



The Study of Clean Water and Sanitation in Bunyenye and Bunyaka Villages in Luwero District SDG 6

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Abstract

Water scarcity affects over 40 percent of the people in the world. Although 2.1 billion people have improved water sanitation since 1990, dwindling drinking water supplies are affecting every continent. In Uganda, safe and affordable drinking water for all by 2030 requires investing in adequate infrastructure, providing sanitation facilities, encouraging hygiene, as well as protecting and restoring water-related ecosystems. Uganda has experienced two decades of economic growth, and there were also other factors leading to large population movement from rural to urban. However, the reversal of the trend of urban to rural migration occurred due to the coronavirus (COVID 19) and the lock down resulted in large numbers of people returning to villages which led to increased population figures and hiking the rates of poor sanitation and water pollution. Luwero District has an average per-capita consumption of 14 liters per a person per a day which is below the Ministry of Health recommended consumption of 20 liters per a person per a day. This paper explores perceptions and recommendations of the community on the challenges faced concerning water and sanitation and their solutions. The study objectives were to find out the number of water collection points, the distance to these water sources, status of these water points, adequacy of the water and remedies to the challenges. The study results showed that there were inadequate and poorly maintained water points in this community. We recommend a concerted effort of community awareness and sensitization to maintain and improve the available water points and full Government intervention in the water and sanitation issues under SDG 6.

Keywords: Water, Sanitation, Hygiene, Water Points, Health and Wellbeing, COVID 19

Introduction

Access to safe water, sanitation and hygiene, and water resource management are critical for human health, environmental sustainability, and economic growth. In acknowledgement of this, the General Assembly supported Sustainable Development Goal 6, guaranteeing the sustainable consumption and production patterns management of water and sanitation for everyone, as part of the 2030 Agenda for Sustainable Development. Six targets and nine important indicators comprise Goal 6, with drinking water, sanitation, and hygiene taking center stage. This paper looks at Goal 6 and how it can be implemented around the world.

Purpose

The project aims at addressing the issue of enhancing community awareness through sanitization, improving and maintaining the quality of existing water sources, as outlined under SDG 6 Clean Water and Sanitation. This issue is important because it will help to empower communities on managing and maintaining water points, improving water harvesting and collection points, empowering community on water purification methods as well as promoting the Implementation of IWRM (Integrated Water Resources Management).

Background Literature

For several decades, water specialists have talked about a "global water crisis," as have politicians and the general public in the last five to ten years. What exactly is this crisis? Is the world about to run out of water? Is there a lack of investment in making water accessible to people? Large investment in utilization of water resources occurred over the twentieth century (Kurian *et al.*, 2019). Although the world's population quadrupled in the previous century, water use⁴ increased sixfold. The governments of the United States and Australia, for example, built 5,000 cubic meters of water storage facilities for each of its residents. The majority of this infrastructure is intended to generate hydroelectricity and irrigate farmland, while some are intended to regulate floods and store water for residential water supply in urban areas. More money has been put into water distribution infrastructures, treatment facilities, sewage, and waste water treatment (Tortajada & Biswas, 2018).

Many people characterize "the water crisis" as a lack of access to clean and inexpensive water for over a billion people, as well as a lack of access to reliable and cheap sanitation for about half of the world's population. As a result, impoverished people suffer from diarrhoeal infections, which kill around two million people each year, the majority of them are children under the age of five (Komarulzaman, Smits, & de Jong, 2017). Others see the situation as impoverished and hungry people in rural regions lacking access to water to cultivate food and support their livelihoods. Three-quarters of the world's 1.2 billion impoverished and 800 million malnourished people reside in rural regions, with subsistence agriculture serving as their major source of food and income. There is definitely enough water in the globe for residential use, industry, and even food production; yet, these water resources are spread quite unevenly, and there are big, heavily inhabited areas with either poor water supplies or water dropping very unevenly throughout the year (Boretta and Rosa, 2019).

Methodology Used

The research paper used both qualitative and quantitative methods of research. Qualitative research was got from review of books, journals, papers et c while the quantitative method used several zoom meetings, phone calls, face to face interactions, focused group discussions, interviews and questionnaires.

