



## Community Concerns Uganda

Email: [concernsuganda@gmail.com](mailto:concernsuganda@gmail.com)

Website: <http://communityconcernsug.org>

P.O. BOX 196, Jinja

# Baseline Survey Report:

Knowledge and Practices towards Water, Sanitation and Hygiene (WASH)  
in two primary Schools in Mayuge district.



September 2017



Nourish International

Columbia University Chapter

nourish  
INTERNATIONAL

## Executive Summary

**Introduction:** Though providing better sanitation and hygiene services in schools not only reduces hygiene-related diseases, it also improves school attendance and retention. In many rural schools in Uganda, little is known about the adequacy of safe drinking water, associated practices and diseases. The purpose of this survey was to prepare baseline data for the Water, Sanitation and Hygiene (WASH) project for Community Concerns Uganda (CCUg) in two selected primary schools in rural areas in Mayuge district. The major aim of the project is to promote hygienic behaviour among 500 pupils and 4 teachers.

**Methodology:** The survey used a descriptive study design employing both qualitative and quantitative methods of data collection. A total of 139 pupils were selected using simple random sampling method from Baitambogwe and Wabulungu Primary Schools. A pretested semi-structured questionnaire, observation checklist and key informant guide were used to collect data from pupils and teachers.

Data was entered into Statistical Package for Social Scientists (SPSS version 22) and subsequently cleaned and analyzed. Qualitative data was transcribed verbatim before it was thematically analyzed.

**Results:** Most pupils (65.5%) had poor knowledge about safe drinking water. Many of them (58.9%) considered unsafe water as safe for drinking and more than half (50.4%) did not know ways of preparing safe water for drinking while a significant number (36%) did not know that certain diseases are contracted through unsafe drinking water.

Most pupils (66.2%) rated the quality of drinking water at both schools as being of moderate quality. A large number of them (95%) were using cups stored in dirty places to draw water for drinking. In addition, pupils who considered the available drinking water as poor noted that it contained metal particles (48.1%), dirty particles (22.2%), had germs (16%) and small stones (3.7%) with a bad smell (3.7%).

Though all pupils were using latrines to dispose of faecal matter, these were not enough for both boys and girls. Both schools had pupil to latrine ratios which were 2-3 times higher than the recommended ratio by the Ministry of Education and Sports. Pupils were using water, leaves, toilet paper, pieces of paper and their fingers to cleanse their anal passage after defecation. Furthermore, a majority of pupils (89.2%) had poor hand hygiene practices, as (86.3%) were not washing their hands with water and soap after visiting a latrine and (98.6%) did not wash their hands with water and soap before eating food in the week preceding the survey.

This contributed to poor sanitation and hygiene related diseases such as diarrhoea (43.9%) and typhoid (41%). On average, pupils experienced diarrhoea 1.5 times per student and missed 2 days

last term due to suffering from the disease. For typhoid, pupils experienced it 1.6 times on average and lost 3 days each time they suffered from the disease.

**Conclusion:** Due to inadequate knowledge of safe water and poor hand hygiene practices, 4 out of every 10 pupils who participated in the study experienced diarrhoea and typhoid several times within last term.

There is need to health educate pupils and teachers about sanitation and hygiene with emphasis on safe water, hand hygiene, latrine use and rubbish disposal.

## Table of Contents

Executive Summary.....	i
Table of Contents .....	iii
List of Figures .....	v
List of Tables.....	vi
Acknowledgement .....	vii
1.0 Background .....	1
2.0 Survey Implementation .....	1
2.1 Purpose of the Project.....	1
2.1.1 Objectives of the Project .....	1
2.2 Purpose of the Survey .....	1
2.2.1 Objectives of the Survey .....	1
3.0 Methodology .....	2
3.1 Survey Design, Setting and Population.....	2
3.2 Sample Size and Sampling Procedure .....	2
3.3 Survey Instruments and Data Collection Methods.....	3
3.4 Data Management and Analysis.....	3
3.5 Ethical Considerations .....	3
3.6 Limitations and Mitigations to the Survey .....	3
4.0 Survey Findings.....	4
4.1 Demographic data of pupils.....	4
4.2 Knowledge and Practices of Pupils towards Drinking Water.....	6
4.3 Water Quality and Quantity at School .....	7
4.3.1 Water Quantity .....	7
4.3.2 Water Quantity .....	9
4.4 Waste Disposal and Management.....	10
4.4.1 Accessibility to Latrines .....	10
4.4.1 Latrine to Pupil Ratio .....	11
4.4.2 Rubbish Disposal in and outside class.....	12
4.5 Hand Hygiene among Pupils.....	13
4.6 Ill health associated with poor sanitation and hygiene among pupils .....	14
4.6.1 Diarrhoea and Typhoid among pupils .....	15
4.6.2 Days Missed due to Diarrhoea .....	16
4.6.3 Days lost due to Typhoid .....	17

3.7 Data Obtained from School Administrators .....	17
4.8 Ratings of Measured Variables .....	19
4.8.1 Pupils ratings on knowledge of safe drinking water .....	19
4.8.2 Pupils' ratings of Quality of drinking water at school .....	20
4.8.3 Pupils rating of water Quantity accessed at school .....	20
4.8.4 Pupils rating of Accessibility to Latrines.....	21
4.8.5 Rating of Hand Hygiene Practices among Pupils.....	22
5.0 Discussion and Recommendations .....	23
5.1 .1 Knowledge about Safe drinking Water .....	23
5.1.2 Water Quality and Quantity .....	23
5.1.3 Waste Disposal and Management.....	24
5.1.4 Hand Hygiene among Pupils.....	24
5.1.5 Diseases associated with poor sanitation among pupils .....	24
5.2 Conclusion .....	25
REFERENCES.....	26

