

KAMPALA INTERNATIONAL UNIVERSITY

**CAUSES AND EFFECTS OF POOR
ENVIRONMENTAL SANITATION IN
DIVISION B, ENTEBBE**

BY

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BEM/1741/21/DU

**A DISSERTATION SUBMITTED IN PARTIAL
FULFILLMENT OF THE AWARD OF A
DEGREE IN BACHELOR OF SCIENCE OF
ENVIRONMENTAL MANAGEMENT OF
KAMPALA INTERNATIONAL UNIVERSITY**

NOVEMBER 2007


DECLARATION

I Wandera Peter (BEM/1741/21/DU) do declare that the work in this dissertation is my own and is original. It has never been presented in any other institution or student for any award, publication whatsoever.

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Signature: ..... Date: 25/09/07.....

DEDICATION

This report is dedicated to the almighty God, my father; Major Ojiambo Emmanuel, my sisters; Donna, Gloria, Rita, Sarah, Lydia, Norah, my brothers; Douglas, Mark, cousins, Wilber, the family of Mr. and Mrs. Wadanya, friends; Okello, Patrick, Tom, Wycliffe, Mwebesa, Junior, Ochom and at most, to my late mother, Aida Nabwire

ACKNOWLEDGEMENTS

I have been aided by many people to come up with this dissertation. Through their support and encouragement making it difficult to single them out. However, I send sincere appreciation to God who has seen me through to this day. He gave me wisdom, strength and enabled me to finish this research. Glory is to his name.

I acknowledge my supervisor Miss. Tumushabe Ann who guided me through the research and ensuring that the dissertation is meaningful.

I also wish to acknowledge the respondents from the different places of division B who provided me with the information. Without them, I could not have come up with this dissertation.

My gratitude further goes to my father, Major Ojiambo Emmanuel, my sisters, cousins, brothers and the family of Mr. and Mrs. Wadanya.

God bless you all.

ACRONYMS

1. AMCOW African Ministers Council
2. L.C.S Local Councillors
3. MDG Millennium Development Goals
4. NEMA National Environmental Management Authority
5. N.G.O.S Non Government Organisations
6. UBOS Uganda Bureau of Statistics
7. UN United Nations
8. UNICEF United Nations Children Fund
9. WHO World Health Organisation

Abstract

The study focused on the causes, effects and of poor environmental sanitation. It was carried out in Entebbe Division 'B' Kitoro, Kigungu, Nakiwogo, and Lugonjo. Basically with the guidance of the objectives, information was obtained and they included to finding out causes and effects of poor environmental sanitation, and suggestions of the solution to the problem. The extra information was obtained from textbooks, newspapers, reports and journals.

The major causes of poor environmental sanitation were identified as poverty, which is a major factor, lack of clean water and pollution the effects included disease out breaks the study therefore was based on the following objectives to identify causes of poor environmental sanitation and suggest measures in relation to poor environmental sanitation.

The findings indicated that most of the respondents were ignorant about environmental sanitation hence leading to its abuse. From the study, it was observed that poor environmental sanitation contributed a lot of diseases and deaths in the communities. Further more, other causes and effects of poor environmental sanitation were revealed.

From the conclusions, the findings portrayed that poor environmental sanitation has diverse effects both on humans and especially children below 5 years. It is also clear that a large proportion of respondents were ignorant about environmental sanitation.

I recommended a number of issues that need to be address, some of which included government taking part fully in implementing policies and laws and the local community should observed these polices, environmental awareness is one of the key factors that should be addressed as well.

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CHAPTER ONE

1.1.Introduction:

Environmental sanitation is a term that includes issues like safe excreta, disposal, solid waste management, medical waste management, waste water management, site drainage, personal hygiene facilities, and vector and pest control and food hygiene. Therefore, sanitation is a basic as well as a long standing public health issue. As human beings, a clean environment protects one from many diseases that look simple but dangerous especially to the infants.

In Division B, lack of basic sanitation is a major cause of illness therefore more than 80% of diseases in the Division is attributed to poor access to clean water and sanitation.

The people, livestock and some wild animals share the same water source, Lake Victoria, leading to a variety of communicable and non communicable diseases being transmitted. At the same time, people do their laundry and bathe in the same places that they fetch drinking water.

