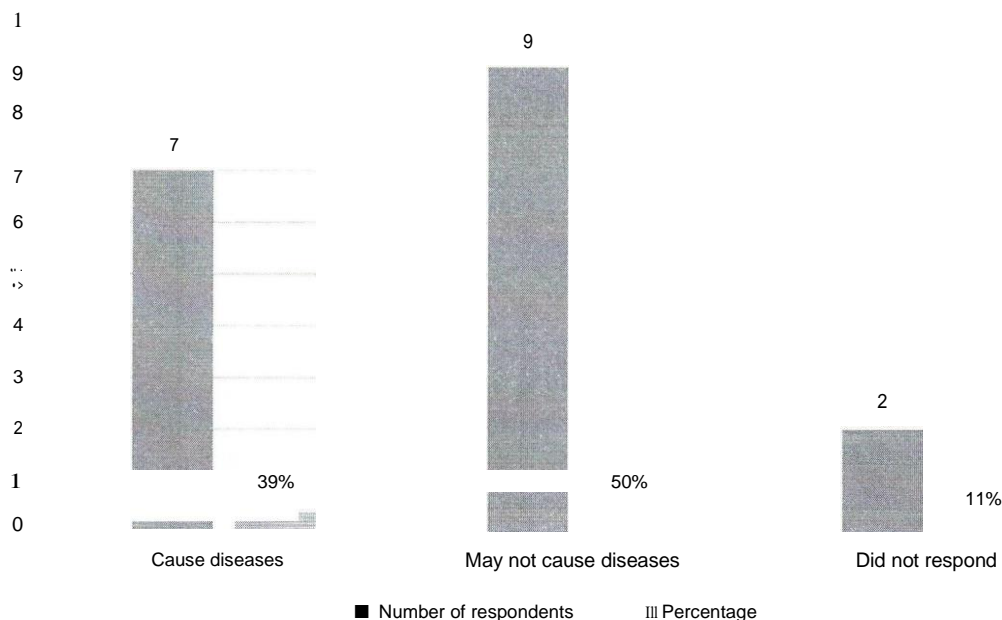
Results from the study further reveal that, out of 273 respondents who answered yes to the above question, 89 (33%) answered that Microbes door, toilet, and bathroom tap handles an illness caused Dysentery to humans, 123 (45%) of them stated that it can cause diarrhea, 15 (05%) respondents mentioned that it causes intestinal worms, 39 (14%) of them answered that it also cause typhoid to human beings and only 07 respondents did not respond to the question. Results are illustrated below.



**Figure 4: Responses to examples of illnesses caused by microbes on door, toilet and bathroom handles.**

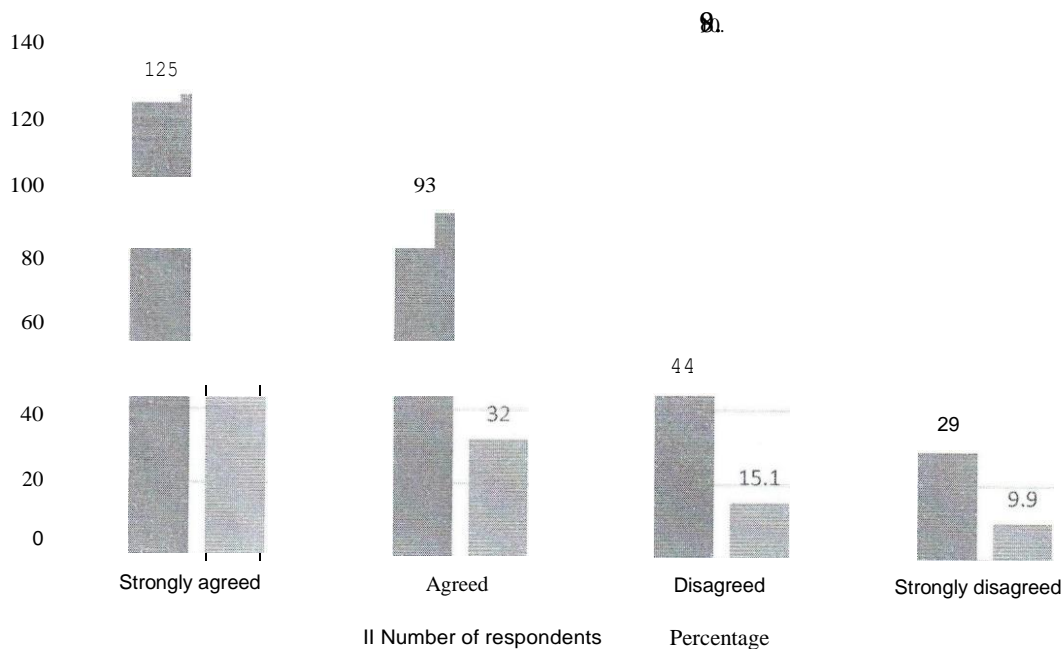
Out of 18 respondents who answered No to question, 07 (39%) of them reported that microbes on doors, toilet, and bathroom tap handles may be weak to cause diseases to human beings, 09 (50%) of them also answered that such microbes on doors, toilet, and bathroom tap handles may not cause disease to humans because they may practice hand washing after coming into contact with such places, and 02 (11 %) of them did not respond to the question. The results are represented statistically in the figure below.





