

FACTORS INFLUENCING HUMAN WASTE MANAGEMENT IN SANGA
TOWN COUNCIL- KIRUHURA DISTRICT

BY

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FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A
BACHOLORS DEGREE IN ENVIRONMENTAL HEALTH
SCIENCE

FEBRUARY, 2022

DECLARATION

I Mugasha Bindyomunda Athur, hereby declare that this is my original piece of work and has never before been submitted to any university or any higher institution of learning for any academic award.

Signature ~

06/05/2022

MUGASHA BINDYOMUNDA ATHUR

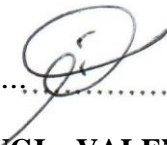
2018/KHS/0913/W

RESEARCHER

1.

APPROVAL

I certify that this research report has been written under my supervision and guidance.

Sign.....

Date: 06/05/2022

MR. BIRUGI VALENTINE

UNIVERSITY SUPERVISOR

DEDICATION

I dedicate this work to my dear beloved Son; Kevin Mugasha and Daughter Elizabeth Ngasha to motivate them in the future to work harder in their academics.

ACKNOWLEDGEMENT

My great regard goes firstly to the almighty God, and secondly to Kiruhura District Local Government for having released and allowed me join school and then, Kabale University for accepting me upgrade *in* this prestigious University.

Precisely, let me thank my dear wife Mrs. Kyarisiima Sylvia for the generous financial support she rendered me and for encouraging me to work hard and continue studying

In addition, I do extend my gratitude and appreciation to my colleagues who academically supported me through discussions and this inspired me to keep holding on to *it*.

Lastly, sincere regards to all my lecturers and the entire support staff of Kabale University, without their guidance and splendid work nothing would have been achieved.

Special appreciation also is extended to the computer staff for typesetting and binding this work with its current form.

LIST OF ACRONYMS

BOD	Burden of Diseases
CLTS	Community-Led Total sanitation
DHMT	District Health Management Team
HIV/AIDS	Human immunodeficiency virus/ Acquired Immune-Deficiency Syndrome
HSSP	Health Sector Support Programme
HWM	Human Waste Management
KPC MOH	Knowledge Practice and Culture
PHA	Ministry of Health
PHC	Public Health Act
UDHS	Primary Health Care
UNICEF	Uganda Demographic Health Survey
VIP	United Nations International Children's Emergency Fund.
WHO	Ventilated Improved Pit Latrine
	World Health Organization

OPERATIONAL DEFINITIONS OF TERMS

Excreta disposal:	Is safe management of human faeces and urine to prevent the occurrence of nuisances and transmission of diseases.
Excreta:	Same as human waste meaning by-products composed of human faeces and urine.
Hygiene:	A condition or practices conducive to maintaining health and preventing disease, especially through cleanliness.
Morbidity:	High rate of sickness as a result of poor excreta disposal.
Mortality:	Death rates as result of human waste related diseases.
Pit Latrine:	A pit excavated for purpose of receiving faeces and urine and has squat hole, superstructure.
Researcher:	A person undertaking research project.
Respondent:	Sampled person selected from the study population to give representative information of the whole population in a case study.
Sanitary Latrine:	A latrines described as sanitary pit latrine when properly ventilated with no smell.
Sanitation:	Refers to personal and environmental cleanliness.

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CHAPTER ONE

BACKGROUND INFORMATION

1.0 Introduction

This chapter contains background to the study, problem statement, general objectives, specific objectives, and research questions, significance of the study/justification/rationale and scope of the study.

1.1 Background to the study

Sanitation is a basic right and fundamental ingredient of human dignity (WHO, 1988). Human waste disposal is one of the components of environmental sanitation which includes among others food hygiene, safe means of human waste disposal, maintenance of personal hygiene, safe disposal of solid waste, safe water chain, vector and vermin control. Improved practices on sanitation and hygiene will not only reduce health risk but will also result into "opportunity cost gained" both in the family and society.

Globally the concern on improving hygiene and sanitation especially hand washing before eating and after visiting toilet and sanitary disposal of human waste are viewed as efforts in reducing morbidity and mortality.

Sanitation which comprises of human waste disposal is a key component in the eradication of poverty and improvement of health in the society. In Sanga Town Council, Kiruhura District, the issue of how to manage human waste is a major problem in most categories of the population.

Proper use and maintenance of pit latrine according to the National Sanitation Guidelines (2008) involves; not to soil the floor, squat hole and the wall, sweeping and smearing in case of rammed floor, hand washing with soap and adequate water after latrine use. In Uganda, the average latrine coverage is 47.6 % (2013) while in Kiruhura District, it is 84% and Sanga Town Council is 86%.

Poor human waste disposal is the major cause of morbidity and mortality rates among the communities in the developing countries (Nyang'echi, 1992).

Globally, it was accepted by WHO that in both developed and developing countries, many communities die due to excreta related diseases which increase according to poor human waste management (Munhuyi and Akuma, 1994).

1.2 Problem statement

Poor human waste management is the third leading cause of diseases in Sanga Town Council and it is the most crucial challenge to the authority. According to Schmoll et al (2006) improper disposal of human waste is a principal cause of transmission of pathogens in the environment.

Improvement in human waste management will provides significant reduction in excreta related diseases such as typhoid, dysentery, hookworm, ascariasis etc.

Globally, (WHO) estimates that 2.2 million people die annually from diarrhoeal diseases and in Uganda as a developing country, particularly in Sanga Town Council, Kiruhura District, over 3500 OPD cases in Sanga H/CIII are attributed to diarrhoeal diseases (OPD HMIS report, 2020).The latrine coverage between 2015-2020 *lies* between 65%-85% which is also in the same range like that of the District 84% by 2020 according Health Management Information system (HMIS)

About 2% of the affected categories include households of child headed families, HIV/ AIDS families; the low coverage is mostly recorded during rainy season from March to October every year.

Efforts should be put to improve human waste management through home improvement campaign programs and Follow up Mandona approaches (CLTS). Various factors such as land shortage, lack of construction materials, poverty, government policy and community negligence could have been responsible for the low latrine coverage. This may result in hindrance to production, development and if not addressed and immediate intervention taken may lead to increase of diarrhoeal diseases and death. Thus the problem has prompted the researcher to carry out a study on factors influencing human waste management in Sanga Town Council, Kiruhura District in order to come out with possible recommendations to improve human waste management in the area of study.

13 Objectives of the study

13.1 General objectives

To investigate the factors influencing human waste management in Sanga Town Council, Iiruhura District so as to develop appropriate interventions.

13.2 Specific objectives.

- 2

1.4 Research Questions.

2. What are the environmental factors influencing human waste management?
3. What are the socio-cultural factors on human waste management?
4. What measures can be undertaken to improve on human waste management in Sanga Town Council?

1.5 Justification/significance of the study.

The study will be of significance in;

- ✓ Creating awareness on the methods of human waste disposal.
- ✓ It will help promote sustainability by coming up with long lasting solutions to address the challenges arising from poor human waste management such as diarrhea, cholera etc. Through community participatory approaches like home improvement campaigns that will in turn be beneficial to the health of the people in Sanga Town Council and the District at large.
- ✓ By deriving mechanisms that discourage bad cultural practices that lead to poor human waste disposal in community by the health department and promote good practices e.g. use of latrine and Collecting data, this will help Local Authority in planning and policy

formulation that can be implemented to solve the problem of poor human waste management.