Also, failure to adequately clean clothes, water vessels and eating utensils also contribute to the Division's high rate of avoidable illnesses.

Latrines are virtually non existent in some homes with defecations taking place in fields, bushes or even along drainage ditches.

Some suggestions came up such as a simple long drop latrine can radically reduce on the amount of faecal matter that gets into the water supply. Use of clean utensils for gathering water also improving on the general sanitation especially in households such as improving on the ventilation systems,

reducing on congestion in the houses therefore, efforts to achieve these measures have been futile due to lack of cooperation from the society, high illiteracy and ignorance rate among the people.

1.2 Background of study

Adequate sanitation is the foundation of development but a decent toilet or latrine is an unknown luxury to half the people on earth. The percentage of those with access to hygienic sanitation facilities has declined slightly over the 1990's as construction has fallen behind population growth.

The main result can be summed up to one deadly word diarrhea. It kills 2.2 million children in a year and consumes precious funds in health care costs preventing families and Nations from climbing the ladder of development. (Akhtar Hameed Khan the progress of Nations 1997 UNICEF)

Deficiencies in environmental sanitation that is solid waste, waste water, excreta disposal, drainage and community hygiene – contribute significantly to the continuing high rate of infant and child mortality from diarrhea diseases and also play a role in vector borne diseases.

Mean while, many studies show that lack of sanitation puts people at higher risk for diarrhea diseases than lack of safe water.

According to the world Health organisation (WHO) over the last decade, access to water supply has risen, from 61% to 75% in developing countries but during the same period, the proportion of people with access to sanitary

means of excreta disposal has declined from 36% to 34% as funding for sanitation decreased and population increased.

Because the behavioral aspects are often looked when construction and technology are the focus the sanitary units may be built but they will not be used or maintained and little or no health impact will be realised.

Successful approaches involves house holds and communities in decision making add hygiene education and behavioral change to the prospect “mix” strengthen implementing institutions and facilitate access to financing.

i. Objectives of the study

The following are the objectives the research carried out;

- To find out the causes of poor environmental sanitation in Division B.
- To find out the effects of poor environmental sanitation in this area.
- To suggest possible measures to control adverse impacts in relation to poor environmental sanitation.

ii. Research questions:

- What is Environmental sanitation?
- Causes and effects of poor environmental sanitation.

What are the possible measures to control adverse impacts and problems in relation to poor environmental sanitation?

iii. Purpose of study

The study therefore focuses on the consequences of poor environmental sanitation in Division B. it is to explain the solution of some of these

problems the people are facing and at the same time showing some recommendations for the future generations.

iv. Significance of the study

It will make the readers understand how poor environment sanitation affects people in the society. It will provide information on how to overcome such conditions especially in the poor regions, our societies today.

The study will contribute to a broader literature of sustainable and healthy environment especially in Division B. it will further help the policy makers on coming up with proper environment management and other researchers to come up with required data in the same field.

v. Hypothesis

There is a relationship between inadequate water supply and sanitation and diseases out breaks in this Division 'B'.

CHAPTER TWO

2. Literature review

2.1 Introduction

The information most available as regards to consequences of poor environmental sanitation in Division B is quite general being obtained through research work that was carried out on a wide scale world wide. This information may be ranging from Newspapers, journals, study reports, public books among others.

2.2. Causes of poor sanitation

Sanitation is basic as well as a long standing public health issue. Therefore, in the European region, 120 million people do not have access to safe drinking water and even more lack access to sanitation, resulting in water borne diseases such as diarrhea, hepatitis A and typhoid fever (170,000 estimated cases in 2006).

Therefore, microbial contamination has been recognized as the prime concern through out the European region. Chemical pollution is localized but may also have a significant impact on health.

Also, new and emerging pathogens such as *Guardia*, *Cryptosporidium* and some chemicals pose additional challenges in the short term. In addition, extreme weather events such as floods and increased water scarcity pose challenges for the midterm future.

For the case of developing countries, in 1999 the United Nations (U.N) acknowledged that the development gap between the rich and poor countries

was widening about three fifths of the worlds population lacked access to basic public health both favorably and unfavorably. Improved housing and social conditions and reductions in infectious diseases like gastroenteritis or pneumonia are often accompanied by increases in degenerative, non infectious diseases like cancer and heart diseases.