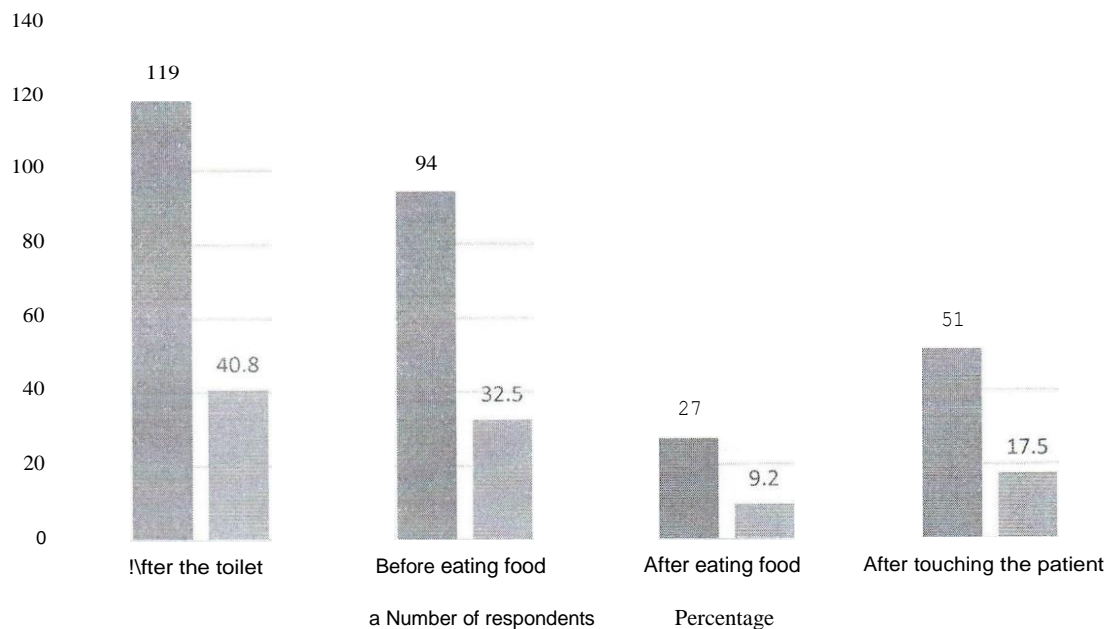
**Figure 5: Response to why microbes on doors, toilet, and bathroom tap handles may not cause disease to human beings.**

The third statement used as a tool to determine hygiene and sanitation practices was that proper hand hygiene prevents the spread of severe infections like diarrhea, Norn-virus, Hepatitis A and viral meningitis. The results indicate that out of 291 responses 125 ( 43 % ) of the respondents strongly agreed to the statement that proper hand hygiene prevents severe infections like cold, Norn-virus, Hepatitis A and viral meningitis. A number of 93 (32%) of the respondents also agreed to the above statement being true. Furthermore, 44 (15.1 % ) of the respondents disagreed with the statement and 29 (9.9%) strongly disagreed with the statement.



**Figure 6 Responses whether proper hand hygiene prevents the spread of severe infections like diarrhea, Noro-virus, Hepatitis A and viral meningitis.**