1.6 Scope of the study.

The scope of the study included the content, geographical scope, and time scope study for the study.

1.6.1 Geographical scope.

Sanga Town Council has 12 cells/villages of Sanga A, Sanga B, Akabaare, Ntuura, Rwebishuri, Kibega, Kyakanyansi, Rufuka, Kyamaani, Byembogo, Kasharara and Kakagate in the four wards of Ekizimbe, Sanga, Nombe and Nkongoro.

1.6.1 Content study

The study aimed at investigating factors influencing human waste management in Sanga Town Council, Kiruhura District so as to develop interventions in relation to prevention of faeco-oral diseases and derived measures to the problems resulting from poor human waste management disposal.

1.6.2 Geographical study.

The study was carried out in 12 cells/villages of Sanga A, Sanga B, Akabaare, Ntuura, Rwebishuri, Kibega, Kyakanyansi, Rufuka, Kyamaani, Byembogo, Kasharara and Kakagate in the four wards of Ekizimbe, Sanga, Nombe and Nkongoro in Sanga Town Council- Kiruhura District.

1.6.3 Duration of study

The study was carried out for a period of one month, from May to June which is in fourth quarter of the year 2021.

1.7 Limitations of the study.

The researcher anticipated to address the following limitations during his study:-

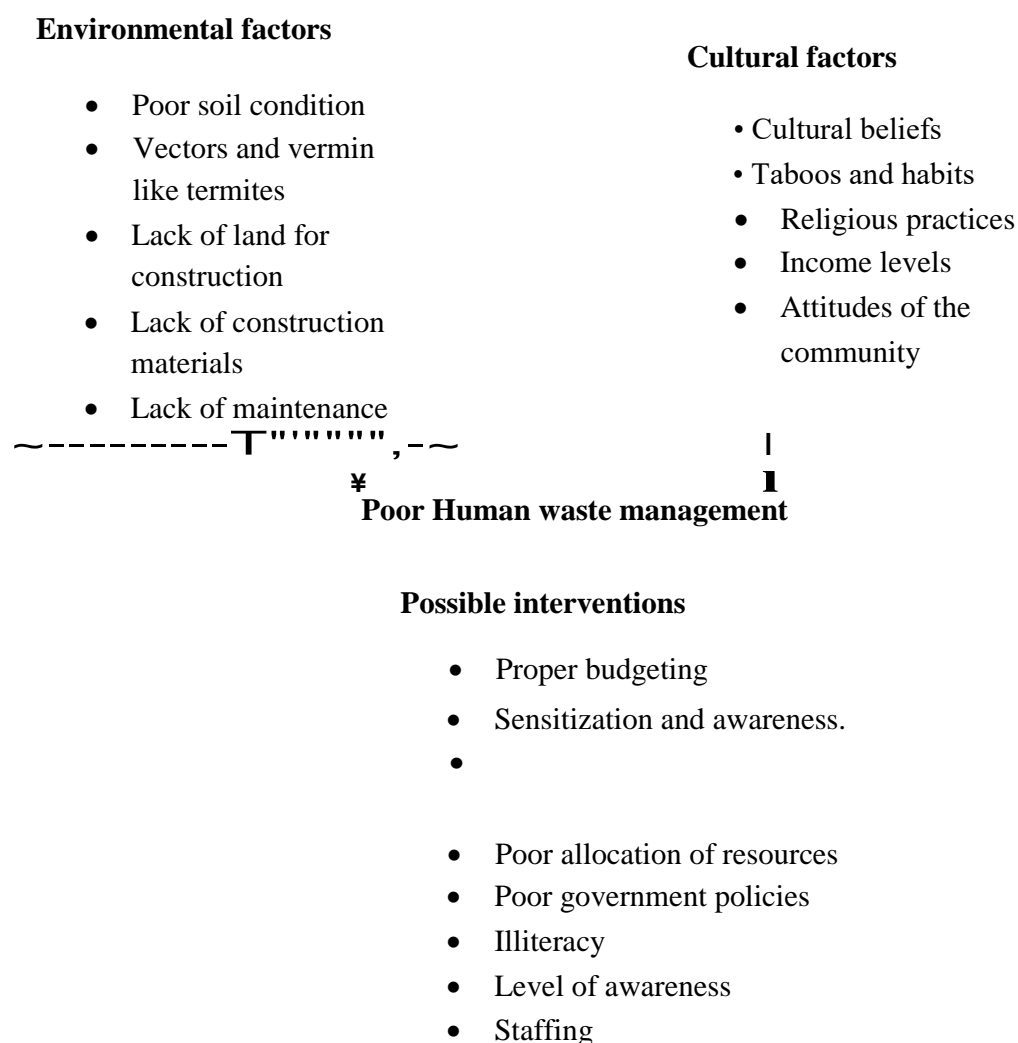
- Unfavorable weather conditions such as heavy rains.

- Unwillingness by the respondents to give detailed information during the study.
- Limited timeframe for the research study.
- Low turn-up of community towards the sanitation progress.

1.8 Conceptual framework.

The brief description of the possible factors for poor human waste have been grouped under Environmental factors, Service related factors and Socio-cultural factors. These include the level of awareness of the communities, their attitudes, cultural beliefs, taboos, government policy, religious practices and poor soil texture that may contribute to poor human waste management.

Figure 1.1.1: The Conceptual framework.



The figure above illustrates some of the possible factors influencing human waste management in Sanga Town Council, Kiruhura District among others includes the following; attitudes of community towards human waste management, lack of awareness and knowledge among the community members on the likely outcomes of indiscriminate disposal of human waste, poor exemplary leadership which is likely to be caused by lack of motivation from the local leaders by government and support organization.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter covers various literatures from different sources on factors that affect human waste management such as service related factors, environmental factors and socio-cultural factors.

2.1 Environmental factors

These are any factors that influence living organisms and they include ambient temperature, amount of sun light and PH of water soil in which an organism lives.

In the study carried out in Nakawa Division, Kampala found out that 7.5% of the respondents believed that neighbors should not share with them latrine for fear of disease transmission and witchcrafts. In the same study, it was found out that among the difficulties militating against the effective use of latrine are the facts that latrines were soiled with faeces, having offensive smell and flies (Omer, 2003).

Successful excreta disposal programmes depend on an understanding of people's varied needs and their participation. It may not be possible to make all toilets acceptable to all groups. Special toilets may need to be constructed for children, older people and persons with disabilities e.g. toilets with seats or handrails or provision of bedpans, potties or commodes.

Approximately, 2.5 billion people across the globe have no access to basic sanitation (WHO 2000). Moreover, while building improved sanitation facilities is a crucial health intervention realized, without proper use and maintenance of the facilities and good personal and domestic hygiene the aim of proper human excreta cannot be realized (Carr and Stress, 2001).

A number of studies show that latrine construction is easier to achieve than latrine use. There is wide spread evidence of the importance of involving households in planning and construction of latrines to ensure satisfaction and maintenance system. People's preferences should always be taken into account for proper latrine use which is more about behavior change much beyond the provision of structure and emphasis should be on proper use of latrine, hand washing after latrine

use, maintaining a latrine in adequate sanitary state and consideration of factors of attitudes and habits than mere existence of structures (Burfaedereci et al, 1998).