Therefore, in rapidly developing countries like Mexico, the people's republic of China and Philippines, new public health problems often emerge before the old ones have been solved and it is important to assess which problems pose the greatest risks to health and which solutions are cost effective. The major problem for poor people in most countries is access to safe water in adequate quantity with reasonable convenience and at an affordable cost.

In addition, issues on human security, human health and its relation to the environmental conditions have great impact on the commodities well being and capacity to cope with other pressures. These additional pressures may include National Resource degradation or other social economic and environmental structure.

To illustrate this point, we can look at recent studies in the rural district of Migori of the province of Nyanza, Kenya. (Odour – Noah and Thomas Slayter 1995). Historically, Migori is one of Kenya's poorest districts. In the south Kamwango, sub location of Migori, one of the communities most significant issues here were the presence of acute health problems rooted in the area's environmental conditions. The related problems have been shown to make up the majority of health problems. These are; decreasing water quality and poor sanitation.

Some 2.6 billion people, half the world's population does not have access to basic sanitation. This means that people are being forced to defecate in fields, ditches, buckets and plastic bags then later dispose the human waste off into water channels and streets for instance the "flying toilets" (plastic bags) of Kibera slum in Nairobi, Kenya highlight what it means to live without sanitation.

2.3. Effects of poor environmental sanitation

According to Obeng, an expert on African fresh water ecosystem has stated, *"the incidence of diarrhea and other diseases is greatly increased by the use of contaminated water for drinking and bathing together with insufficient education on environmental sanitation and hygiene."*

In the same context of sanitation, disabled children in Uganda face difficulties. This happens in a way that children using wheel chairs in Ugandan schools can find toilet access and use problematic. Kiwanuka (2002) reports that these children have difficulty in opening doors and closing them. Once inside, the door locks are often too high to reach and limited space inside the latrines restricts movements. Taps, also are often too high making hand washing and self cleaning problematic. Children who crawl find the floor too dirty, especially as they crawl often with bare hands, where the water source is not close by users, find it difficult to carry water to the latrine for washing.

An estimated 4 billion cases of diarrhea diseases occur worldwide every year killing an estimated 3 – 4 million people per year, most of them children,

while it can be readily agreed that a safe water supply plus waste water sanitation is the most effective public health goal.

(Odour – Noah and Thomas Slayter 1995) Kenya's National health sector strategic plan has identified the need for safe water and environment and improved sanitation in rural areas.

2.4 Solutions to poor environmental sanitation

Therefore, "Delivering clean water, removing waste water and providing sanitation are three of the most basic foundations for human progress facing African community in the 21st century." (Hon. Mutagamba, Minister of water and environment and also the outgoing president of AMCOW.)

In this global context, providing both safe drinking water and waste water sanitation have long been recognized as priorities for the improvement of human health especially in the prevention of infant and child mortality from diarrhea and dysenteries (for example, Amoebiasis caused by a protozoon or E. coli diarrheas caused by bacterium)

International standards such as WHO and UNICEF suggest a minimum requirement of 20 liters of water daily from a source within one kilometer of the households. This water is sufficient for drinking and basic personal hygiene that is to include bathing and laundry needs, the amount would raise the personal threshold to about 50 liters of water a day.

More so, in developed countries, clean water is available at just the opening of a tap. About 1.1 billion people who live more than one kilometer from a

water source often use less than five liters of unsafe water a day. Average water usage ranges from 200 to 300 liters per person per day in most European countries, 575 in the U.S. over 85% of the developed countries have access to clean water therefore the minimum international standard for a family of five is 100 liters a day.

Coverage rates are lowest in sub-Saharan Africa but most people without water live in Asia. Therefore living without access to clean water means that people resort to rivers, wetlands and lakes, which are usually polluted with human and animal excrement. Water deprivation is the world's second highest killer of children.

Access to safe water reduced to child mortality rates more than 20% in Uganda and Cameroon, while in Egypt, the presence of flush toilets in houses reduced the risk of infant death by more than 30%.

Dangers can be addressed and diverted through public policies and international co-operations like AMCOW. Global data on water and sanitation are provided through the joint monitoring program of WHO and UNICEF.