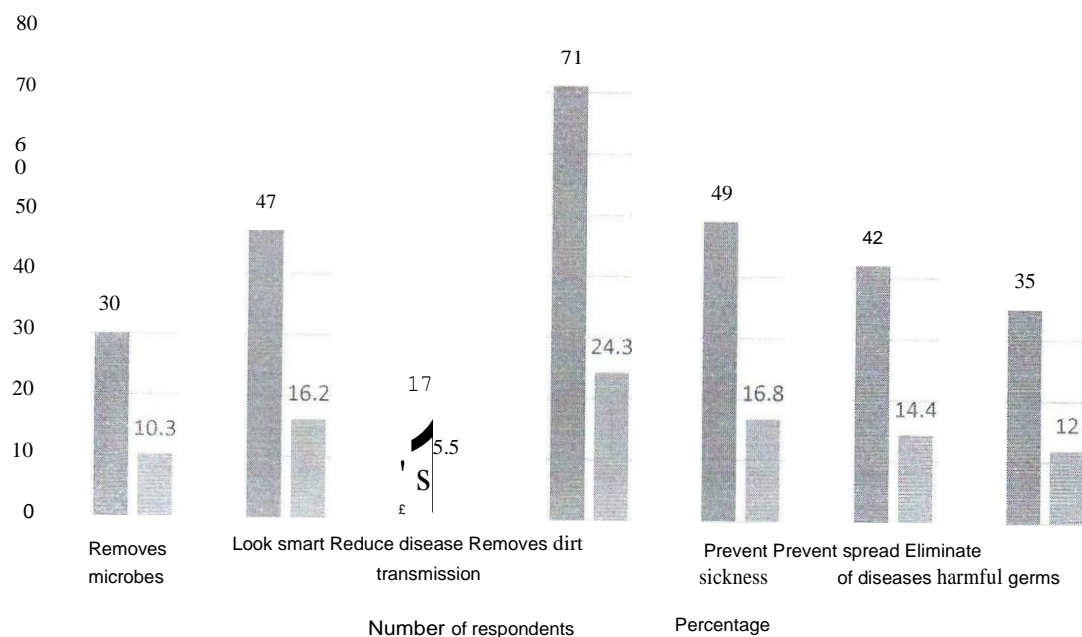
When participants were asked about when people should wash their hands, 119 (40.8%) of them reported that people should wash their hands after visiting the toilet, 94 (32.5%) respondents answered that people should always wash their hands before eating food. More to that, 27 (9.2%) of them 51 (17.5%) answered that people should wash their hands after eating food and another category of the respondents responded that people should wash their hands after touching the patients.



**Figure 7 Responses to when should people wash their hands**

Respondents were also asked about the importance of sanitation and hygiene, in response the question 30(10.3%) respondents answered that washing hands helps to remove microbes on hands which cause diseases, a total of 47 (16.2%) respondents answered that washing hands helps one to look smart, 17(5.5%) of them mentioned that washing hands helps one in reducing disease transmission, majority of them totaling to 71(24.3%) respondents helps people in removing dirt from their hands, 49(16.8%) also answered that hand washing is important in a way that it helps in preventing sickness, 42 (14.4%) respondents answered that hand washing helps to prevent the spread of disease causing germs which may cause diseases to human beings, and 35(12%) of them also answered

that washing helps to eliminate harmful germs amongst people.



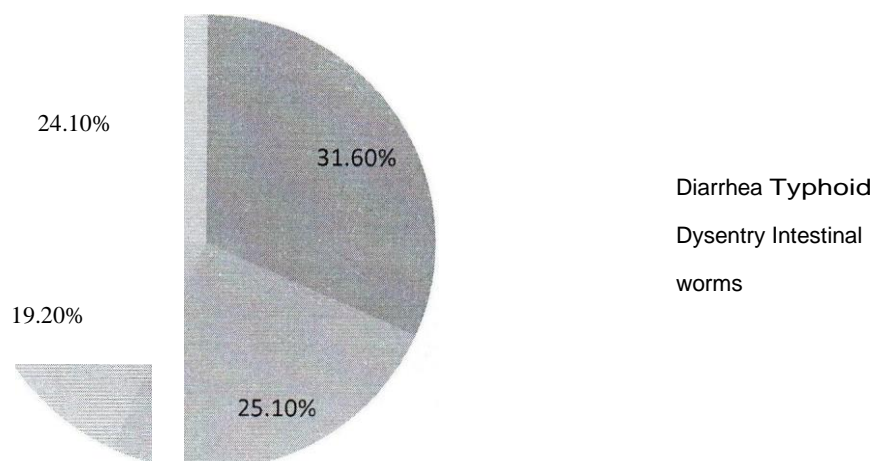
**Figure 8: Importance of washing hands**

**Table 4.2: Prevalence of WASH related diseases**

S/N	Disease	Prevalence	
		N.o of respondents	Percentage %
1	Diarrhea	92	31.6
2	Typhoid	73	25.1
3	Dysentery	56	19.2
4	Intestinal worms	70	24.1
5	Cholera	00	00

The findings show that 31.6% household were prevalent with diarrhea diseases, 25.1 % of the households had typhoid, 19.2% dysentery, 24.1 % intestinal worms and none of the households experienced cholera.