In many parts of Uganda, use of latrine is inappropriate even where they are available. **Nature of the soil**

The principal areas **in** which difficulties are encountered in the construction of pit latrines are those with rocky and sandy soils, those with high water tables, where there is danger of contaminating nearby water supplies.

Fracey, Pickford and Reed (2003) noted that loose ground, hard rock or ground water near to the surface makes excavation difficult. Hand tools may be broken in such hard rocky soil. In loose soils the pits may collapse after superstructure has been constructed due to weight exerted by superstructure and slab and roofing materials.

High water logged soil

Cairn and Feachmen (2004) noted that in areas where there is high water table, the construction of pit latrines become difficult . They tend to collapse **in** wet season which provide habitat for vectors and vermin breeding.

Insects (Termites).

Many countries that are implementing the Pan African CL TS project, point to termites as one of the major causes of latrine breakdown in ODF villages. This is posing a sustainability challenge, as communities get tired of re-constructing latrines that are degraded by termites year after year (Niwagaba et al, 2006).

Material

According to HEW ASA (2008), the use of local available materials for construction of latrines is highly recommended. It enhances participation of the affected population to use and maintain the facilities, providing population with construction tools will also support this aim.

Land availability

in areas with land shortage or where the plots are small it becomes impossible to have adequate space to construct pit latrines in case old ones are filled up.

Inadequate land to construct latrines in communities has led to some households near schools to use school latrines leading to overcrowding and the latrines fill faster and are poorly maintained leading to epidemic diseases such as cholera (HSSP 11, 2005).

2.2 Socio-cultural factors

These are customs, lifestyle and values that characterize a society for example religion, attitude, economic status, class, language, politics and law.

Underlying causes that are important factors with diarrhoea in Teso district includes; poor disposal of child faeces and poor hand washing habits of caretakers. It was found that less than 2% of the mothers in the KPC survey practice all the 4 hand washing behaviors listed; after visiting the latrines, before preparing food, after changing babies' nappies and feeding the baby (World Vision, 2004).

A study carried out by Mulabya (2003) indicates that soiling of the floor with faeces was a big hindrance to latrine use. Study done in Uganda showed that even when the latrines were available, people still use bush and banana plantation especially children and pregnant mothers who cannot use pit latrine because of cultural reasons and fear of falling in the pit latrine (Mukwaya et al, 1998).

According to Dr.Elima, (1999) said culture also posed a big challenge in Karamoja, people in Karamoja believe that they should not mix human waste with in-laws and that it was a taboo for pregnant women to ease themselves from latrines. As a result they resort to open defaecations.

Additionally, "the initial assumption of policy maker behind poor sanitation and hygiene habits in Karamoja were; negative attitudes of people towards pit latrines; cultural taboos or beliefs that bar their use, lack of information and inadequate knowledge of the nature and uses of latrines. Other factors included highly mobile nature of population and an apparent resistance to new ideas such as building latrines (Erihedge, 2003)"

UNICEF found that by virtue of their reproductive roles, women are responsible for proper maintenance and ensuring hygiene education of family members. Women however, have a low decision making status at household level and especially in rural areas where they depend on men for financial support. This calls for conscientisation at the policy level in order to devise strategies for empowering women to participate traditional roles (UNICEF, 2008).

According to International Rescue Committee (2003) a frequent barrier to latrine adoption is difficulties in operation and maintenance . Odour and insects such as termites, flies and mosquitoes, these problems have often been quoted as deterrents to use of latrines.

The type of sanitation disposal facility adopted depends on time of the intervention, the preferences and cultural habits of the intended users, the existing infrastructure ,the availability of the water(for flushing and water seals),the soil formation and of construction materials (Niwagaba C, Asimwe A.F, 2005).

According to Perez (1999, 26), lack of sanitation(latrine facilities) put people at higher risk for diarrhoeal diseases than lack of water.

Attitudes of the local community towards human waste disposal.

Although human waste may contain the necessary nutrients for plant growth, Local Authorities in Ghana spend huge sums of money to dispose them as waste. Re-using human waste for agricultural purposes saves expenditure for chemical fertilizers, improves soil fertility, reduces poverty and ensures food security. People's attitudes and perceptions about human waste vary between cultures and even within specific cultures. A study carried out to explore attitudes and perceptions among a peri-urban agricultural community towards sanitized human waste and its' use found that there is a general negative attitude to fresh excreta and handling of it. (Mariawahs et al, 2011).

However, the residents accept that human waste can be used as fertilizer, but they are not willing to use it on their own crops or consume food fertilized with human waste. The study recommends open discussions in the community for a successful implementation of ecological sanitation (Mariawahs S, Drangert, 2011).

23 Possible interventions.

If waste disposal is to be carried out efficiently, hygienically and economically, heavy capital out lay will be needed *in* whatever system of disposal *is* adopted.

in the highly industrialized countries, up to 20% of municipal budgets are spent on the collection and disposal of waste and even more will be requested if the job is to be done adequately. (K. Park 2005).

Nigeria cities are largely characterized by public provision of urban infrastructure services. Poor :financing is a characteristic of public waste service provision in Nigeria. The annual resource allocation to sewage and drainage, refuse services by all the states in Nigeria fell from nearly US Dollars 17.4million for the period of 1990-1992. (Environment and urbanization volume12,NO 2. October 2000 page 105).

It is imperative to note that local government have the mandate to mobilize and allocate resources, plan and budget for the services they are responsible for. (MOH, GRANTS MANAGEMENT MANUAL, September 2013 page 3)

In 2008, UNICEF also explained that by means of their reproductive roles, women are responsible for proper maintenance and ensuring hygiene education to family members. However, women have a low decision making status at household level as power is invented in men. This calls for gender balance at policy level in order to improve strategies for empowering women to participate beyond traditional roles in health promotion and sanitation improvement.

Mutono (2008) a Water and Sanitation Specialist at World Bank said sanitation should be given priority in order to reduce the disease burden. He reported that the national latrine coverage had increased from 59%-62% which was one of the highest shift in recent years attributed to law enforcement by the district and the political good will of leaders. Mutono recommended that landlords should be compelJed by the LAs to comply with the Public Health Act to create better sanitation condition for people.

Government recognizes the central role of sanitation and basic hygiene in the achievements of PEAP targets and MDGS; however, while the profiles of sanitation and hygiene promotion have been raised nationally, it still remains a low priority at local government levels (Uganda Bulletin; 2000-2001).

Still on government policy, at present, government funding for sanitation promotion does not include subsidies towards the hardware cost of household latrines. The case for the use of appropriate and carefully targeted subsidies should however be considered when addressing the challenge of stimulating demand for improved sanitation and hygiene amongst the more disadvantaged or marginalized sectors of society as well as those living in difficult areas, rocky ground, sandy soil or high water table and where innovative low cost sanitation technologies are being pioneered for future scaling up (National Environmental Health Policy, 2005:16).

Limited financial resources were reported as a major constraint to a large scale, adoption of sanitation technologies. Lack of awareness about sanitation and hygiene and how to construct and maintain pit latrine were among the factors found to lead to poor human waste management (WHO, 2010).