Recent developments in the sub Saharan Africa, highlight the potential for an improvement on water and sanitation recognizing that the water and sanitation deficit is holding back advances in health, education and economic growth. Therefore, the African Development Bank has established a special water fund to support progress towards the MDG and universal provision by 2025.

Sanitation including water is a major part of U.N's 1992 agenda 21, "a blue print for sustainable development". The paradigm of sustainable development focuses on how to satisfy the basic needs of present human population and also secure resources to satisfy needs of future generations. I.e. growing population pressures, persistent poverty and ecological degradation, call for new integrated solutions in sanitation problems that strengthen both socio – economic and technical elements including the following;

Financial, political and societal will to invest in public health and the environment.

Human Resource and public awareness through education and training.

Information resources on health water cycle and ecological monitoring for informal planning and actions.

Regulatory frameworks, enforcements and compliance.

Basic sanitation structures suited to local priorities and conditions.

A market for public health and environmental support goods and services that provide economically viable, effective and lasting sanitation strategies.

Above all, the support involvements of the local community are essential if sanitation is to work. Ideally, many social sectors should be involved to varying degrees in community driven sanitation projects. Sanitation users, water and public health regulators and administrators, health professionals, sanitation engineers, ecologists, researchers and scientists, financing agencies and donors, non – government organizations and suppliers of health

and sanitation products and services can all contribute to a successful project.

These new approaches reflect the trend away from professionally centered, curative methods and towards multi – stake holder preventive strategies. In addition to face these challenges, public health professionals and institutions need to play an expanding role as facilitators and promoters of this trend, building new partnerships in developing and developed countries.

Therefore, protecting public health and ecological integrity are ethical and practical imperatives to be viewed as opportunities for people diverse cultures, social groups and disciplines to work more closely together.

CHAPTER THREE

3.0. Methodology

Introduction

In order to carryout the research very effectively, various data collection and analysis methods were applied. These involved personal observations, conducting of personal interviews were used to collect the information meanwhile, editing, coding and presentations were used for analysis. Therefore, data collection, reporting and analysis methods were of great value in collecting primary data as regards to the area.

3.1. Study area

The study area is based in Entebbe Division B. this includes Kitooro, Kiwafu, Lugonjo and Nakiwogo. Division B is located at 0.04N 320.28. it is 37 km south of Kampala. It is basically located on shores of Lake Victoria bordering Division A.

Population:

The division has a growing population of about 23,418 people that is 11,910 females and 10,840. This was according to the Uganda Bureau Of Statistics (UBOS) on the recent population study (2002).

Topography:

The division is at an altitude of 1200 M – 1325 M above sea level on a low lying land of Precambrian crystalline basement of quartzite.

Climate:

The area of study experiences a humid climate and monthly temperatures ranging between 25°C and 27°C. The lowest ever is 15°C.

Economic Activity:

Most people in this area do carry out farming which is basically done at subsistence level through a small population carry out for commercial purposes. They usually major in growing fruits like pineapples, oranges, tomatoes, vegetables, pigs and livestock while others carry out fishing on the lake and nearby swamps.

3.2. Research design

This study is a survey research aimed at establishing the environmental sanitation in Division B. the study also tries to examine the problems that could be associated with poor environmental sanitation, and therefore, propose measures to control the impacts of poor environmental sanitation to people in Division B.

The information collected is descriptive in nature for effective collection and interpretation. Efforts were basically made to divide the data into two sections that is primary data which constitutes information collected from the field by the researcher and secondary data that includes information gathered from area of study.

3.3 Framework and sample size

This population, which was interviewed, was randomly selected. In addition, with the help of the L.C.s the listed the households of the villages and then

assigned numbers to them then after written on pieces of paper, then put in a box which was further shaken. These pieces of paper were picked and the corresponding names became the respondents. This method therefore gave a representative sample. Therefore about 10 people from each village area took part in this exercise. Key informants were also interviewed and these included local leaders environmental officers. Therefore it took about 40 residents in this division.

The focus was essentially on residents living within Division 'B'. Therefore respondents were from Kitoro, Kiwafu, Lugonjo and Nakiwogo.