## Disease prevalence



**Figure 9: Prevalence of WASH related diseases.**

### RESPONSES ON STRATEGIES FOR PREVENTION OF WASH RELATED DISEASES

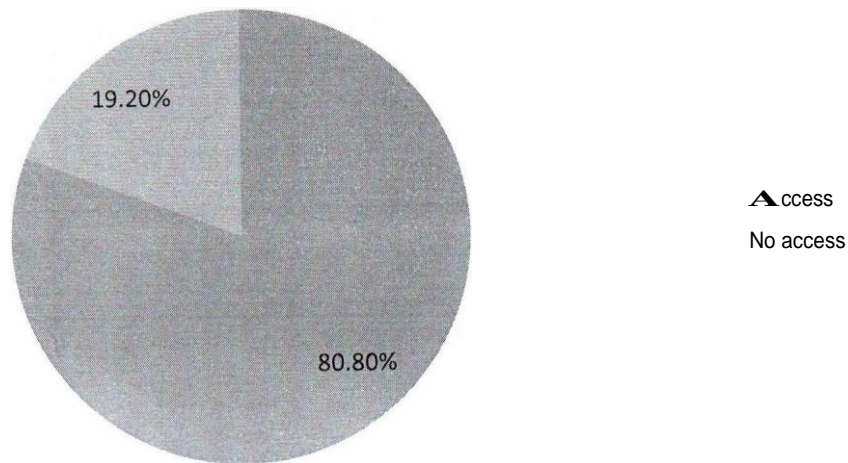
Out of 291 respondents 179 (61.5%) practice hand washing, 205 (70.4%) use toilets, 255(87.6%) access safe water and practice water treatment methods and 166 (57%) dispose of refuse properly as indicated in the table below.

**Table 4.3: showing practiced strategies for disease prevention and control**

S/N	Strategies for prevention and control	Frequency/291	Percentage
1	Hand washing	179	61.5%
2	Toilet use	205	70.4%
3	Boiling, water treatment (access to safe water)	255	87.6%
4	Refuse management	166	57%

Results from the study revealed that out of 291 respondents, 235 (80.8%) have access to hand washing facilities. Only 56 (19.2%) of the respondents answered No which means that they had no hand washing facilities installed a factor that would hinder them from washing their hands.

## Hand washing facility

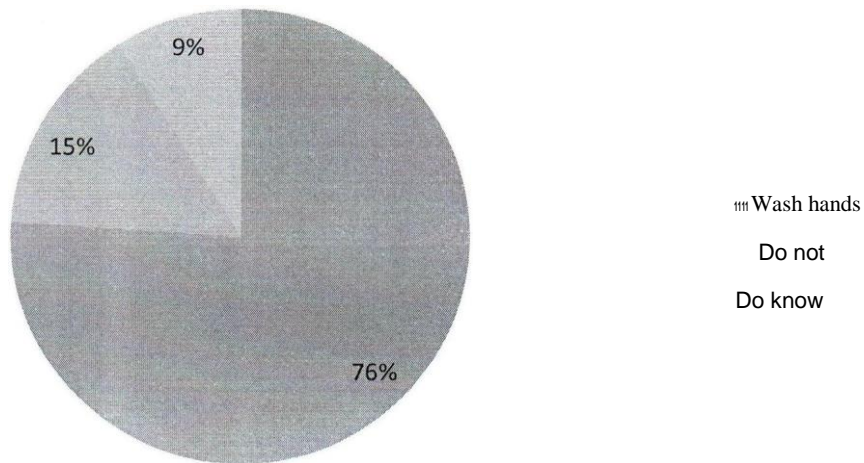


**Figure 10: Hand washing facility**

### Responses to the question whether people wash their hands

According to the study findings, when the respondents were asked whether the hand washing facilities were clean, 221 (76%) of the respondents answered yes meaning that the hand washing facilities were clean a factor which motivates them to wash their hands. 43 (15%) of them answered no to the question and 27 (9%) respondents did not respond to the question meaning that such facilities were not installed