## List of Figures

Figure 1: Caregiver education .....	5
Figure 2: Occupation of Respondent's caregivers .....	5
Figure 3: Knowledge on diseases due to taking unsafe drinking water .....	7
Figure 4: Safety of water at school for drinking .....	8
Figure 5: Access to safe drinking water.....	9
Figure 6: Willingness to utilize safe drinking water if provided .....	9
Figure 7: Days Missed due to diarrhoea.....	16
Figure 8: Days Missed due to Typhoid .....	17
Figure 9: Knowledge rating of pupils about safe drinking Water.....	19
Figure 10: Water Quality Rating.....	20
Figure 11: Rating of Water Quantity by Pupils .....	21
Figure 12: Rating of Hand Hygiene Practices among Pupils.....	22

## List of Tables

Table 1: Distribution of Sampled Pupils in 2 schools.....	2
Table 2: Age, class and kind of caregiver respondents were living with .....	4
Table 3: Safe water, preparation and its importance.....	6
Table 4: Place and utensil used in drawing drinking water .....	7
Table 5: Availability of safe drinking water at school when needed .....	8
Table 6: Quantity of water taken by pupils at school in a typical day .....	9
Table 7: Responses on health education about Sanitation and Hygiene.....	10
Table 8: Disposal of faecal matter by pupils.....	10
Table 9: Showing Pupil-Latrine Ratio .....	11
Table 10: Showing responses on rubbish disposal in class and school .....	12
Table 11: Practices related to hand hygiene among pupils at school a week prior to the survey...	13
Table 12: Showing frequency of stomach pain, diarrhoea and typhoid in the term.....	15
Table 13: Pupils' ratings of accessibility to latrines .....	21

## Acknowledgement

We would like to take this opportunity to express our gratitude to individuals and institutions that in one way or another contributed to the making of this baseline survey.

First of all, we would like to thank all the pupils and teachers from Wabulungu and Baitambogwe Primary schools who participated in this survey.

We also appreciate the support from Nourish International-Columbia University Chapter, which not only facilitated this survey but will also initiate interventions about the issues raised in this report.

We are also thankful of the efforts put in by several CCUg staff members; Baife Charles, Mirembe Shakira, Ekapolon Job, Nabirye Justine, Namwase Grace and Nangulu Michael for designing the several data collection tools, collecting data, entering it into Statistical Package for Social Scientists (SPSS), transcribing qualitative data and writing this report.

This survey report will provide a credible reference and guide for CCUg to implement a WASH project on safe drinking water and waste disposal in the 2 selected primary schools.

Nakirya Brenda Doreen,

Team Leader,  
CCUg

## 1.0 Background

Access to safe and clean drinking water and sanitation is a human right<sup>1</sup>; however, 2.1 billion people lack safe drinking water at home and more than twice as many lack sanitation<sup>2</sup>. In addition, 31% of schools worldwide don't have clean water and 34% lack adequate toilets<sup>3</sup>.

Unsafe water, inadequate sanitation and lack of hygiene not only affect the health, safety, and quality of life of children, they also claim the lives of an estimated 1.5 million children under the age of five who die each year from diarrhea. Providing better water, sanitation and hygiene (WASH) services in schools reduces hygiene-related diseases. An estimated 1.9 billion school days could be gained if the Sustainable Development Goals (SDGs) related to safe water supply and sanitation are achieved and the incidence of diarrheal illness is reduced.

In Uganda, about a quarter of the country's population lacks access to clean water. In Mayuge district, little is known about access to clean water and sanitary facilities in Primary Schools. This survey was conducted in order to prepare baseline data for the Water, Sanitation and Hygiene (WASH) program for Community Concerns Uganda (CCUg). The survey was conducted in September 2017.

## 2.0 Survey Implementation

### 2.1 Purpose of the Project

The major aim of the project is to promote hygienic behaviour among 500 pupils in 2 primary schools by both pupils and teachers. The project seeks to improve the health and learning performance of school children, their families and teachers through reduction of water- and sanitation-related diseases.

#### 2.1.1 Objectives of the Project

1. To improve the quality and quantity of safe drinking water in 2 primary schools in Mayuge district.
2. To improve waste disposal and management in 2 primary schools by both teachers and pupils.

### 2.2 Purpose of the Survey

The overall purpose of the survey was to assess the quantity and quality of drinking water, waste disposal, and associated illnesses among pupils in 2 primary schools in Mayuge district.

#### 2.2.1 Objectives of the Survey

1. To assess the quantity and quality of drinking water taken by 140 pupils in Baitambogwe and Wabulungu Primary Schools, Mayuge districts.
2. To establish waste disposal and management practices among 140 pupils in Baitambogwe and Wabulungu Primary Schools, Mayuge districts.
3. To investigate the incidence of water- and sanitation-related diseases experienced by 140 pupils in Baitambogwe and Wabulungu Primary Schools, Mayuge districts.

---

<sup>1</sup> United Nations (2010). General Assembly Adopts Resolution recognizing access to clean water, sanitation as a human

<sup>2</sup> WHO (2017). 2.1 billion people lack safe drinking water at home, more than twice as many lack sanitation. <http://www.who.int>

<sup>3</sup> UNICEF (2015). Advancing WASH in Schools Monitoring. <https://www.unicef.org>

### 3.0 Methodology



#### 3.1 Survey Design, Setting and Population

The project was funded by a grant from Nourish International (under Columbia University).

The survey used a descriptive study design employing both qualitative and quantitative methods of data collection.

The population included primary school pupils studying from 2 primary schools; Baitambogwe and Wabulungu Primary schools, both situated a few meters off Jinja-Iganga Highway in Mayuge district.

Baitambogwe Primary School is located in Baitambogwe Village, Baitambogwe Sub County, Mayuge district while Wabulungu Primary School is located in Wabulungu Village, Magamaga Town Board, Mayuge district.

The survey included pupils aged 5-17 years, studying from P.1 through P.7 in both schools. It also involved 2 school administrators, 1 from each school.

#### 3.2 Sample Size and Sampling Procedure

Though the survey was supposed to include 140 pupils and 2 teachers, data was collected from 139 pupils and 2 teachers.

The survey used a simple random sampling method where by teachers and data collectors randomly selected 10 to 35 pupils from each class (P.1-P.7).

In addition, convenience sampling was used to select school administrators who acted as Key Informants.