Follow-up to the 2007 baseline assessment, found clear evidence of accelerated sanitation progress in project communities. The assessment found that "district governments" were convinced to use their own institutions and resources to implement the project, resulting in sustainable arrangements and finance cost-effective use of local resources as well as develop locally appropriate approaches (**WSP**: Robinson, 2011).

Key components are introduced and illustrated with examples from the field, including Community-Led Total Sanitation, behavior change, communication and sanitation marketing. The evidence presented in this working paper can help inform government and donor policies and practices, increase investment in sanitation, and ensure that these investments reach the poor (WSP; Perez, 2012).

According to (Nsanga, 1997) that in Africa occurrence of cholera epidemic had been mainly reported in rural areas and urban places due to lack of knowledge and poor sanitation practices.

Sironko district authorities expressed their concern over the alarming rate of cholera in their district. According to the information from the District Health Department, so far 7 people had died due to the disease in a period of 2 weeks while 70 people were admitted to the health facilities. The most affected area were; Sironko Town Council, Bugitimwa, Bukiise, Budadiri Town Council and Mutufu (Yehuda Kitunzi, 2016)

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter covers study area, study type/design, study variables, study population, sampling procedures/sample size, plan for data collection, quality assurance, and plan for data processing, ethical consideration, project management, staffing and work plan administration and monitoring, plan for utilization of result /dissertation, budget.

3.1 Study area

The study was conducted in Ekizimbi ward in Byembogo, Kyamani, Kakagate and Kasharara villages in Sanga town council, Kiruhura District, located in the southeastern part of the district with population of over 3200 people in that parish. It has slightly sloppy hilly ground with high temperature throughout the day.

3.2 Study type/design

The study used a cross sectional study which employed both qualitative and quantitative method of data collection using questionnaire.

3.3 Study variable

Table 3.1.1: The study variables

Dependent variable	Independent variable
Human waste management	Environmental factors <ul style="list-style-type: none">● Poor soil conditions .● Vectors and vermins .● Materials and Land availability Socio-cultural factors <ul style="list-style-type: none">● Cultural beliefs and Religious practices● Income levels and attitudes of community . Service related factors <ul style="list-style-type: none">● Priorities for sanitation and allocation of resource● Government policies and level of awareness .

3.4 Study population

The study populations were the residents of Kyamani, Byembogo, Kasharara and Kakagati villages. Respondents consisted of household heads in the selected villages who responded to the questionnaire and key informants responded to the interview guide to answer questions on human waste management.

3.5 Sampling procedure

Sampling used included purposive sampling and random sampling. This constituted a sampling frame. The numbers of households were selected by random sampling in the 4 villages of study since they are many. The starting point for selection of the household was the central point in each village. The direction in which to proceed was chosen by spinning a pen on a ground. The first household in the direction pointed by the nib was selected for the interview and every third household got involved in the study.

Purposive sampling was used for key informants in the villages like Local leaders, VHTs, and Health assistants in the study area.

3.6 Sample size

The total projected population in Sanga town council is about 15861 people as in 2014 Nationals census. A sample size of about 50 people was obtained from the total population under study, 40 family heads, and 3 Health workers, 4 Local leaders and 3 technical officers.

Yamane (1967) provided a simplified sample size. According to Glenn (1992) sample size which was estimated using the formula?

$$n = \frac{N}{1 + N(e)^2}$$

Where n=sample size

N=Population under study

e=Level of precision

I=constant

C=0.1 % (0.0025)

Substituting the above into the formula, the sample size was $n = N / 1 + N(e)^2$

$$n = 58 / 1 + 58(0.5) = 58 / 1.145 = 50 \text{ Respondents. } \mathbf{3.7}$$

Data collection procedure

Researcher obtained an introductory letter from Kabale University, requesting for permission to carry out the study.

3.8 Plan for data collection/analysis.

Data was processed both manually and electronically such as checking, for a completeness of data, entering missing data, cleaning, editing and coding.

Analyzed data was presented in tables; figures, percentages from both quantitative and qualitative data collected.

3.8.1 Quality assurance.

Pre-testing of questionnaires was done before data collection. Pre-tested questionnaires were corrected to ensure that they collect the intended data. Closely related questions was coded for easy analysis.

3.9 Data collection instruments/tools

3.9.1 Questionnaire

Questionnaires were used to collect data from respondents. This contained close ended and open ended questions to collect data on the different variables under study to answer the research questions. This was administered to heads of households or any adults found at home at the time of data collection.

3.9.2 Interview guide

This was designed with both open and close ended questions to obtain relevant data from the respondents especially the key informants like local leaders, health workers and technical officers.

3.10 Methods of data collection

The researcher used the following methods to collect primary data from the field. **3.10.1**

Review of Records.

Documents such as the Sub-county work plan and budget was reviewed to find out if they cater for human waste management. Bye laws and any enforcement interventions, records such as minutes of council studied to see if sanitary related activities were reflected.

3.10.2 Interview

This method involved face to face communication between the researcher and respondent. An Interview guide was constructed to guide in asking questions. This was administered to the health workers, opinion leaders and technical officers

3.11 Project management

The project staff was selected among those who had finished tertiary institution and they included trained on their roles and responsibilities.

Table 3.1.2 Showing project staff and their responsibilities.

<i>SIN</i>	Staff	Roles
1	Researcher	To collect, receive and analyze primary data.
2	School Supervisor	To correct the first drafts giving guidance on proposal writing and approval.

3.12 Staffing and Work plan

Work plan to a study to investigate factors influencing Poor Human Waste Management in Sanga town council, Kirurura District.

Table 3.1.3 Work plan from 20" May-20" June/2021








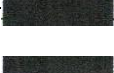
<i>SIN</i>	Activity	Week One	Week Two	Week Three	Week Four	Resources	Responsible persons.
1	Preparing Research Proposal					Stationary Pens, pencils, rubbers, files, notebooks.	Researcher
2	Development of Data collection tool						Research Assistant and Researcher
3	Approval of Research						University Supervisor
4	Getting Introductory Letter						Kabale university
5	Pre-test						Researcher
6	Preparing Resources						Researcher
7	Pre-visit to study area						Researcher
8	Data collection					Laptops, Flash Disks, Camera	Researcher
9	Data analysis						Researcher
10	Report Writing						Researcher
11	Submission of report						Researcher

Table 3.1.4 Showing Budget

<i>SIN</i>	Source	Expected amount
1	Personal savings	150,000
2	Relatives and Friends savings	100,000
3	Spouse(Sponsor)	150,000
Total		400,000

Table 3.1.5 Expected expenditure

<i>SIN</i>	Description	Item	Quantity	Rate	Amount
1	Stationery	Pens	4pens	4x500	2,000
		Ruled papers	1ream	16000x1	16,000
		Printing papers	I ream	20,000x1	20,000
2	Secretarial services	Type setting	30 pages	30500	15,000
		Printing	90 pages	90x500	45,000
		Internet services	-	-	30,000
		Binding	4 copies	4x5000	20,000
3	Transport	-	-	20,000	900,000
4	Feeding	-	-	-	120,000
5	miscellaneous	-	-	-	42,000
Grand total					400,000

3.13 Administration and monitoring

The collection process was implemented as per the schedule with proper accountability under strict supervision of the work supervisor and during implementation.