## Hand washing practice

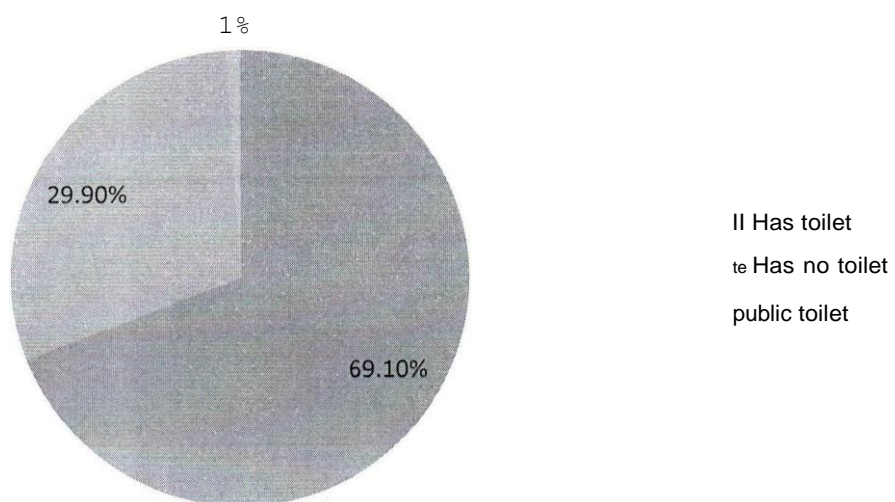


**Figure 11: Responses to hand washing practice**

### Responses to toilet use

After critical analysis of the findings, it was discovered that 264 (90.7%) of respondents answered yes to having toilet, 27 (9.3%) Of the respondents did not have toilets as indicated in the figure below.

## Toilet use



**Figure 12: Showing toilet use and access.**



## **CHAPTER FIVE SUMMARY,**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter provides the discussion, interpretation, conclusions and recommendations of the study findings on sanitation and hygiene practices. The discussion and interpretation of the findings flow from the entire responses as obtained from the respondents in the field. The discussion and interpretation have been presented according to research questions and in line with the study objectives. It is on the basis of discussion and interpretation of the study findings that conclusions and recommendations are made.

#### **5.2 Discussion**

The findings of the study are discussed in the table below following the 3 study objectives

##### **Objective 1: Assessment of level of awareness sanitation and hygiene in Kaliro Town council.**

The study was done in urban setting in Kaliro Town Council, there was fair gender representation of male and female giving a balanced perspective with in households. The socio demographic characteristics of the participants based on age, marital status and education status constitute good attribute to understand the community under study. The characteristics influence behavior change either for adoption of health life styles for prevention and control of WASH related diseases or not. Using UTA UT theoretical view point, the socio demographic conditions are the basis of for social influence and facilitating conditions. (Vankesh et al. 2003) upon which households consider the uptake of proper life styles. Understanding socio demographics is critical because of the diverse local actions and innovations on prevention and control of WASH related diseases; That engages men, women and children in a time bound campaign for households to move up along a sanitation ladder and improve structures and designs of toilets. (Sameer &Amsalau, 2009).

The study found out that a higher percentage of participants representing 93.8% responded that it's true that microbes on door, toilet and bathroom tap handles can cause

illness to human beings. This indicates that a larger amount of the respondents understand the concept of how microbes can be transferred from inanimate objects or surfaces to other individuals causing illness though there still exist a small group of households lacking that knowledge.

Study findings revealed high level of awareness on WASH diseases, 75% of the respondents agreed proper hand hygiene prevents the spread of severe infections like diarrhea, typhoid, dysentery, intestinal worms, noro-virus, Hepatitis A, and viral meningitis indicating more than half of the participants knew and understood the effectiveness of hand washing in preventing these illnesses. Only 25% respondents disagreed.

Households also expressed clear knowledge about the proper hygiene practices such as hand washing, toilet use, safe water chain and proper refuse management. Related studies have also underscored community knowledge as vital in prevention and control of WASH diseases for example Plan International studies in Asia and Africa. (Kar & Chambers, 2008). Community sensitization meetings have been held by government institutions like Town councils to increase level of awareness on WASH diseases.

However, government support is dependent on donor support that have short time, it was not clear how this would be sustained.

### **Objective 2: To determine the WASH related diseases in Kaliro Town Council.**

The findings revealed that most respondents 31.6% had a diarrhea case in their household in the last two weeks from the time the study was conducted, 25.1 % suffered from typhoid, 19.1 % dysentery, 24.1 % intestinal worms whereas none of the households suffered from cholera. As revealed in the study, 29.9% have no latrine hence practice poor human excreta disposal a clear factor influencing the high prevalence of the WASH diseases above. It has been reported in some studies that open defecation status is fragile. Sometimes toilets collapse or fill up and some people revert to open defecation. (Kar & Chambers, 2008 Tyndale et al. 2013) A study done by Plan International in 2013 a cross four African countries: Ethiopia, Kenya, Uganda and Sierra Leone, reported a 13% slippage rate (Tyndale et 2013).

Out of 291 respondents, it is indicated that a higher percentage representing 87.6% revealed that they had hand washing facilities in their homes. It's good that majority indicated that they have facilities for hand washing installed in their homes but it could better if such facilities can also be extended to homes which do not have them.