**Table 1: Distribution of Sampled Pupils in 2 schools**

Class	No. of Students selected	Percentage
P.1	12	8.6
P.2	10	7.2
P.3	34	24.5
P.4	23	15.5
P.5	16	11.5
P.6	28	20.1
P.7	16	11.5
Total	<b>139</b>	<b>100</b>

### 3.3 Survey Instruments and Data

#### Collection Methods

- a) The study used a pretested semi-structured questionnaire designed to address the specific objectives of the survey. The Questionnaire was individually administered to pupils by a team of trained staff and interns through a face-to-face interview. In order to ease comprehension of the tool, the questionnaire was translated into Lusoga for pupils who had limited understanding of the English language.
- b) A Key Informant Guide was designed and used to collect data from school administrators through an oral interview methodology. The collected data was recorded verbatim using an audio recorder.
- c) An observation checklist was used to collect information as observed by the data collectors concerning the hygienic practices of pupils and available hygienic facilities in the 2 primary schools.

#### 3.4 Data Management and Analysis

After each day of data collection, collected data was checked for completeness and coded. It was later stored in spring files.

Data was entered into Statistical Package for Social Scientists (SPSS version 22) and subsequently cleaned and analyzed.

Descriptive analysis in the form of frequency counts and percentages was used.

Qualitative data was first transcribed verbatim and followed by a replay of the audio while re-reading the transcripts at least 5 times before it was thematically analyzed. A master sheet was developed and used to make assessments of key issues raised by informants in comparison with quantitative data obtained from pupils.

Qualitative data is presented in texts and quotes.

### 3.5 Ethical Considerations

CCUg already had an existing Memorandum of Understanding (MoU) with the participating schools. Nonetheless, the data collection team explained to the school administration the details pertaining to the survey; the purpose and nature of the project and sought additional administrative permission to conduct the survey from the schools.

After obtaining permission from the schools, the team also explained the purpose and nature of the data collection exercise to the classroom teachers and later pupils. Staff conducting the survey advised respondents of the voluntary nature of their participation and assured them that their responses would be strictly confidential.

Verbal consent was sought from both teachers and pupils.

#### 3.6 Limitations and Mitigations to the Survey

- a) Some pupils, especially those that belonged to the lower classes were shy and reluctant to easily provide the required data. The data collectors built rapport with the pupils, making them feel at ease before collecting data from them.



- b) Though the survey measured the incidence of diarrhoea and typhoid among pupils, information about mortality due to the diseases was not available through the schools.

## 4.0 Survey Findings



*This section presents findings in accordance with the objectives of the survey. Results are arranged according to demographic data, knowledge of safe drinking water, water quality and quantity at school, waste disposal, latrine use, hygiene promotion and associated illnesses.*

### 4.1 Demographic data of pupils

**Table 2: Age, class and kind of caregiver respondents were living with**

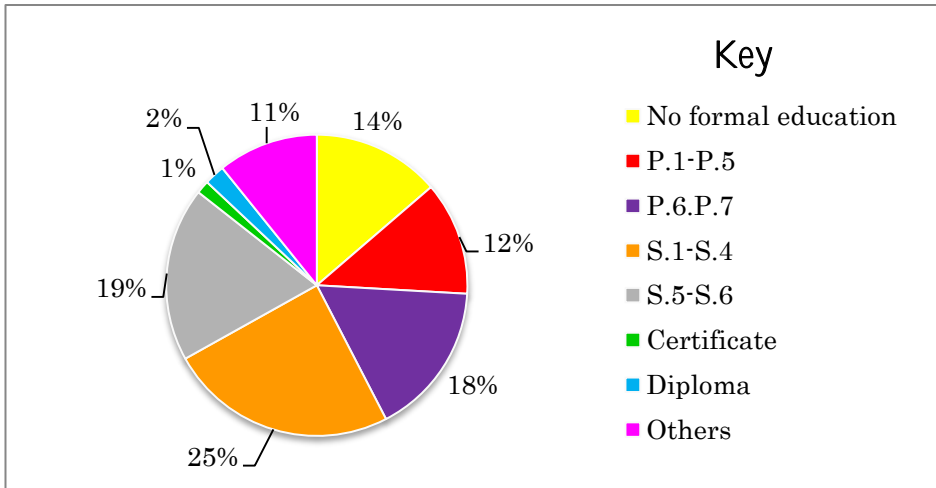
Age	Frequency (n=139)	Percentage (%)
5-9 years	47	33.8
10-14 years	88	63.3
15-19 years	4	2.9
<b>Class</b>		
P.1	12	8.6
P.2	10	7.2
P.3	34	24.5
P.4	23	16.5
P.5	16	11.5
P.6	28	20.1
P.7	16	11.5
<b>Kind of caregiver</b>		
Both parents	79	56.8
Mother only	29	20.9
Father only	07	5.0
Grand parent	14	10.1
Others	10	7.2

The highest number (63.3%) of pupils were aged 10-14 years and the mean age was 7 years.

Most respondents (24.5%) were studying in P.3 while the least (7.2%) were in P.2.