3.14 Ethical consideration

Kabale University first approved the research proposal and gave an introductory letter to go to Sanga town council which permitted the researcher to carry out the study. Interview was carried out with those who consented after the objectives of the study had been explained to them, the

questionnaires were handled with confidentiality and numbers were used instead of names of respondents to ensure no anonymity.

3.15 Plan for utilization of results

The Research proposal was submitted to;

- ✓ Kabale University, for record purpose in the library and for further reference by students.
- ✓ Kabale University, for assessment for award of a bachelors degree *in* Environmental health science.
- ✓ Office of DHO, Kiruhura, for possible implementation of the recommendations of findings to improve human waste management in the area.
- ✓ Researcher retained a copy for record and as evidence of carrying out research on the topic.

CHAPTER FOUR

DATA ANALYSIS INTERPRETATION AND PRESENTATION OF FINDINGS 4.0

Introduction

4.1 Bio-Data of respondents.

Personal information of respondents was collected and determined the responses of respondents and these were; Age, sex of the household head, educational level, occupation of household head and religion of respondents as highlighted hereunder.

4.1.1 Age of the respondents

Table 1 Age of respondents

Variables	Cumulative Frequency	Percentage (%)
Below 18	05	10
18-35	14	28
36-53	18	36
53and above	13	26
Total Source: Primary data, 2022	50	100

Findings from Table 1 above show age of head of household which was considered as one of the variables in the study area and the findings presented in table one above revealed that majority of the respondents were between the age bracket Of 36- 53 (36%), followed by respondents who were between the age bracket of 18-35 (28%), respondents below the age bracket 18 years accounted for (10 %) and 53years and above were reported by 26%. This means that majority of the respondents were involved in waste management in Sanga town council. Such findings imply

that majority of respondents were in the age group of 36-53years. This means majority of respondents were heads of families and were still energetic and can easily do proper waste management. And this age group is supported by Michael, (2009) who asserted that environmental health is supported by general cleanliness of cities and towns.

4.1.2 Sex of Household Head

Table 2: Sex of Household Head Variables

Variables	Cumulative Frequency	Percentage (%)
Female	28	55
Male	22	45
Total	50	100

Source: Primary data, 2022

Sex of Household Head

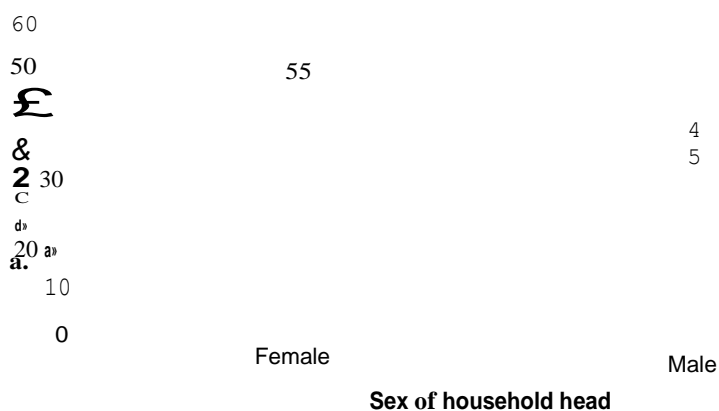


Figure 1: A bar graph showing sex of household heads, 2022

Findings from figure 1 above shows that female respondents were highly represented as reported by 55% of the total respondents compared to their male counterparts 45%. This shows that 22

females were engaged in human waste management since most of them still have children and therefore they were the ones concerned with health at home as well as general cleanliness of latrines. This could have been due to ability to look for families and hope associated to male. The population of female respondents shows that they are actively engaged in human waste management than male respondents. This is in line with NEMA report 2018 which stated that many urban dwellers have been supporting environmental protection through waste management.

4.1.3 Educational level of respondents

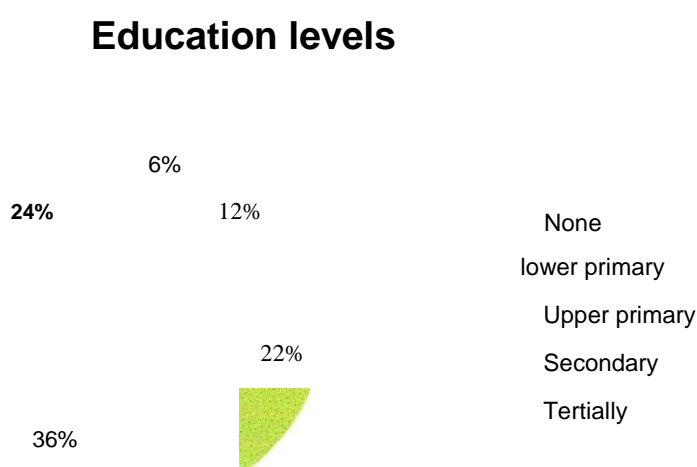


Figure 2: A pie chart showing educational level of respondents

Findings from figure 2 indicates that majority respondents attained secondary level of education 36%. Respondents with tertiary level of education constituted 24% followed by those had completed upper primary with 22%, respondents who had completed lower primary were 12% and finally with respondents who never went to school with 6% respondents. The study found out that the respondents with secondary level, tertiary and upper primary level of education were

engaged in waste management hence leading to environmental management. The percentage of educated people could easily teach the rest of the population about the methods used in waste management in Sanga town council.

higher
best

4.1.4 Major occupation of the household head

Table 3: Major occupation of the household head

Variables	Cumulative Frequency	Percentage (%)
Peasant	22	44
Public servant	06	12
Business persons	12	24
Others	10	20
Total	50	100

Source: Primary data, 2022

The findings of the study shows that the major occupation of the household head were peasants with 44%, followed by business persons which had 24%, respondents which were doing other occupations constituted of 20% and finally public servants were represented by 12%. This means that majority of the respondents were peasants working closely to their families .

4.1.5 Religion

Table 4: Religion of respondents

Variables	Cumulative Frequency	Percentage (%)
Moslem	08	16
Catholics	10	20
Anglican	18	36
Pentecostal	14	28
Total	50	100

Source: Primary data, 2022

Religion of respondents

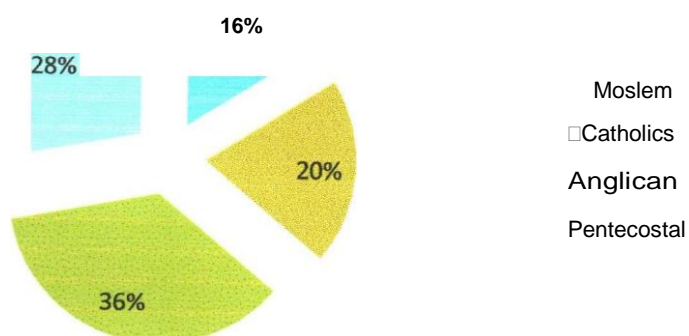


Figure 3: A pie chart showing religion of respondents

Findings from figure 3 above shows that 36% of the respondents were Anglicans 28% of the respondents were Pentecostal 20% of the respondents were Catholics and 16% of the

respondents were Muslims .. This indicates that majority of the respondents were 36%, thus all the respondents had got religion affiliation and could get awareness and mosques about the factors influencing waste management