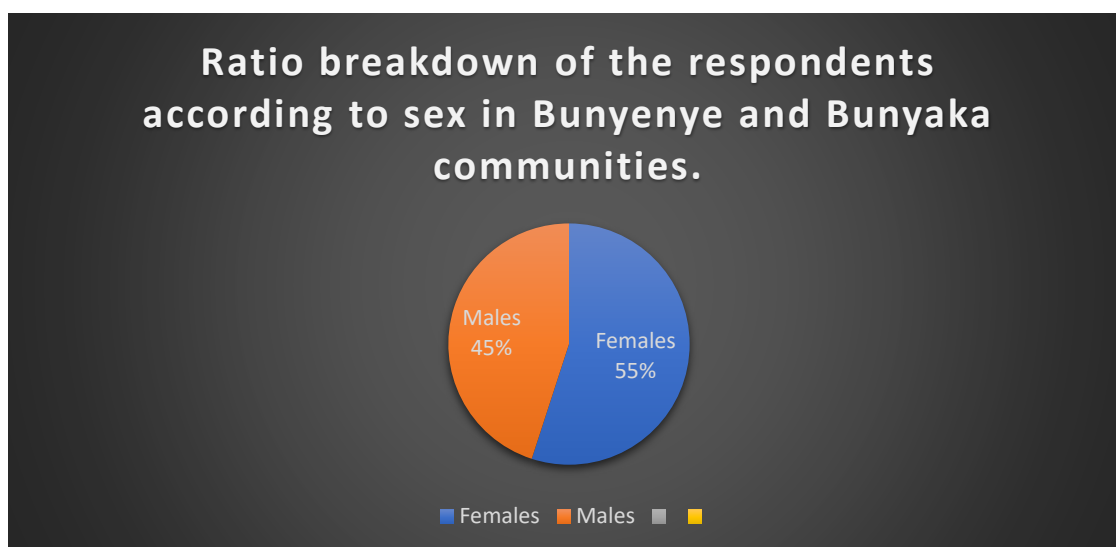
Originality/Value of the Paper

The project paper has never been authored by any other person and it is an authentic work of the project team of (Sustainable Development Goal 6 Clean Water and Sanitation). In addition, the paper follows ethics of research and all the information collected from the field will only be used for the purpose of the research.

Findings/Discussion

The study was carried out in Bunyenye and Bunyaka villages in Luwero District. The team was focused on reaching out to the community to generate relevant information about the water and sanitation situation.

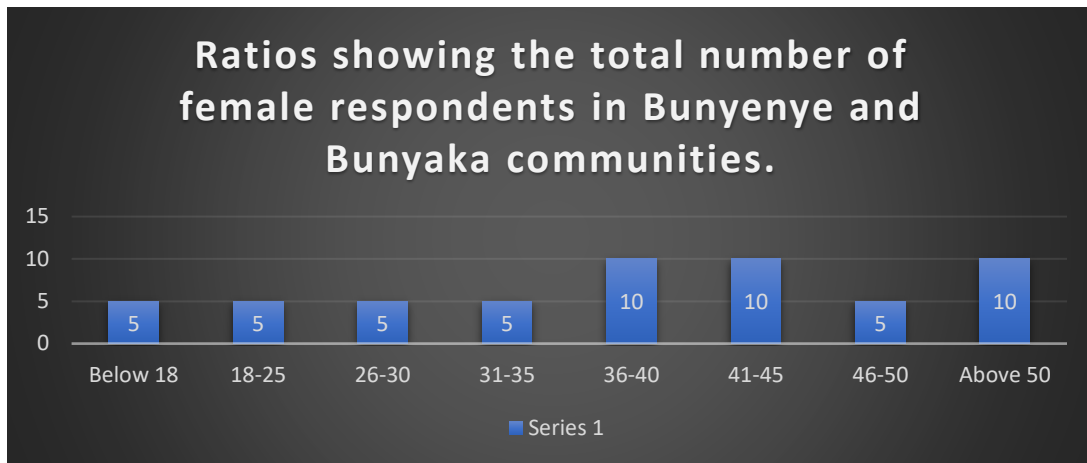
Figure 1. The Number of Respondents that were able to Answer the Questions were:



Ratios per Village per Gender:

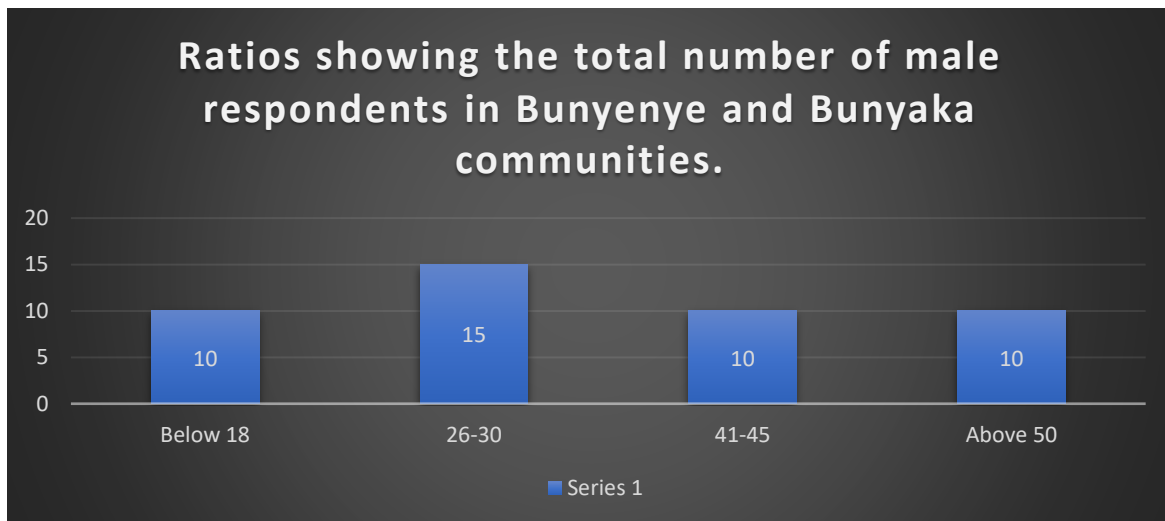
Bunyenye (female 26, Male 24) and Bunyaka (female 29, Male 21)

Figure 2. The 55 Females were as Follows:



From the above graph it is clear that majority of the women that took part in this research were between 36 and 50 years old. This means that most of the elderly women are the ones that take part in the search for water for their families.

Figure 3. The 45 Males were as Follows:



Majority of men that took part in the study were between 26-30, an age bracket mostly comprising those that are not married and would be looking for water on their own unlike their counterparts who are married and have left that duty to their wives.

The number of people living per household in the mentioned communities are 5 to 18 members. These include; father, mother, children, grandchildren, grandparents, uncles, and aunts.

Household Income

The Average Income of the Household:

The respondents were not receptive to this question. They found it difficult to disclose their financial statuses. 42% of the respondents who were welcoming to the question were mainly subsistence farmers.

Availability of Water Sources

The period the respondents have been in these communities includes; 48 people have been residents of these communities for 40 years, 22 people between 20-30 years and 30 between 10-20 years. The available water points for both Bunyenye and Bunyaka villages are; boreholes, shallow wells, harvested rain water, springs, and dug wells. These are the available water points that are used for all domestic activities. Most of them are access to the villages.

We also discovered that the main point of drinking water that people use in these communities are bore holes, which serve 60% of the village populations.

Distance to Water Points

The residents explained that they move about 1-2 kilometers to get to these water collection points. We managed to see the water points and to our observation, we discovered that; The distance to the water point is approximately one kilometer or even more depending on where the person is coming from which the farthest is 6 kilometers away. The distance to the water point makes it difficult for families to have water all the time in their homes. Families that have only the elderly people find it hard to move from home to the water point.

Water adequacy in these communities; have adequate water during the rainy season, however during the dry season, these water points don't have water at all. The water levels tend to go down and it becomes difficult to get access to water, yet the communities depended on these water points. The breakdown of bore holes also makes it difficult to always have adequate water. About 12% have piped water that is bought from the few people that have piped water is very expensive. The rain harvested water is unreliable because it happens between February and April and sometimes in August. Due to lack of water in the home, poor sanitation becomes an issue where by most domestic activities cannot be carried out like mopping of housing, washing clothes, cooking, etc.