According to the results from the field, out of 291 responses to the question, Majority of the respondents representing 67% indicated that their inability to provide soap for hand washing.

**Objective 3: To assess the existing strategies for prevention and control of WASH Related diseases in Kaliro Town Council.**

Results from the study indicated that majority of the participants were aware of the proper sanitation and hygiene practices like hand washing, toilet use, water treatment and proper refuse management. This means the ministry of health and stake holders of the Kaliro Town Council have played their role of sensitizing the households about the good practices for prevention and control of WASH related diseases.

Out of 291 respondents, majority of them representing 76% indicated that they wash their hands with soap before eating food. 15% do not wash and this could be due to lack of hand washing facilities, non functional hand washing facility and hand washing with no water. Though this is apposite finding, major gaps in the access of hand washing and knowledge were identified (9% don't have knowledge) which should be addressed during future training sessions.

### **5.3 Conclusions**

The following conclusions were made basing from the study findings

The study revealed that 76% of the respondents wash hands, 69.1 % of the respondents have access to toilets. The remaining smaller percentages of 29.9% and 30.9% respectively put house holds and entire community at a risk of contracting WASH related diseases.

Though 75% of the participants indicated that hand hygiene prevents the spread of severe infections like common cold, noro-virus, Hepatitis A, Viral meningitis, it means that majority of them are knowledgeable about it and therefore feel concerned to practice

hand washing as a way of avoiding these diseases. The remaining 25% of the participants who indicated that they were not aware that hand washing prevents such infections could still be a source of these infections to even those who properly practice hand washing. To avoid this, the ministry of health should ensure that people in all homes are sensitized about this as a way to avoid and prevent these illnesses.

According to the study findings, 89% of the participants revealed that they have access to water (or washing hands which means that the rest have no access to such water in their homes. This therefore increases the chances of these member who do not have access to water not to wash their hands which puts them at a risk of developing diseases associated with poor hand washing practices like diarrhea, dysentery, cholera, typhoid and others. To overcome this, the government should ensure that all households have access to safe water to enable them wash their hands, do personal hygiene and ensure food hygiene.

The study findings revealed that 76% of the participants had hand washing stations installed in their homes which could be a source of water for hand washing. However, according to results, it is indicated that 24% of the hand washing facilities are not functional which has remained a challenge to many members who would want to wash their hands while at home.

Although majority of the households reported that they practicing hand washing, results in table 14 indicated that 67% of them were not provided with soap to use. This has negatively affected the hand hygiene practices of the members because microbes which may be on their hands may not be easily removed if they wash their hands without soap. The household heads should ensure availability of soap at all times.

According to the results, 21 % of the participants in households are not aware of the existing policies and guidelines for hand washing, Public Health Act Rules and Regulations, COVID-19 Standard operating procedures. This means that even those who report that they wash hands are not doing it correctly which puts them at risk of developing diseases associated with poor hand hygiene.

Only 76% of the participants indicated they wash their hands with soap before eating food. 24% of the respondents do not wash hands, this is a bad practice and should therefore be discouraged among household members because those simply wash hands

without using a soap may be eating contaminated with food which could cause them to develop the associated diseases like typhoid and dysentery.

According to results, it was revealed that 64% of the participants dispose off refuse crudely. This is a very big percentage and it shows a wide gap which should be filled because if it is not addressed, it would increase the chances of spreading diseases like diarrhea, typhoid, diarrhea amongst the population.

### **5.5 Recommendations**

The study recommends that further community sensitization should be implemented Kaliro Town council Health department to create awareness on proper disease prevention and control strategies and ensure behavior change in the households and community at large.

The study revealed that MOH developed the Uganda Sanitation and Hygiene guidelines (2017) to guide government agencies and CSOs in the implementation of Sanitation approaches.(CLTS). However, these guidelines are in english and not widely disseminated to the communities. The researcher recommends that government should translate the Uganda Sanitation and Hygiene guidelines (2017), embed community bye-laws to ensure effective sanitation promotion and sustainability. In addition, to strengthen community leaders, there is need to train them on these guidelines.

Based on findings in this study, health promotion and behavior change communication regarding adoption of health life styles should be led by key stake holders in the community to ensure sustainability.

The study recommends that maximum consideration should be given to activities in Health department during planning and allocation of budget by the Town Council planning unit so as to ensure effective implementation of activities.

The ministry of health should ensure that all households are introduced to the existing policies and guidelines of disease prevention and control through sensitization meetings and workshops.