Anglicans with
from churches

4.2 Environmental factors influencing poor human waste management

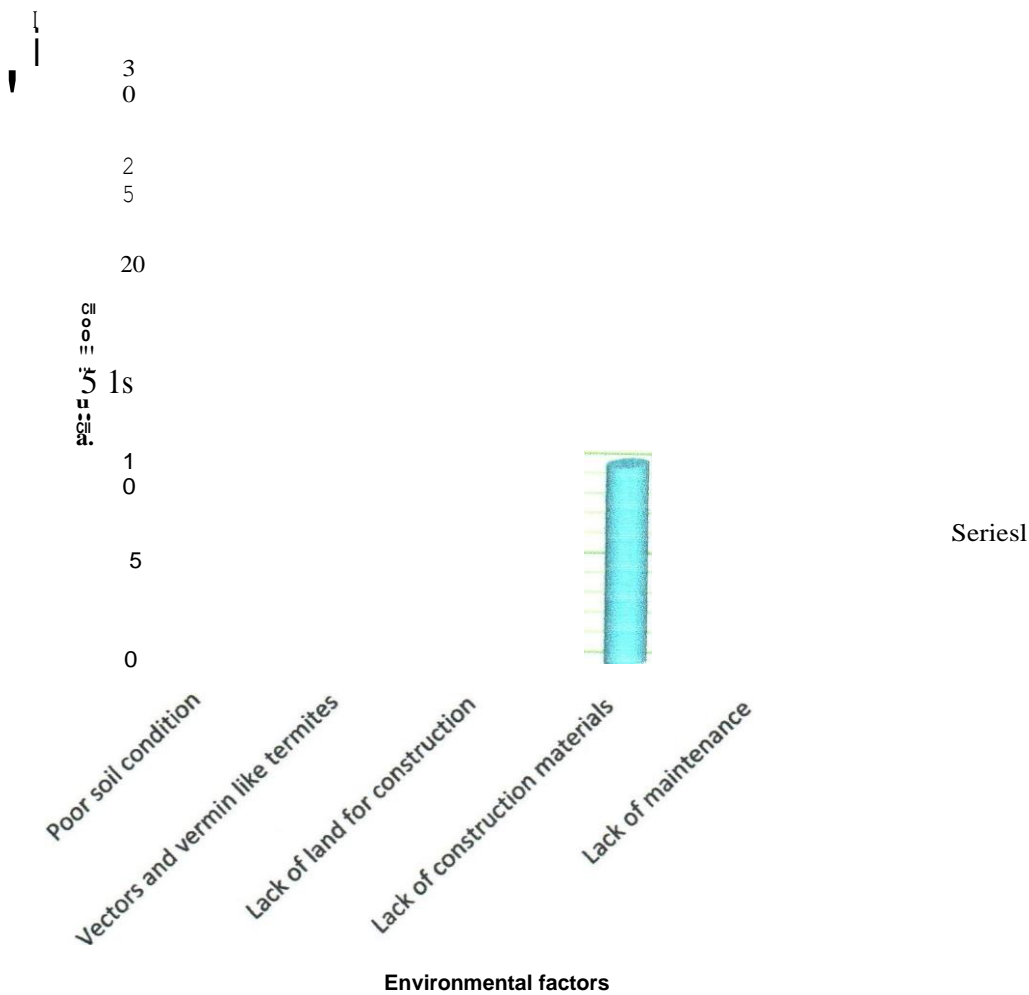
4.2.1 Environmental factors

Table 5: Environmental factors

Variables	Frequency	Percentage (%)
Poor soil condition	12	24
Vectors and vermin like termites	15	30
Lack of land for construction	12	24
Lack of construction materials	05	10
Lack of maintenance	06	12
Total	50	100

Source: Field data, 2022

Figure 4: A bar graph showing environmental factors



Findings from figure from figure 4 above shows that there were environmental factors that affect human waste management and they include; poor soil condition with 24%, Vectors and vermin like termites with 30%, Lack of land for construction with 24%, lack of land for construction with 10% and Lack of maintenance with 12%. However majority of the respondents revealed that Vectors and vermin like termites were the major environmental factors that affect waste management in Sanga town council Kiruhura district.

4.2.2 Major problems associated with latrine use

Table 6: Major problems associated with latrine use

Variables	Frequency	Percentage (%)
No ventilation	18	36
Too much near to use the house	15	30
Weak floor and walls	12	24
Others	05	10
Total	50	100

Source: Field data, 2022

From the table 5 above, findings of the study revealed that there were major problems associated with latrine use and they include; no ventilation with 36%, too much near to use the house with 30%, Weak floors with 24% and there were other problems associated with latrine use with 10%.

Also data from questionnaires also revealed that there were other difficulties encountered in latrine construction as they included; rocky and sandy soil with 30%, high water table with 28%, lack of construction materials with 18% and termites with 32%. However, respondents revealed that termites were a major problem since most of the residents use untreated poles in building and construction of the latrine.

Also data sources from questionnaires revealed that there were problems encountered during maintenance of human waste disposal unit such as emptying of pits with 45%, odour with 9%, flies with 37% and mosquitoes with 6%.

Most of respondents who were interviewed revealed that *"they commonly use traditional pit latrine because of its easy construction and the materials used are cost effective". He added on that they use hoes and foke hoe to dig pits".*

Data from questionnaires also revealed that there were environmental factors which influence human wastes management and they include vectors and vermin which was represented by 26%, nature of soil with 40%, construction materials with 30% and there were other factors which was presented by 4%.

An interview which was made between the environmental officer and the interviewer revealed that one of the best methods used to dispose off wastes was the use of animals such as cows " *she said that animals such as cows feed on garbage and in this case garbage is fully disposed off* She added on that some of these methods like reduction and reuse can be started from the comfort of your homes.

4.3 Social cultural factors that influence human waste management Table6:

Social cultural factors that influence human waste management

Variables	Frequency	Percentage (%)
Customs	19	38
Religion	11	22
Attitude	06	12
Social class of people	08	16
Nature of sanitation	06	12
Total	50	100

Source: Field data, 2022

From the table 3 above, the findings of the study also revealed that there social cultural factors that influence human waste management and they included; customs with 38%, religion with 22%, attitude with 12%, social class with 16% and nature of sanitation with 12%. However, majority of the respondents revealed that customs with 38% was the major social cultural factors that influence human waste management in Sanga town council Kiruhura district.