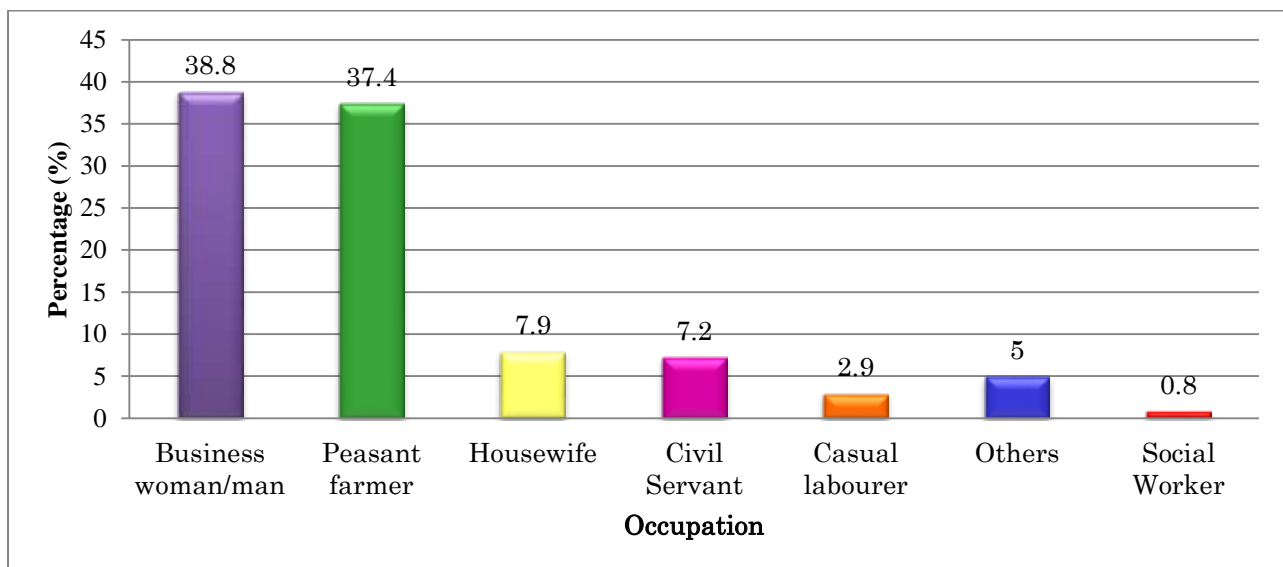
The majority of respondents (56.8%) were staying with both parents while the fewest (5%) were living with their fathers only.

**Figure 1: Caregiver education (n=139)**



The highest number of respondents (25%) reported that their caregivers had attained S.1 to S.4 educational level.

**Figure 2: Occupation of Respondent's caregivers (n=139)**



Most respondents' caregivers were business women/men while fewest (0.8%) were social workers.

## 4.2 Knowledge and Practices of Pupils towards Drinking Water



*This section presents findings on pupils' understanding of and practices towards drinking water*

**Table 3: Safe water, preparation and its importance**

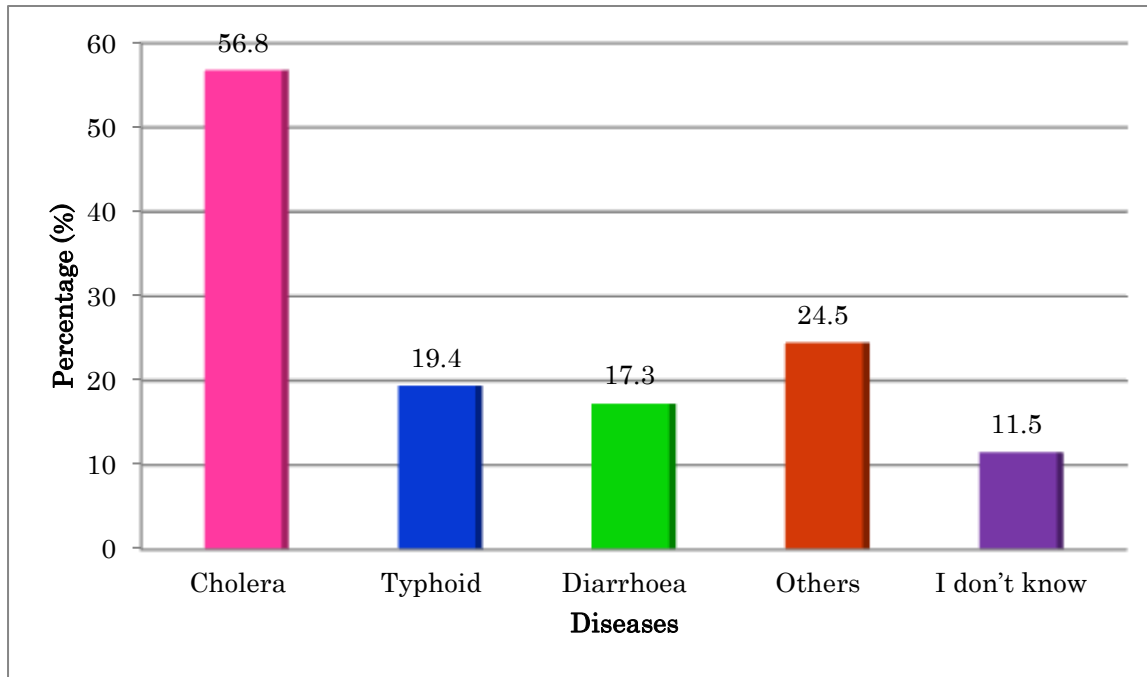
Pupil's understanding of safe drinking water	Frequency (n=139)	Percentage (%)
Any water	03	2.2
Boiled water	57	41.0
Tap water	21	15.1
Borehole water	45	32.4
Spring water	06	4.3
Others	07	5.0
<b>Knowledge on preparation of safe drinking water</b>		
I don't know	70	50.4
Boiling	59	42.4
Add water guard	2	1.4
Sieving	8	5.8
<b>Importance of taking safe drinking water</b>		
I don't know	17	12.2
To prevent diseases	77	55.4
To prevent germs	24	17.3
To prevent diarrhoeal diseases	10	7.2
To quench one's thirst	11	7.9

Most respondents (41%) considered boiled water as safe water for drinking.

Slightly more than half (50.4%) of pupils they did not know how to prepare safe water for drinking.

The majority of respondents (55.4%) reported that it is important to take safe drinking water because it prevents diseases while 7.2% indicated that it prevents diarrhoeal diseases.

**Figure 3: Knowledge on diseases due to taking unsafe drinking water (n=139)**



*Note: Respondents mentioned multiple answers*

Most respondents (56.8%) associated cholera as a disease linked with drinking unsafe water. Nearly 11.5% of respondents did not know any disease associated with the ingestion of unsafe water.