Water Movement from Source

Means of water transportation from the water points (water collection points) to homes; water is commonly fetched and transported by the young children of 8-12 years and women to their homes. They carry the jerrycans of water on their heads to their homes, a few families that have bicycles help make it easy for them to transport the water. The use of children to fetch water affects their education as they have to come from school go to fetch water and run back to school

during lunch break and in most cases, they end up going back to school. In addition, this also affects their security as they are young and move long distances in search of water.

Quality of Water

The quality of water in the water points; responses from the communities indicated that these water points are not clean and do not have the best water for drinking. However, they are all they have. People and animals use the same water points and animals tend to put dung in the water points making the water not safe for home use. Brick makers next to the water points make it dirty and most time use the water excessively and the water points run dry and the authority have policy in place to deal with such people.

The residents informed us that they do try to maintain the available water points by draining, rubbish picking, fencing with sticks or wood and slashing the bushes around water points that is organized by the local leaders (LC1).

The communities shared some of the methods that are used to purify water that is got from the water points, these include boiling and filtering.

Challenges at the Water Source

Some of the challenges faced while using these water sources include; the water points are known for accidents as young children below 18 years are at risk of drowning in the wells. In addition, long distance to the water points makes it difficult for all homes to have adequate water. It was also revealed that dirty, unsafe water which may contribute to the spread of diseases like diarrhea and typhoid. Among the challenges is harassment of most girls and women by men. There is high maintenance fees for the bore holes and piped water and the brick makers that share the same water points making it dirty. It was also revealed that the floods from the running water during the rainy season make the water points dirty. Finally, dug wells don't have enough water as they tend to dry up during the dry seasons due to the many people that use them.

Possible Solutions to the Challenges

Led by the government there should be fencing off the water collection points to prevent accidents. Establishment of new water collection points. Carry out water purification for the available water points. Create rules, laws and protective strategies for the water points that protect both girls and women from being harassed, including raped. To re-channel the floods from the running water that enters the wells. Filtering and boiling of the unsafe water and finally, slash around the water points.

Responses from the Community Leaders

These are some of the Responses we Collected from the Community Leaders of Both Bunyenye and Bunyaka Villages

We managed to interview five community. From our observation, these leaders have been in these communities for at least 5 years. They were eligible to give the accurate information needed on the status of water and sanitation in these communities.

Some of the challenges that the leaders and the community members face with water in these communities include; limited water sources in the village, poor water quality, long distance to water points, inadequate water storage facilities, pollution of the water sources and poor maintenance of water points.

Some of the solutions that were generated from the community leaders include;

Building new water points, community sensitization on how to maintain water points, Community sensitization on water storage, improving the drainage system, draining the polluted water points, fencing of the water points (however, the community members don't have the funds to perform this activity), mending broken boreholes (they don't have the funds) and government involvement in the water and sanitation issues in the community through providing expertise to mend and build boreholes.

Research Limitations/Implications

Research constraints included; minimum resources while carrying out the survey which backlogged the community fieldwork hence opting for virtual means of communication which supported our research, lack of full community participation as a result of lack of enough publicity and awareness. This made it difficult to penetrate to certain households and even some of those that we reached out to, were hesitant to providing us with enough information. The COVID 19 pandemic was a huge set back to our research as well as the imposed curfew time could not enable us to reach out to some of the communities hence making our respondents inaccessible.

Recommendations

After looking at the research presented in this paper and findings of the study the following recommendations were proposed;

- i. Improving and maintaining the quality of the water points in Bunyaka and Bunyenye villages in Luwero district, requires the need to enhance community awareness through sensitization, improving and maintaining the quality of the water points, improve water harvesting, collection points and storage facilities, empower community on water purification methods, and to promote the Implementation of IWRM (Integrated Water Resources Management) under SDG 6.