Respondents from Sanga town council who were also interviewed and revealed that *"there were habits and taboos that don't allow pregnant mothers to use latrine, elders, children and vulnerable such as the sick". She said that her grandparents used to have such taboos and different people in rural areas are also using it".*

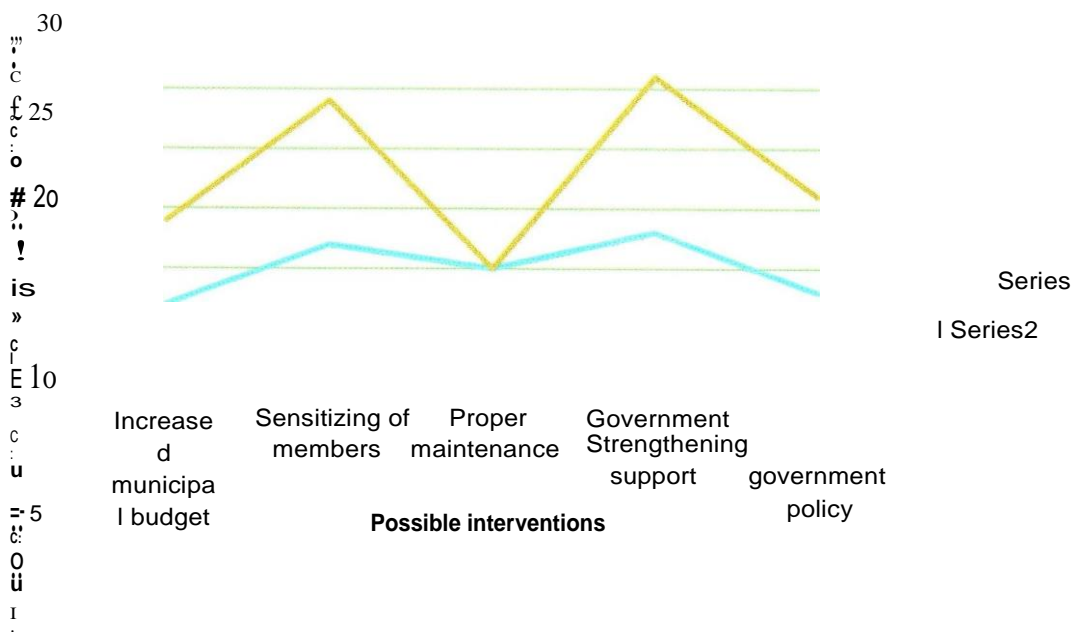
Possible interventions

Figure 4: Possible interventions

Interventions	Frequency	Percentage (%)
Increase municipal budget	07	14
Sensitizing of members	12	24
Proper maintenance	10	10
Government support	13	26
Strengthening government policy	08	16
Total	50	100

Source: Field data, 2022

Figure 5: A line graph showing possible interventions in Sanga town council



From the figure 5 above indicate that there were possible interventions and they include; increased municipal budget with 14%, Sensitizing of members with 24%, Proper maintenance with 10%, Government support with 26% and strengthening government policy with 16%. However, sensitizing

community members with 24% was a major possible measure to enhancing human waste management in Sanga town council, Kiruhura district.

9% of the respondents revealed that health workers are supposed to create awareness once in a month, 25% revealed that health workers should create awareness twice a year and 5% of the respondents revealed health workers should create awareness after three months.

From an interview that was conducted between the researcher and local leaders revealed that Sanga town council needs a demonstration site for human wastes.

From interviews that were conducted from health officer and environmental officer revealed that Sanga town council has put in place different measures to reduce on human waste disposal such as construction of free municipal council for the residents. The cleaning of the town is normally done early morning every day and workers have got schedules to ease on the work done so as to keep Sanga town council free from human wastes.

CHAPTER FIVE

SUMMARY OF THE STUDY FINDINGS, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter includes discussions, conclusions and recommendations. The findings are discussed e study objectives.

5.1 ion of the study findings

5.1.1 Environmental factors influencing poor human waste management

findings indicate that all the respondents interviewed shows that environmental encing poor human waste management and they include vectors and vermins, nature construction materials. However, majority of the respondents revealed that termite's vas the common environmental factors influencing poor human waste management f the toilets doesn't last for more than two years because of terminates which feed on

5.1.2 Social-cultural factors that influence human waste management

the study indicates that there were social cultural factors that influence human waste I in Kabale municipality southern division and they include; customs, religion, economic status, social class and type of sanitation. However, majority of the revealed that customs with 38% was the major social cultural factors that influence e management.

m the study show that respondents revealed that cultural customs with 38% was the onmental factor influencing human waste management in Sanga town council and rted by (Omer, 2003). In the study carried out in Nak:awa Division, Kampala found

out that 7.5% of the respondents believed that neighbors should not share with them latrine for fear of disease transmission and witchcrafts. In the same study, it was found out that among the difficulties militating against the effective use of latrine are the facts that latrines were soiled with faeces, having offensive smell and flies.

Findings of the study also revealed that the type of sanitation with 12% also was one of the environmental factors influencing human waste management and this is supported by successful excreta disposal programmes which depend on an understanding of people's varied needs and their participation. It may not be possible to make all toilets acceptable to all groups. Special toilets may need to be constructed for children, older people and persons with disabilities e.g. toilets with seats or handrails or provision of bedpans, potties or commodes.

5.1.3 Possible interventions

The study findings shows that there were possible possible interventions to enhance human waste management in Sanga town council and as they include; increased municipal budget, sensitization of members, proper maintenance, government support as well as government policy . However, Strengthening government policy with 27% was a major possible measure to enhancing human waste management in Sanga town council, Ruhura district.

The study findings revealed that increased municipal budget which had 14% was the possible strategy for human waste management and this is in line with K. Park (2005) who asserted that in the highly industrialized countries, up to 20% of municipal budgets are spent on the collection and disposal of waste and even more will be requested if the job is to be done adequately.

Also the study findings revealed that sensation of members which had 24% was the best strategy for human waste management and this is supported by In 2008, UNICEF also explained that by means of their reproductive roles, women are responsible for proper maintenance and ensuring

hygiene education to family members. However, women have a low decision making status at household level as power is invested in men. This calls for gender balance at policy level in order to improve strategies for empowering women to participate beyond traditional roles in health promotion and sanitation improvement.

The study findings also revealed that government support which had 16% was the best strategy for human waste management and this is in agreement with (MOH, GRANTS MANAGEMENT MANUAL, September 2013 page 3). It is imperative to note that local government have the mandate to mobilize and allocate resources, plan and budget for the services they are responsible for urban development.

The findings of the study also revealed that government policy which had 16% was the best possible measure for human waste management and this is in line with (National Environmental Health Policy, (2005) which states that still on government policy, at present, government funding for sanitation promotion does not include subsidies towards the hardware cost of household latrines. the case for the use of appropriate and carefully targeted subsidies should however be considered when addressing the challenge of stimulating demand for improved sanitation and hygiene amongst the more disadvantaged or marginalized sectors of society as well as those living in difficult areas, rocky ground, sandy soil or high water table and where innovative low cost sanitation technologies are being pioneered for future scaling up.

5.2 Conclusions

The study found that the majority of the human waste generated at home was largely faeces which were mainly stored in pit latrines. Although human waste was disposed appropriately at municipal sewage collection units, some community members practiced still use the surrounding bushes to dump in human wastes and in any available space, including gutters, holes, streets, and old buildings with the town council. Although, indiscriminate dumping was frequently done, the community expressed interest in controlling waste disposal through the use of improved pit latrines and regular collection to dump sites. The communities cherished improved human waste management practices and were willing to pay for improved services. With a little push, support, and education to improve people's practices and perceptions regarding human waste management, some of the challenges confronting municipalities in the area of human waste management can be minimized.

Many studies have been carried on human waste management practices with most of them concentrating the challenges faced by different governments and local authorities. The various studies showed that human waste poses more problems in the municipalities and other developing cities. Improper human waste increases disease transmission as the waste such as typhoid, dysentery and cholera among others, (MoH, 2018). Reports from Dr. Ruth Acheng (2021) minister of health in Uganda shows that district like Kiruhura are prone to diseases such as cholera, malaria and diarrhoea as a result of the collapse of sanitation materials such as pit latrines.