### 4.3 Water Quality and Quantity at School

#### 4.3.1 Water Quantity

**Table 4: Place and utensil used in drawing drinking water**

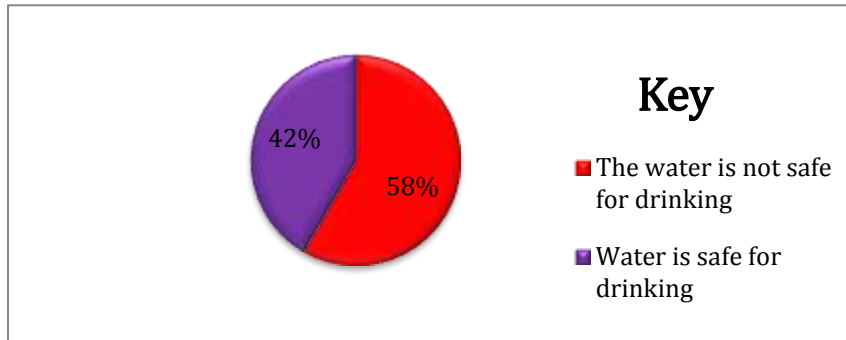
Place of drawing drinking water at school	Frequency (n=139)	Percentage (%)
Borehole	132	95.0
I come with drinking water from home	1	0.7
I don't drink water at school	06	4.3
<b>Utensil used for drawing drinking water at school</b>	<b>(n=132)</b>	
I use a cup	111	84.1
I use my hands	12	9.1
I use a bottle	06	4.5
I use a small jerrican	03	2.3
<b>Place where the utensil used for drawing drinking water is kept</b>	<b>(n=120)</b>	
In my bag	16	13.3
In the desk in the class	26	21.7
The teacher keeps it in the office	02	1.7
I don't have a specific cup for drinking water	76	63.3

An overwhelming majority of pupils (95%) indicated that they draw drinking water from the borehole while 4.3% don't drink water at school.

When asked what is used for drawing drinking water at school, the majority of pupils (84.1%) said they use cups.

Most respondents (63.3%) stated that they don't have a specific cup for drinking water, and hence don't keep the cup.

**Figure 4: Safety of water at school for drinking (n=139)**



Most respondents 81 (58%) reported that the quality of drinking water at school is not good. Of these, 38 pupils (48.1%) said the water contains metal particles, 18 (22.2%) revealed that it has dirty particles, 13 (16%) reported that it has germs, 5 (6.2%) said pupils push dirty

things inside the borehole where they draw water while 3 (3.7%) revealed that it contains small stones and has a bad smell respectively.

**Table 5: Availability of safe drinking water at school when needed**

Availability of drinking water when needed	Frequency (n=139)	Percentage (%)
Yes	69	49.6
No	70	50.4
<b>Actions taken when pupils are unable to access drinking water at school</b>	<b>(n=70)</b>	
I went home immediately to access drinking water	11	15.7
I just drank the available water	48	68.6
I waited until the school break to drink from home	11	15.7

When asked whether in the past two weeks before the survey, they experienced a time when they needed to take drinking water from school and accessed it, most respondents (50.4%) disagreed. When asked what actions they took when they failed to access

drinking water from school, more than half (68.6%) said they just drank the available water, while (15.7%) went home immediately to access drinking water. This implies that some pupils miss lessons while others delay drinking water for a whole day as they wait to access drinking water elsewhere.

When asked whether the lack of easy access to drinking water at school has an impact on their classroom attendance, (27.3%) of pupils agreed. Of these, 60.5% revealed that they spend quality time looking for water at school or elsewhere -- time which they otherwise would have used to learn. Just over 39% said their attention span is often affected when they are thirsty in class.

### 4.3.2 Water Quantity

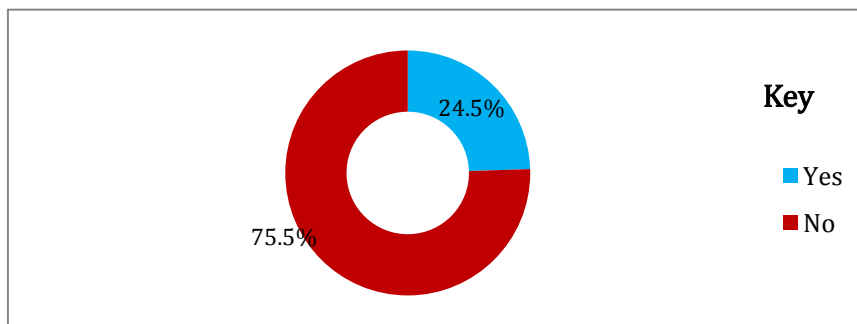
**Table 6: Quantity of water taken by pupils at school in a typical day**

Quantity of water taken per day	Frequency (n=139)	Percentage (%)
I don't drink water at school	09	6.5
Less than a cupful	14	10.1
1-2 cups	91	65.5
3-4 cups	19	13.6
5 cups	6	4.3
<b>Period of time pupils usually drink water</b>	<b>(n=130)</b>	
Early in the morning	03	2.3
During break time	32	24.6
During lunch break	89	68.4
Evening	04	3.1
Anytime	02	1.5

The majority of respondents (65.5%) were drinking 1-2 cups of water per day.

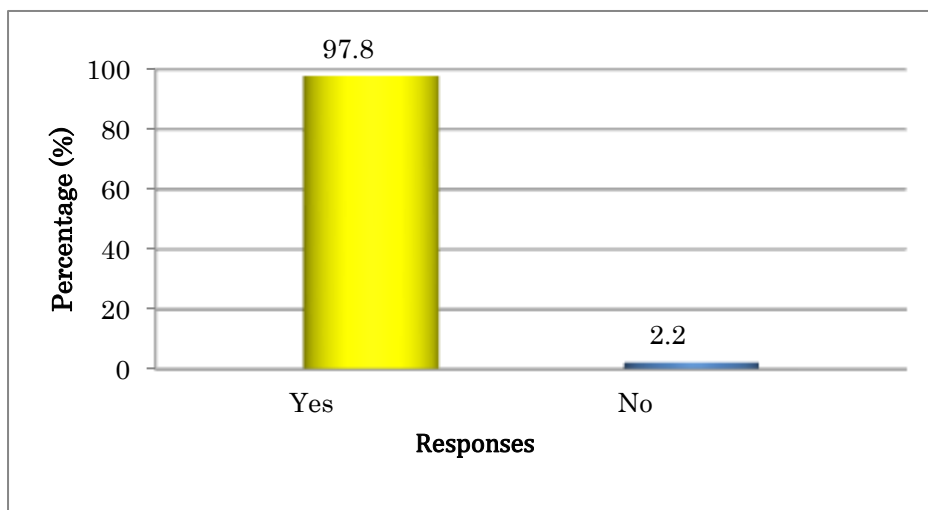
Of these, 68.4% usually drink water during the lunch break.