- ii. Improve sanitation by installing toilets and sanitation facilities that flush into a sewer or a secure enclosure.
- iii. Education can help to promote excellent hygiene practices. Hand washing with soap and water can cut diarrhea cases by up to 35%.
- iv. Install rainwater collection and storage devices to gather and store rainwater for drinking or refilling subterranean aquifers. Create wells to obtain groundwater from aquifers underneath.
- v. To make drinking water safe, provide household water-treatment capabilities via filters, sun disinfection, or flocculants.
- vi. We advise using individual filter straws. With the exception of salt water, these practical small-scale solutions enable people to drink water from almost any source. Utilizing a very small medium that traps debris and germs inside its pores, the device creates clean, drinking water by circulating water through it. Up to 99 percent of germs and other impurities in water are eliminated by the personal filter straws.
- vii. To enhance water quality, promote low-cost options such as chlorine pills or plastic bottles that may be exposed to sunshine.
- viii. Rainwater collection is essential. Humans have been collecting rainwater from surfaces where it falls and storing it as a result for hundreds of years. It is an efficient technique to lessen dependency on other water sources and to offer water in isolated rural locations that might not have access to regular water supply.
- ix. Finally, the government or other partners, such as NGOs, should supply smart irrigation controls to farmers in these two communities. This technology helps irrigation system owners set an effective water schedule to maintain healthy plants and remotely operate their systems using smart devices, improving irrigation system water usage efficiency. It allows for the conservation of the scarce water resources and is especially helpful in locations where there is a water shortage.

Conclusion

In conclusion, being able to prevent exposure to a variety of illnesses requires access to clean water and sanitary facilities. Millions of people perish each year from illnesses brought on by poor water quality, sanitation, and hygiene. This paper has revealed that there are inadequate and poorly maintained water points in these community. Amongst its recommendations the study recommends that the government engagement in the water and sanitation issues under SDG 6 as well as a combined effort of community awareness and enlightenment to maintain and enhance the existing water points. Access to clean water and sanitation as well as sustainable

management of water resources are crucial for maximizing economic output and yielding large returns on current investments in health and education.

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Appendices

Appendix I: Questionnaire

Consent

I agree to be part of this study.

- Yes.....
- No.....

Demographics

1). The gender of the head of the household:

- Male.....
- Female.....

2). Age of Respondent

- Less than 18.....
- 18- 25.....
- 26- 30.....
- 31-35.....
- 36- 40.....
- 41- 50.....
- 51 and above.....

3). Number of persons in the household.

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4). Average income of the households (in the last two months)

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5). How long have you lived in this community? (years)

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Knowledge, Attitude and Practices (Water)

1). What are the available water sources in this community?

- Boreholes.....
- Shallow wells.....
- Piped water.....
- Harvested water.....
- Pumped water.....
- All the above.....
- Others.....

2). Of the above, where does your household mainly draw water from?

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3). What is your main source of water for drinking?

- Boreholes.....
- Shallow wells.....
- Piped water.....
- Harvested water.....
- Pumped water.....
- All the above.....
- Others.....

4). How far is the water source from your home in kilometers?

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5). Do the water sources always have adequate water?

- Yes.....
- No.....

6). What are the means of water transportation to your homes?

- Bicycle
- Car
- Carrying on the head

7). What is the quality of the water sources in this community?

- Always Clean
- Sometimes clean
- Not clean

8). Do you maintain these water points?

- Yes
- No

9). How do you maintain these water sources?

- Draining
- Fencing
- Rubbish picking
- Slashing the bush
- All the above

10). What are the possible methods you use to purify the water?

- Boiling
- Sieving
- Water purifiers

11). What challenges do you face while using these water sources?

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12). What are the possible solutions you have to these challenges?

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13). How do you store water from the water source?

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Sanitation

1). What facilities for fecal disposal do you use in your household?

- Open space
- Latrine
- The bush
- Others(specify)

2). Do you have a latrine?

- Yes
- No

3). How do you dispose waste in your household?

- Use of a dustbins
- Burning
- Burying
- Recycling
- Used at the farm
- Others(specify)

4). What challenges do you face in maintaining sanitation and cleanliness?

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5). What suggestions do you have in solving the above challenges?

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NOTE 2: The following questions were posed to the community leaders of both Bunyenye and Bunyaka villages.

1). Do you hold any leadership position in your community?

- Yes
- No

2). What is your leadership position in this community?

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3). How long have you lived in this community?

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4). What are some of the challenges that you face in this community?

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5). What are some of the challenges the community faces concerning water?

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6). As a leader, what are some of the solutions that you have come up with to help the people in this community?

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7). How has the government been helpful concerning these challenges?

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8). What other engagements have you had with other organizations concerning the situation of water and sanitation in this community?

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