5.3 Recommendations

The study recommends that;

there is a need for environmental officer and community development officer and health officer
!"

continue to provide support in sensitizing community members on the dangers of the exposure

human wastes in Sanga town council.

there should be involvement of local leaders in decision making and consult on policies regarding human waste management and their ability to influence these decisions. This will be ore important in that municipalities should be more clean in effective and efficient way.

here should be training, workshops and seminars regarding environmental health on how they feet the society on environmental sanitation programmes. Different dumping sites should be set every comer of the municipality to increase access and utilization of human wastes materials. here should be policies introduced to ensure that all residents in Sanga town council engage in uman waste managemnt activities and policies which will hopefully contribute to increasing the alth amongst the residents.

there should be support and advice from government officials in order to develop and increase uman waste collection and waste management methods. Environmental officer, community evelopment officer and other stakeholders should maintain support through engaging every ousehold in sanitation programmes with in Sanga town council.

rban planning practice in all the surveyed towns need to change so as to be more proactive with spect to providing for ventilated improved pit latrines needs such as communal toilets.

he changes needed to be made and new things needed to be introduced to improve human waste Management in the selected towns will call for competencies and skills far beyond what was

~ded previously. Therefore, the capacity building efforts must incorporate training of the ~nnel who will be responsible for human waste management in the improved sanitation.

4 Further research

rther research should be done on;

1. Assessment of the extent of community involvement in human waste management methods in Sanga town council.
2. Household involvement in human waste management in Sanga town council, Kiruhura district

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APPENDICES

APPENDIX I: Questionnaires for Head of Household

Questionnaire on the Factors Influencing Human Waste Management in Sanga town uncil, Kiruhura District

Where options are provided, please tick the correct answer in the boxes provided and for open-ended questions answer in the spaces indicated.

1.1 Demographic Characteristics of the respondent

1. Name of the village

2. Name of parish

3. Age

a. Below 18 years. ☐ ☐

b. 18-35 years. ☐ ☐

c. 36-53 years ☐ ☐

d. Above 53 years ☐ ☐

4. Sex of the head of Household.

a. Male. ☒ ☐

b. Female. ☐ ☐

5. Educational levels.

a. None. ☐ ☐

b. Lower primary. ☐ ☐

c. Upper primary. ☐ ☐

d. Secondary. ☒ ☐

e. Tertiary. ☐ ☐

6. Major occupation of the Head of Household.

a. Peasant. ☐ ☐

b. Public servant. ☐ ☐

c. Business persons. ☐ ☐

d. Others specify

What is your religion? a

Moslem.

b. Catholics

c. Anglican.

d. Pentecostal.

L What is your tribe?

ironment factors influencing poor human waste management.

. What are the major problems associated with Latrine use?

a. No ventilation.

b. Too near to the house.

c. Weak floor and walls.

d.Others specify

How do you dispose off human waste in your home? Latrine

Others

Why do you dispose off human waste like that? Lack of land [J

Others

What difficulties do you encounter in Latrine construction?

a. Rocky and Sandy soil.

b. High water table.

c. Lack of construction materials.

d. Termites

What problems do you encounter during maintenance of human waste disposal unit?

a. Emptying of pits.

b.Odour.

e. Flies.

c. Mosquitoes.

d.Others specify

Which type of latrine do you have?

9.

- a. Traditional pit latrine.
- b. VIP.
- c. ECOSAN.

I J
I J

d. Others specify

How do you manage to construct the one you have?

Specify

Do you have any construction material?

I J No /

If yes, which constructional material do you have?

- a. Grass and un burnt bricks. I J
- b. Mud and wattle. I J
- c. Burnt brick and Iron sheets. I I
- d. Papvrus. I .I

e. Others specify

0. Is there available land for latrine construction? I J
No /

I. If not available, give reasons why?

!. What factors prevent you from constructing latrine?

- a. Socio-cultural factors I I
- b. Environmental factors. I J
- c. Service related factors I I

If Environmental factors, specify.

a Vectors and vermins I J

b. Nature of soil I I

c. Construction materials C- J
f. Others specify

ial-cultural factors

1. Does your culture allow use of pit Latrine?

No **L**

2. Are there habits and taboos that don't allow the following categories to use latrines? **a**

Pregnant mothers.

b. Elders.

c. Children.

d. Vulnerable.

#s, give reasons as to why

3. Do religious practices affect use of latrine?

No **[I**

::s, reasons

4. What reason do they have for not using the Latrine?

a. Bad smell.

b. Fear of safety.

c. Cultural reasons.

d. Limited number of Latrines in Public places.

e.Others

5. Do people practice all the four Hand Washing behaviors?

a.After visiting Latrine.

b. Before preparing food.

c. After changing baby's nappy.

d. Before feeding baby.

5. What is the attitude of community towards latrine use?

~reasons

- Does the income level of the head of household allow proper latrine construction?

No [**I**

1d.

what is the problem?

le interventions

Do you suport your Sub-County to prioritise human waste management?

Yes

No [**I**

2. IR yes, where do you want it to fall under the Sub-County budget? a.

Number one on the budget provision

b. Least on the budget provision

c. Third on the budget provision.

3. Are there any government policies that you want to be implemented **in** your area under human waste management?

Yes

No

es, what are they?

4. How often do you want Health workers to create awareness **in** your community?

a. Every after three months. |

b. Once a year. |

c. Twice a year. |

d. Once in a month |

5. Is the staffing in your community enough to carry out human waste management programmes?

Yes [**I**

No

No, give reasons why?

6. Do you think Sanga town council need a demonstration site for human waste disposal?

Yes I _____

No I _____

7.If yes, which type?

8. Are there allocations of resources by MOH for human waste management?

Yes I _____

No I _____

9. How is it given?

- | | |
|-------------|-----------------|
| a. Monthly | I _____ J _____ |
| b. Quaterly | I _____ J _____ |
| c. Weekly | I _____ J _____ |

10. Are the resources utillized appropriately?

I _____

No I _____

No,why?

11. Which categories of people are involved in excreta management? a.

Health workers.

b. Local population. I _____

c. Religious leaders. J _____

d. NGOs. I _____ J _____

e. Others, specify

ank you for your participation.

ENDIX II: Interview guide for key informants factors influencing poor human waste

12. **ement.**

What are the factors that influence poor human waste management?

Have you ever had of human waste management?

~ where from?

• Are there any Environmental factors associated to poor human waste disposal?

4. What are the ways to manage environmental factors influencing poor human waste management?

5. What are the possible suggestions you would give to improve on human waste management?

a) At community level.

b) At Town council level.

6. What is the latrine coverage in this area?

What experience have you had with community towards socio-cultural factors on poor human waste disposal?

8. What would you change about in the community on socio-cultural factors?

9. How would you weigh situation on ground about service-related factors influencing human waste management?

lie of interview

me of interviewer.

anks a lot for your time and co-operation.

**ENDIX III: Tool for documentary review on factors influencing poor human waste
agement**

he following documents in place in your office?

Town Council work plan.

Budget for sanitation activities. ,

Bye laws.

Enforcement records (minutes)

PHA.

•Environmental Acts. Water

and sanitation Acts.

uest for them and check if they have provision for human waste management.

pe **of review**

PENDIX IV: Map of Kiruhura District showing, Sanga Town County

her.<g>es.rug

F