Methodology

3.4. Data collection methods and tools

Data was collected by the use of primary sources where data was got directly from the field by administering interviews, use of questionnaires, personal observation and data recording. In addition, the secondary sources included library research and review of the related literature.

i) Interview method

This was done on key informants like local residents, teachers, local council chiefs. This method provided the researcher with vast information about the causes and adverse impacts of poor environmental sanitation and therefore suggested some measures. The interview guide was used to get this information.

ii) Observation method

Direct observation was used to gather information on the status of the environment, nature of people living around water sources. This method helped to get more information in addition to that got from respondents. An observation checklist was used.

iii) Written questionnaires

The researcher designed questionnaires and it included both open and closed questions. The questionnaire was designed in English and since the researcher was not well versed with local languages i.e. luganda, lutoro, runyankole, interpretations were done by a translator and recorded for those who did not understand English. A questionnaire was used.

3.5 Data Analysis

After data collection, the descriptive statistical methods were used to analyse the data. Pie charts and tables were used. The methods were incorporated to determine the degree of the relationships that existed between different variables. The data compilation process and analysis was done manually, because of financial constraints of the researcher and therefore much time than expected was spent on the study.

3.6. Limitations of the study

This section will present some of the difficulties encountered during the process of data collection. Language barrier was a common problem. This is evident in the questionnaires, which had to be translated in different languages i.e. Runyankole, Luganda and Rutooro. This was because the area

holds different ethnic groups. This however showed down the whole process of data collection.

Transportation to the research areas was also a problem since the research was carried out in far areas. I had to use local transport means like boda bodas (motorcycles), which was expensive in the long run. In addition, this transport was sometimes not available therefore slowing down the whole process of research.

The members of the society were actually not social. So when being interviewed, they practically did not want to give full information which I required so this consumed a lot of time.

Therefore, the information collected is descriptive in nature for effective for effective collection and interpretation. Efforts were basically made to divide the data into two sections that is primary data, which constitutes information collected from the field by the researcher, and secondary data that includes information gathered from the area of study.

CHAPTER FOUR

4.0. REPRESENTATION AND DISCUSSION OF FINDINGS:

From the observations, interviews conducted and questionnaires administered, a number of findings were made, analyzed and recorded. They are interpreted in accordance with the related literature, research problems, objectives and research questionnaires.

Basically environmental sanitation is a term that includes issues such as safe excreta disposal, solid waste management, medical waste management, wastewater management, site drainage, personal hygiene facilities, and vector and pest control and food hygiene. Therefore, you discover that most of the local communities in such areas do not take sanitation seriously while others do not even think of it at all especially when it comes to solid waste disposal as well as excreta disposal.

4.1. Causes of poor environmental sanitation

4.1.1 Poverty

This was one of the factors cited as leading to the contribution of poor environmental sanitation. Many people are poor in that they cannot afford to maintain themselves. Often, children are being left on their own. This greatly affected them in terms of their health first of all they eat anything they come across. They also contribute to littering faecal matter because the parents find it normal when children are left. So in the long run, the child's life is at risk.

The majority of houses being visited had a major problem of being infested with insects such as cockroaches, bedbugs, and rodents like rats. These existed because the conditions in the living houses were favoring but then most members of the community were used because they really had nothing to do.

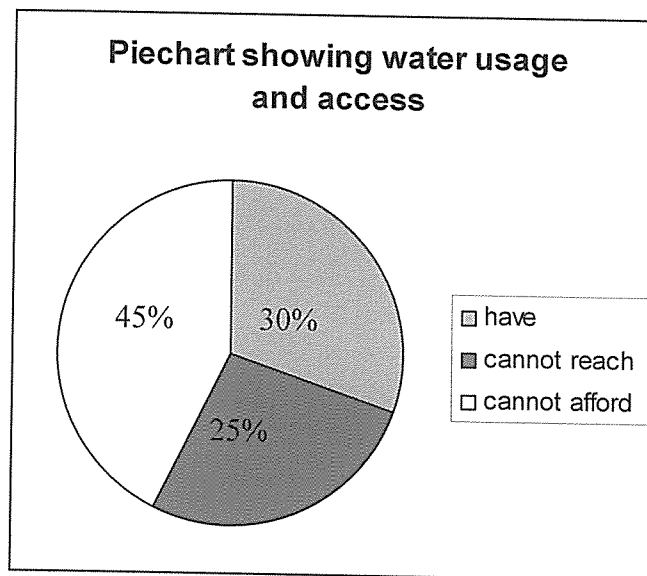
Whereas other members of the community faced poor housing structures, these houses were being without urban planners therefore are fragmented within small chunks of land. These very houses were below standard because people are generally poor, they cannot afford good houses, and they are being forced to enter what they can afford. In addition, some of the very houses have low humidity level inside compared to that outside. This is because of the poor ventilation systems, therefore leading to the accumulation of already used air inside. Furthermore, frequent cooking inside the house occurs and because of the poor ventilation system, accumulation of smoke was observed. The families affected were mainly those ones living in single or two roomed houses.