**Figure 5: Access to safe drinking water (n=139)**



Slightly over three quarters (75.5%) of study participants did not have access to safe drinking water at school.

**Figure 6: Willingness to utilize safe drinking water if provided (n=139)**



An overwhelming majority of participants (97.8%) indicated their willingness to utilize safe drinking water if it were provided by the school.

**Table 7: Responses on health education about Sanitation and Hygiene**

Taught about sanitation and hygiene	Frequency (n=139)	Percentage (%)
<b>I was taught</b>	126	90.6
<b>I was not taught</b>	13	9.4
Source of Training about Sanitation and Hygiene	(n=126)	
<b>Teacher</b>	125	99.2
<b>Head Master</b>	01	0.7

An overwhelming majority (90.6%) of pupils indicated that they were primarily taught about sanitation and hygiene by their teachers.

## 4.4 Waste Disposal and Management

This section of the survey covered access to and use of latrines, and rubbish disposal and management. Data presented here includes information extracted from observation checklists.

### 4.4.1 Accessibility to Latrines

**Table 8: Disposal of faecal matter by pupils**

Place where pupils ease themselves	Frequency (n=139)	Percentage (%)
<b>Pupils' latrine</b>	134	96.4
<b>Teacher's latrine</b>	05	3.6
Whether the latrines provide privacy to both boys and girls		
<b>Yes</b>	75	54
<b>No</b>	64	46
<b>Reasons for lack of privacy</b>	(n=64)	
<b>Latrines doors don't have locks</b>	25	39
<b>Latrines don't have doors</b>	39	61
<b>Sufficiency of Latrines</b>		
They are sufficient for available pupils	59	42
They are not sufficient for available pupils	80	58
Material used for anal cleansing after defecation		
<b>None</b>	07	5.0
<b>Pieces of paper</b>	43	30.9
<b>Leaves</b>	40	28.8
<b>Water</b>	25	18.0
<b>Toilet paper</b>	24	17.3

The majority of pupils (96.4%) use the students' latrines to ease themselves.

When asked whether the latrines provide privacy to both boys and girls, more than half (54%) agreed. However, 46% of pupils indicated that the latrines don't provide privacy because they don't have doors (61%) and those that do have doors don't have locks (42%).

Concerning the sufficiency of latrines at schools, most respondents (58%) reported that they don't have sufficient latrines for the number of pupils that use them.

Regarding the material used for anal cleansing after defecation, (30.9%) said they use pieces of paper, (28.8%) use leaves while (5%) don't use anything. In addition, data obtained from observation checklists revealed that the schools do not have any arrangements for provision of materials for anal cleansing to pupils after defecation. In one of the schools, leftover leaves were found in some latrine stances, while others had faecal shading on the walls indicating that some pupils use their hands to cleanse their anal passage after defecation and rub them on the latrine walls.

#### 4.4.1 Latrine to Pupil Ratio

**Table 9: Showing Pupil-Latrine Ratio**

	Baitambogwe Primary School			Wabulungu Primary School		
	Boys	Girls	Total	Boys	Girls	Total
Total Number of pupils						
Number of Pupils	407	372	779	800	890	1690
Number of Latrines	05	04	09	08	06	14
Pupil to Latrine Ratio			Average			Average
	81.4	93	86.6	100	148.3	120.7

The table above reveals that with 779 pupils in Baitambogwe Primary School, the school has 9 toilets. Of these, 5 are used by 407 boys while 4 are used by 372 girls. In addition, the school has 1 latrine (stance) for every 81.4 boys and 1 latrine (stance) for every 93 girls with an average of 86.6 pupils per latrine.

In Wabulungu Primary School, the school has a total population of 1,690 with a total of 14 latrines. Of these, 8 latrines are used by 800 boys while 890 girls have access to 6 latrines. The latrine to pupil ratio is 1:100 among boys while for girls, it is 1:148.3. Though the Ministry of Education and Sports guidelines stipulate a ratio of 1:40 pupils in its guidelines for establishing, schools, Institutions in Uganda, both schools have ratios which are 2-3 times the recommended ratio. Ironically, the above two educational institutions are government-aided schools under the Universal Primary Education (USE) program.

Besides the high pupil to latrine ratio, latrines in Wabulungu Primary School either don't have doors or don't have doors that lock.,These conditions result in the lack of privacy reported by pupils. This is shown in the photographs below:



In addition, data obtained from observation checklists showed that in both schools, the latrines and urinals were not clean, some with visible garbage and faecal matter on the floor as detailed in the photographs below.

Furthermore, data from observation checklists revealed that pupils don't wash their hands after visiting a latrine and there is no provision of water/soap for children to wash their hands in both schools.



#### 4.4.2 Rubbish Disposal in and outside class

Table 10: Showing responses on rubbish disposal in class and school

Place of disposing Rubbish in class	Frequency (n=139)	Percentage (%)
<b>In my desk</b>	45	32.4
<b>In my bag</b>	05	3.6
<b>On the classroom floor</b>	89	64.0
Disposal of rubbish in school		
<b>Rubbish pit</b>	70	50.4
<b>Anywhere in the school compound</b>	69	49.6

Most respondents (64%) were disposing of rubbish on the classroom floor.

When asked where they dispose of rubbish outside the class, 50.4% said a rubbish pit although 49.6% revealed that they were disposing of rubbish anywhere in the school compound.

In addition, information obtained from the checklist showed that in both schools, there are sections near the latrines that are littered with rubbish, although not designated for rubbish disposal. Besides, some classes were littered with papers and covered with a lot of dust even before the end of the day, indicating that there are days when some classes are not swept on a daily basis.