Ministry of health and Kaliro Town Council should ensure that households are sensitized of the importance of proper refuse management.

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## **CONSENT FORM**

Assessing the level of awareness on WASH related diseases in Kaliro Town Council.

### **Consent and Introduction**

Dear participants, my name is Masanja Alex, a student of Kabale University, undertaking a Bachelor's degree in Environmental Health Sciences (BEHS) OF Kabale University. Am conducting a research on level of awareness on WASH related diseases, specifically in Kaliro Town council, Kaliro District. The study seeks to determine the level of awareness on WASH related diseases in Kaliro Town council so as to ensure effective prevention and control. You have been randomly selected as a community member within your area to participate in this research study. Your participation in this study is voluntary. Your rights and welfare as a study participant will be upheld and all the information received during this research will be used for academic purpose only.

Do you affirmatively

agree to participate in this study? **Yes or No**



## Questionnaire

*Assessing the level of awareness on WASH related diseases in Kaliro Town*

*Council.*

### Demographic information

- (A) District: .....  
(B) Sub county:..... Parish: .....  
(C) Village .....  
(D) Specifics of respondent:  
(a) Sex..... (b) Age ..... (c) Occupation .....  
(d) Education:: ..... ..

1. Do you know about WASH?

- (a) Yes (b) No  
(c) If yes, who made aware of WASH?  
(i) Technical Staff  
(ii) Local Partner Staff  
(iii) User Committee  
(iv) School Teachers  
(v) Political Leaders  
(vi) If any other, please explain: .....

2. Mention some of the good WASH practices you know?

.....

3. Mention some of the bad WASH practices you know?

.....

4. Mention some of the WASH related diseases in your area .

.....  
.....

5. Has anyone in your family fallen sick in the last two weeks? 1. Yes 2. No

6. If yes, what disease was she or he suffering from?

.....  
7. How did you find out that he or she is suffering from the above disease?

8. What is the source of water in your area?

9. How far is the water area?

.....

10. How do you protect the drinking water in your home?  
 ... ..
11. Do you have a hand washing facility at your home? 1. Yes 2. No
12. When do you wash your hands?  
 .....  
 13. ~~What do you think would happen~~ What do you think would happen if you don't wash your hands after  
 visiting a toilet? .....
14. How frequent do you wash your face?  
 1. Once a day                      2. Twice a day                      3. Thrice a day 4. Others,  
 specify .....
15. How do you clean feces of under-fives?  
 ... ..
16. Did any of the family members encounter WASH related disease in the last  
 2 weeks?                      s 1. Yes                      2.No.
17. How do you dispose of the dry waste?  
 .....  
 18. Do you have a latrine?                      1. Yes                      2. No.  
 19. Do you use it regularly?                      1. Yes                      2. No  
 20. If no, where do you defecate?  
 . .....  
 21. Do you have a hand washing facility at the toilet? 1. Yes                      2. No.

## **Appendix i. Guidelines for Focus Group Discussion**

*(Health Assistants and Village Health Teams, Community health promoters and local leaders)*

1. What are settlement patterns and cultural beliefs and habits in relation to?
  - a. Source of water for humans and live stock
  - b. Water treatment
2. What are the cultural habits/ beliefs related to hygiene and sanitation?
  - a. Sharing latrine among family members
  - b. Use of human waste (feces) for fertilizers
3. Consequences of:
  - a. Unsafe drinking water
  - b. Poor personal hygiene and environmental sanitation
4. What are the habits of keeping animals with in the house hold?
  - a. Whether they are kept separately and why?
  - b. If they are kept together with in the household, are you aware of the consequences?
5. Possible challenges during water collection.
6. Asses the eve of sanitation and hygiene knowledge: whether they have WASH promotion knowledge.
  - a. when did they get it, who told them, where did they get it?
  - b. What do they remember?
  - c. If they noticed any behavioral changes, what are they?
  - d. **If** they changed their practices after hearing the message, what did they change?
  - e. Discuss if there are any changes in the health of the family/community.
7. Methods of hygiene and sanitation education and which one was effective.
8. **If** there's water and sanitation service, discuss the management of these services. a. Who is responsible? b. Role of members.
9. What needs to be improved in the future?