Therefore Namayanja a respondent interviewed from Lugonjo said, people are very poor, and therefore cannot afford to maintain themselves when it comes to feeding, construction of better houses and even medical bills. She further said that the situation gets worse when relatives visit.

As long as the situation is like this, the majority agrees that the most important is the wellbeing of their children because they are the victims of such bad conditions.

4.1.2 Poor sewerage system and lack of clean water

However, in this division, sewerage systems were not properly planned. So cannot meet the demands of the growing population. However much the government has tried, there are still places where tap water is still a problem. It happens so because the individuals can not afford. While a few who could afford could not reach expected amount of water per day. This can be shown below on a pie chart.



Compiled by researcher

With this, issue of water, majority of respondents claim the water is very expensive to buy, so I happen to interview Mr. Kalevu, and he said, in a day uses about 40-60 litres of water of which each jerry can cost 100 shillings. He says the situation gets worse when this tap water driers because his wife moves long distances to catch lake water.

Lack of clean water and sanitation facilities were also a key factor in keeping people poor, unhealthy and at the same time unable to improve their

livelihoods. While for the disabled people, the impact is greater. Also, the areas with least access to water and sanitation also tend to have a higher percentage of disadvantaged populations including the disabled people. The disabled people and elderly do face such problems like using poorly constructed latrines with no support material. With this, there is easy contamination. Floors are always slippery.

4.1.3 Pollution

The waters around Lake Victoria where the people fetch water are seriously polluted as a result of car washing, domestic wastes, fish processing. Therefore, this has led to the growth of algae. With this, input of phosphorous nutrient into the lake from washing bays and landing sites poses a threat to the fish. Also, access to clean and safe water is reduced.

In addition, urinating into the water bodies perpetuates urinary schistosomiasis since most farmers, traders and fishermen do ease themselves in the water body.

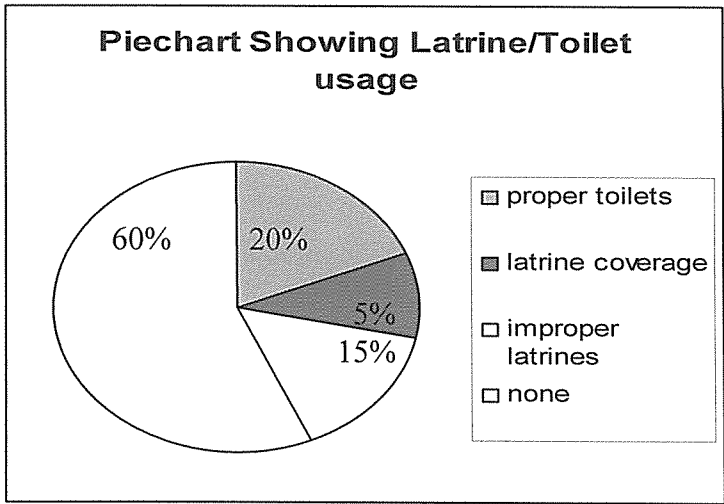
The community members use mainly pit latrines. Pit latrines often leach into ground waters hence contaminating with pathogens. This problem is certainly increasing where crucial ground water resource lies beneath crowded communities not connected to sewerage systems.

Further more, the residents of this division named the main risk factors for the sporadic outbreaks of diseases as inadequate sanitation, safe water coverage combined with bad eating and hygiene practices.

While others said, low latrine coverage and non – use of latrines was responsible for high concentration of the epidemics. The low latrine coverage was low because some areas were rocky like Kigungu. Landscapes that make it more difficult for most residents to construct latrines.