Both schools have rubbish pits where pupils throw all rubbish from where it is burnt periodically.

#### 4.5 Hand Hygiene among Pupils



**Table 11: Practices related to hand hygiene among pupils at school a week prior to the survey**

<b>Hand washing after latrine visit</b>	<b>Frequency (n=139)</b>	<b>Percentage (%)</b>
<b>Hand washing with water and soap after visiting a latrine</b>		
Not at all	120	86.3
Sometimes	11	7.9
Most times	6	4.3
Every time	2	1.4
<b>Hand washing with water only after visiting a latrine</b>		
Not at all	60	43.2
Sometimes	40	28.7
Most times	21	15.1
Every time	7	5.0
<b>Hand washing before and after eating food</b>		
Not at all	137	98.6
Sometimes	02	1.4
<b>Hand washing with water only before eating</b>		
Not at all	123	88.5
Sometimes	14	10.1
Most times	02	1.4
<b>Hand washing with water and soap after eating food</b>		
Not at all	136	97.8
Sometimes	3	2.2

The majority of participants (86.3%) did not wash their hands with water and soap after visiting a latrine in the week preceding the survey. However, 28.7% respondents said they sometimes washed their hands with water only before visiting a latrine.

An overwhelming majority of pupils (98.6%) did not wash their hands with water and soap before eating food in the week preceding the survey, while 10.1% reported that they sometimes washed hands with water only before eating.

Nearly the same number of pupils (97.8%) did not wash their hands with water and soap after eating in the week preceding the survey.

#### **4.6 Ill health associated with poor sanitation and hygiene among pupils**

This section presents information on illnesses and conditions associated with poor sanitation and hygiene experienced by the surveyed population. The information is obtained from questionnaires administered to pupils and from a school register book where pupils that are given permission to go home when sick are recorded. The data is presented in form of frequency of the illnesses and the days missed due to the illnesses.

#### 4.6.1 Diarrhoea and Typhoid among pupils

Table 12: Showing frequency of stomach pain, diarrhoea and typhoid in the term

Ill-health	Number of times	Frequency (n=139)	Percentage (%)
<b>Stomach Pain<sup>4</sup> in the term<sup>5</sup></b>			
	None	89	64.0
	1 time	36	25.9
	2 times	03	2.2
	4 times	01	0.7
	5 times	01	0.7
<b>Diarrhoea<sup>6</sup></b>			
	None	78	56.1
	1 time	48	34.5
	2 times	8	5.8
	3 times	3	2.2
	4 times	1	0.7
	5 times	1	0.7
<b>Typhoid</b>			
	None	82	59.0
	1 time	35	25.2
	2 times	15	10.8
	3 times	04	2.9
	4 times	02	1.4
	7 times	01	0.7
<b>Data obtained from school register-Baitambogwe P/S</b>			
Total no. of pupils given permission in the term		117	
No. of pupils given permission due to experiencing diarrhoea, typhoid or stomach pain in the term		90	76.9
No. of pupils given permission due to other reasons		27	23.1

Most respondents (70.5%) reported that they did not experience stomach pain during the term. However, 50 pupils (representing 35.7%) experienced stomach ache within the term. Of these, 25.9% experienced it once, 2.2% twice, 0.7% 4 times and 0.7% 5 times. The mean number of times that respondents experienced stomach aches was 1.4 with a standard deviation of 0.7.

More than half (56.1%) of pupils did not experience diarrhoea during the term although 34.5% said they experienced it once, 5.8% experienced it twice, 2.2% 3 times, 0.7% had diarrhoea 4 and another 0.7% had it 5 times. Of the 61 pupils who suffered from diarrhoea, the average number of times was 1.6 with a standard deviation of 0.9.

Though most pupils (59%) did not experience typhoid in the term, 25.2% experienced it once during the term, 10.8% had it twice, (2.9%) suffered from it 3 times, 1.4% experienced it 4 times and 0.7% said they experienced typhoid 7 times during the term. Of the 57 pupils who suffered from typhoid in the term, the average number of times each pupil suffered from it was 1.6 with a standard deviation of 1.04.

Data obtained from a school register-Baitambogwe P/S revealed that out of 117 pupils who were given permission to go home during the term, 90 (76.9%) were due to issues related to diarrhoea, typhoid or stomach pain, while other issues caused the other 27 (23.1%) of absences. However, school administrators admitted that the number of pupils who miss school due to diarrhoea,

<sup>4</sup> Stomach pain was not related to diarrhoea or typhoid; it was experienced reported as a stand-alone condition.

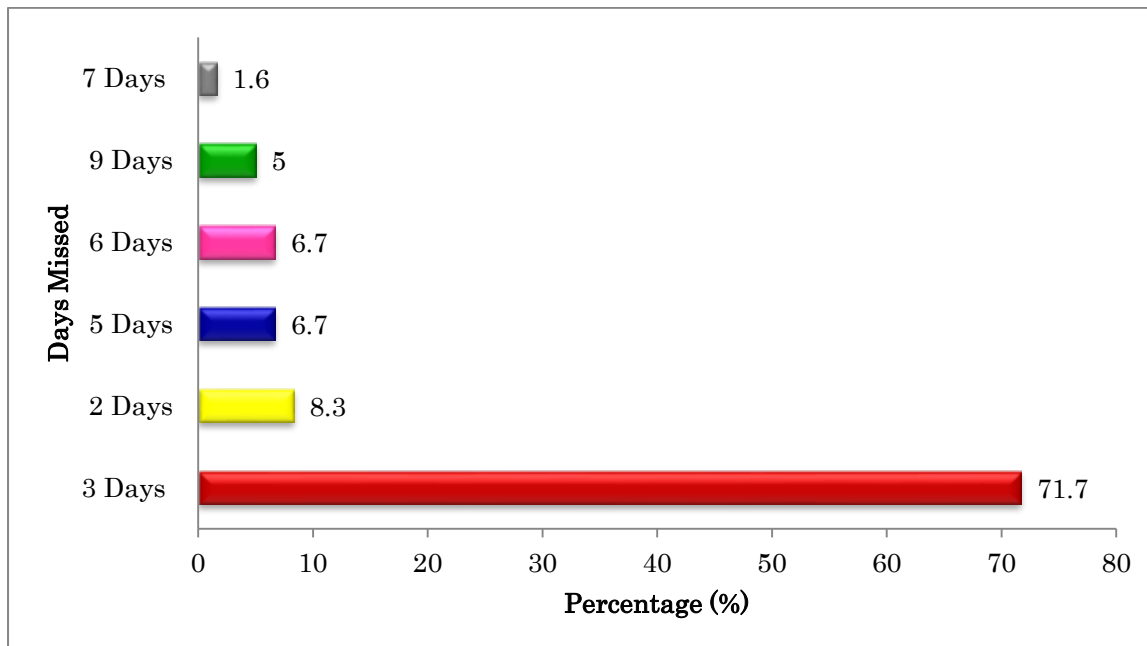
<sup>5</sup> The ill-health was related to the current term the survey was conducted