## Appendix ii. Guidelines for Checklist/Observation of the Households

- |   |   |  |  |
|---|---|--|--|
| (a) Availability of toilet.   | Yes. No   |  |  |
| (b) Functionality of a toilet.  | Yes. No.  |  |  |
| (c) Cleanliness of a toilet.  | Yes. (floor and wall dry, free of dirt and feces) | No. (floor and wall dump, dirty, dusty and feces seen scattered) |  |
| (d) Availability of hand washing facility.                                  | Yes No.   |  |  |
| (e) Functionality of hand washing facility.                                 | Yes. No.  |  |  |
| (f) If the hand washing facility is available, does it have water and soap? |   |  |  |
|   | Yes. No.  |  |  |
| (g) Availability of safe solid waste disposal facility or system.           | Yes.  | No.  |  |
| (h) Availability of safe liquid waste disposal facility.                    | Yes.  | No.  |  |
| (i) Availability of safe and adequate safe water supply.                    | Yes.  | No.  |  |
| (j) Does the water point provide water in the dry season?                   |   | Yes.   |  |
|   | No.   |  |  |

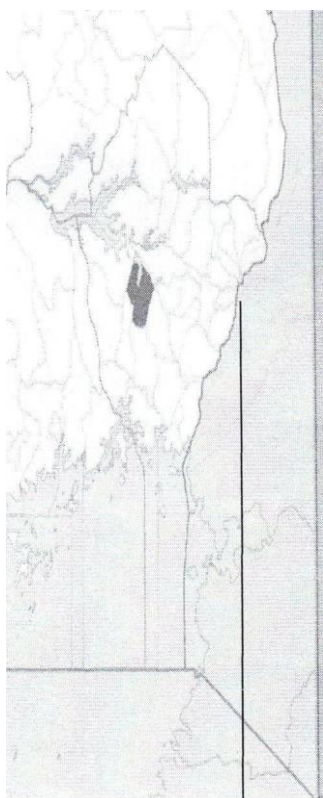
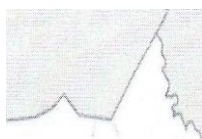
Thank you for participating in this study.

End.

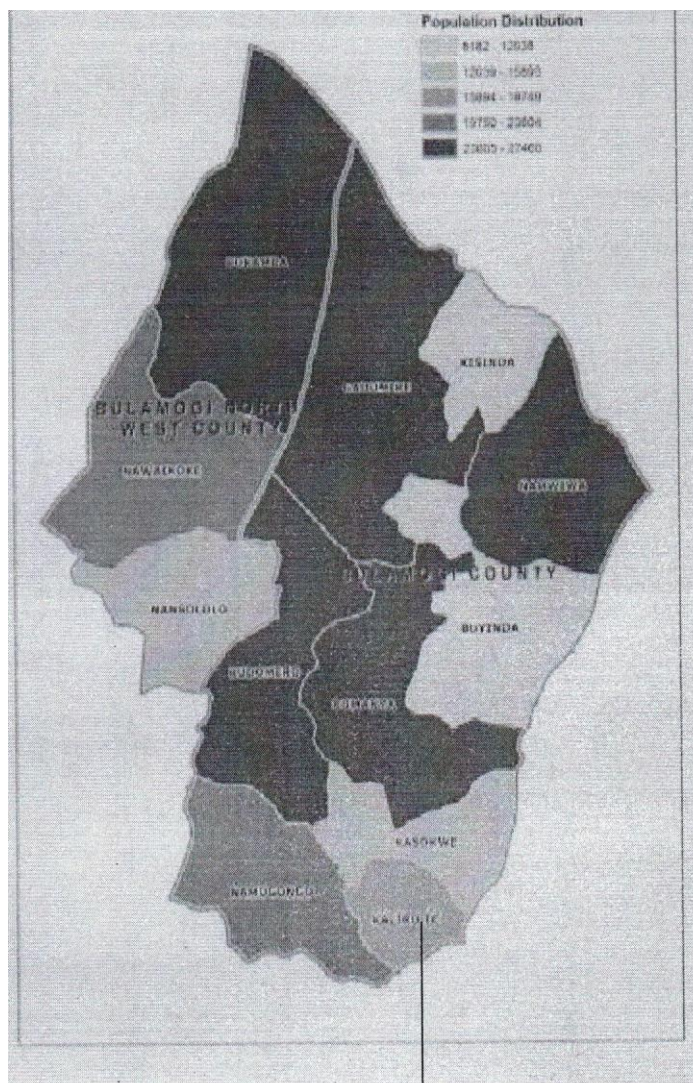
Appendix iii. WORKPLAN AND BUDGET

S/N	ACTIVITY	TIME FRAME					
		W1	W2	W3	W4	W5	W6
1	Introduction and obtaining permission.	X					
2	Training Research assistants.	X					
3	Data collection		x	X	x	X	
4	Data analysis and report writing						x

## Appendix v. Map of Uganda showing Kaliro District and Kaliro Town Council



Kaliro District



Kaliro Town Council.