Mr. Wabudi, a respondent from Lugonjo said, during rainy seasons outbreaks usually occurred this was due to the unhealthy practices of emptying latrines in or hereby the streams. Therefore this is a big problem in the area especially or those families who really cannot afford clean water.

Chart showing people with proper toilets compared to latrines.



Compiled by researcher

Also, to some other homesteads, the content of pit latrines is deposited into fields to dry and decompose causing pathogens to wash into near by water bodies. The content is never treated.

But then, most of these pathogens also enter the human body via hands contaminated with faecal matter and in case of some helminthes worm infections directly through the skin.

4.1.4 Poor drainage system

Drainage systems are one issue which is always left behind heavy rains and therefore destroying roads, farm fields.

According to Mr. Onen, a resident in Nakiwogo said, “the poor drainage systems was one of the big causes of problems because his house is next to a channel which is always blocked and water cannot go through. So it becomes stagnant providing a good breeding ground for mosquitoes to breed. So his family has fallen victim.

4.2. Effects of poor environmental sanitation

4.2.1 Disease out break

Therefore, ingestion of faecal pathogens can cause diarrhea diseases, cholera, intestinal worms infections and typhoid fever. So most of the children especially those below the age of five are victims of these diseases, although there were cases of adults too. With such poor environmental conditions, children below the age of 5 years are at high risk to health.

At the same time, the percentage of illiterates was more than those educated. So this contributed a lot to the poor conditions in which people were living, malnutrition among children was observed as well. Therefore, if such a dangerous pathogen such as vibro cholera is introduced into such a community with poor sanitation, poor water supply and poor food safety, the

epidemic cholera may ensue. Lack of these sanitation facilities are key factors in keeping people poor, unhealthy and unable to improve on their livelihoods.

According to Mr. Kanya a respondent from Kitoro, 20% of death reports of children under 7 years were due to malaria. He added that malaria is a threat in the community.

Another respondent Mr. Gatete who was interviewed said, “Malaria has always been a threat especially to children under the age of five years and pregnant women”.

Majority of these respondents say medication is a very big problem therefore diseases like malaria often occurred as a result of stagnant waters around homes, and drainages.

4.2.2 Water pollution

Fresh water resources especially from Lake Victoria are increasingly becoming scarce. This is because of the high population growth and urbanization. The rapid population growth increases the production of faecal matter and waste water. Therefore, waste water is often discharged into Lake Victoria when untreated or partially treated potentially impacting on the health of all downstream users. Therefore, the human excreta and poor sanitation will lead to increased disease transmission through drinking water and contaminated food. Therefore these outbreaks can be shown on the table.

Region	% of humans reporting	Cholera	Dysentery	Malaria	Typhoid	Diarrhea
Kitooro	50	0	20	80	12	45
Kiwafu	25	0	13	110	8	1
Lugonjo	28	0	17	92	7	6
Nakiwogo	15	0	12	65	11	9

Compiled by researcher

The above table shows diseases that arise as a result of contaminations of drinking water and food.

Because most individuals are low-income earners, could not simply complete full doses. Therefore, areas, which are hit most, are the ones with inadequate facilities.

Therefore, environmental transmission of these disease pathogens occurs through several different routes. This may occur directly or indirectly.

Further more, the main organisms, which could pose a threat to the health of different individuals, are pathogenic bacteria, viruses, parasitic protozoa and helminthes that are excreted in large numbers from infected individuals.

Therefore the relationship between inadequate water supply and sanitation and some selected diseases can be shown on table.

Disease	Relationship
Diarrheal diseases	- Are strongly related with unsanitary excreta disposal, poor personal and domestic hygiene and unsafe drinking water
Shistosomiasis	- Strongly related to unsanitary - Excreta disposal and absence of nearby source of safe water.
Infection with intestinal helminthes	- Strongly related to unsanitary excreta disposal and poor personal and domestic hygiene

4.2.3 Loss of bio diversity

Moreso, the abundance of diversity normally occurring organisms in water bodies may be greatly affected. This is because of the shifts in the nitrogen and phosphorous compositions. This may therefore promote the growth of toxin producing cyano bacteria (blue-green algae). Also certain species may produce different toxins affecting people that come into contact with water.

Mr. Etot a fisheries officer said, fish species and important lake plants are being destroyed due to the over accumulation of different elements in the waters such as oils.

Also eutrophication and organic load may also enhance the occurrence of opportunistic bacterial pathogens.

Therefore, load of pathogens varies from time to time and reflect their abundance in human and animal populations.

4.3. Solutions/measures of poor environment sanitation

All in all, the best way to break these cycles is by improving sanitation coverage, waste waters, which are discharged by sewer systems, should be treated.

Most respondents said Education is a very important key factor. People should be educated on the basic sanitation and risks at which they are exposed.

The government should try and bring water to the poor people i.e. piped water. This will be able to assist the disabled who may not be in position to move long distances.

Some other respondents suggested that NGOs should also come in and help supply such utensils like drums, jerry cans, buckets that can at least be used to catch and store water for use.

Also, toilets should be constructed with appropriate access facilities for instance, should include ramps to reach raised toilet ways to allow disabled people to open, close and lock doors and should include a non – slip floor surface.

In addition, they further suggested that installing raised toilet seats and handrails can provide support to the disabled and elderly people who are unable to use a squat latrine.

More so, the price of piped water should be reduced so that even the peasant can easily have access to clean tapped water.

Drainage systems at the same time should be improved because the poor drainages hold water that leads to breeding grounds for vectors such as mosquitoes, which carry the malarial parasites.

Some individuals suggested in severe cases of malaria that the best way to prevent bites is to sleep under insecticide treated mosquito nets. Also, other measures were screening of houses, fan ventilators and insect repellants may also be useful.

Mr. Okello who is a resident in Kitooro said, “Other measures which prevent mosquitoes from breeding are environmental cleanliness and removal of stagnant water.”

CHAPTER FIVE

5.1. Conclusion:

Basically, human life is very much impacted by unsafe drinking water and poor environmental sanitation. Therefore, a rise of diseases related to polluted drinking water, unsanitary food preparations, improper excreta disposal and unclean household. With such environments, is a major burden of health of the people in these developing societies and are also the leading causes of ill health in children. For instance, diarrhea and dysentery alone strike young children.

Also, areas with the highest rate of infants, child mortality, lowest income and life expectancy usually have poor environmental sanitation services.

Therefore, environmental sanitation interventions can reduce the incidences of certain illnesses from 20% to 80% by inhibiting disease generations interrupting disease transmission and reducing disease exposure. However, sustainable health, especially for children is not possible without good environmental sanitation.

But then, the development interventions in the form of water supply, sanitation and hygiene education are therefore not meeting the needs of these developing communities. Because, there is currently a big percentage without safe drinking water.

5.2. Recommendations

Government should participate fully in implementing the laws and policies that protect the waters and environment at large from being polluted. This

should be by forming and funding bodies responsible for monitoring and implementing the policies.

The local community should also play a role in maintaining their environment. They should participate fully in supporting the government to observe the laws and regulations set to guard the environment. In case of interest of the whole community, the people in the area affected should sue or forward these individuals to higher authorities.

Environmental awareness must be created amongst the local people of the area through sensitization about the negative effects of poor environmental sanitation. This can be conveyed in seminars, radio, TV programs and newspapers among others and this should be done by the help of the government.

The local community in Entebbe, Division B and government should come up with incentives that can attract the support and funding from NGOs. This should be by forming village development associations and groups dealing with other activities like sustainable public health issues.

The population control measures like family planning and early marriages should be emphasized in order to reduce on the increasing population in the division. This will help reduce on the pressures on the resources available and hence reducing on slum developments as well.

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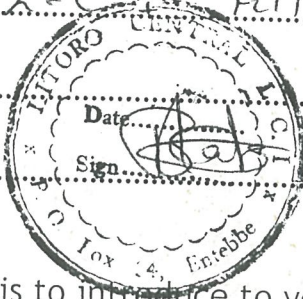


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Faculty of Social Sciences and Law

To: Lecturer KIIDRO-CENTRAL



This is to introduce to you Mr. /Miss WANDERA PETER
who is a bona fide student of Kampala International University,
He/She is working on a research project, which is a partial
requirement for the award of a degree.

I hereby kindly request you in the name of the University to accord
him/her all the necessary assistance required for this work.

Thank you very much in advance.

A.G.G. Gingyera-Pinyewa
Prof. A.G.G. Gingyera-Pinyewa
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