<sup>6</sup> Diarrhoea was defined as the passing of watery stool at least 3 times in a day.

typhoid and stomach ache are more than those recorded because some pupils leave school without seeking permission.

#### 4.6.2 Days Missed due to Diarrhoea

Figure 7: Days Missed due to diarrhoea (n=61)

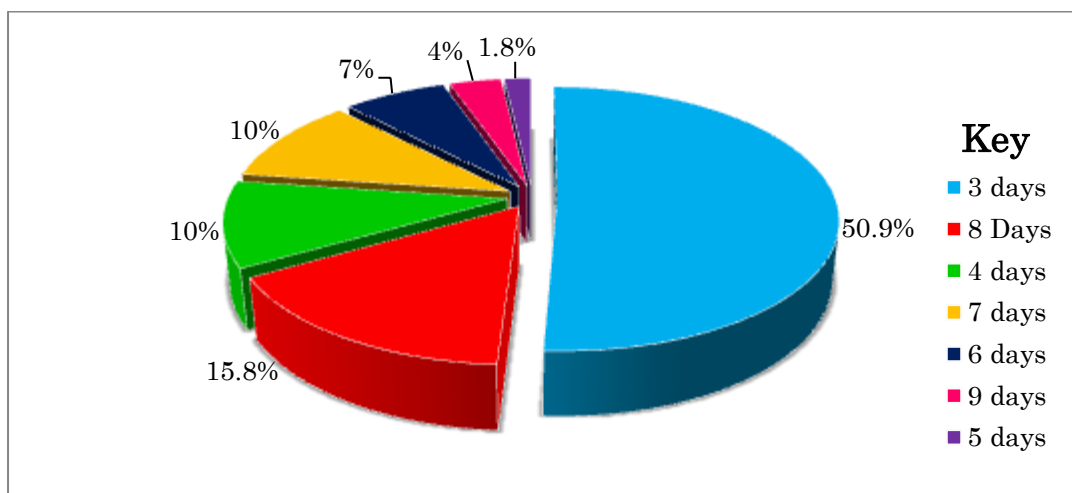


Data presented above reveals that less than three quarters of pupils (43, or 71.7%) reported missing 3 days due to diarrhoea, 5 pupils (8.3%) missed 2 days, 4 pupils (6.7%) missed 5 days, another 4 pupils (6.7%) missed 6 days and 3 pupils (5%) missed 9 days. One pupil (1.6%) missed 7 days.

The average number of days missed due to diarrhoea was 2.1 with a standard deviation of 1.7. This implies that out of the 139 pupils surveyed from Baitambogwe and Wabulungu Primary Schools, 60 of them (44.1% -- more than 4 out of every 10) missed approximately 2 days in the term due to diarrhoea alone.

### 4.6.3 Days lost due to Typhoid

Figure 8: Days Missed due to Typhoid (n=57)



Slightly over half of students absent due to typhoid (29 pupils, or 50.9%) reported missing 3 days of classes; 9 (15.8%) missed 8 days, 6 (10.5%) missed 4 days, another 6 missed 7 days, 4 (7%) missed 7 days, 2 (3.5%) missed 9 days and 1 pupil (1.8%) missed 5 days.

The mean number of days missed due to typhoid was 2.9 with a standard deviation of 2.7. Of the 139 pupils surveyed, 57 (41%, or 4 out of every 10 pupils) missed approximately 3 days in the term due to typhoid alone.

### 3.7 Data Obtained from School Administrators

This section presents qualitative data as obtained from 2 school administrators from Baitambogwe and Wabulungu Primary Schools. The data is presented in form of text formats (quotes) based on organized statements from the interview guide.

#### 1. Access to drinking water among pupils in the school

##### *Participant I*

“...we have drinking water in the school which is tapped water. But you know the dangers of tap water. Fine, we have access to a borehole, but it is not within the school location, it is across the road. You know the dangers of children crossing the road often; they can easily get road accidents. It can also easily affect their lesson attendance. Because the borehole is down the road and the borehole is not here.....”

##### *Participant II*

“...here we have a borehole although it is outside the school, but it serves as a source of safe water for the children. Of course, they don't boil it, they just drink, sometimes directly from the pipe.”

#### 2. Quality of drinking water

##### *Participant I*

“...when you look at the quality; .....since we have tapped water, obviously tapped water is not safe. Since this is a school which is a government aided school, that water would be boiled. But we cannot afford to boil it for the whole school. So on issues concerning the quality, the water is available but unsafe for the learners to drink.”

##### *Participant II*

“Of course the quality, it is from the borehole, they don't boil it and first of all, as you know children, some children drink without washing the hands, they just take without washing the hands, so we think water from the boreholes is somehow not 100% safe, but it is somehow safer than one from the wells. But as you know when it comes to the children, they can make the water dirty, as I have just said, sometimes they take it without washing their hands, then that means it is contaminated.”

### **3. Quantity of drinking water**

#### *Participant I*

“..... when we talk about quantity, they drink like 100 litres each day. Each student drinks enough water because we have it in abundance. It is in plenty.”

#### *Participant II*

“Of course they struggle, sometimes if it is lunchtime or break time, they are allowed to go outside, they just struggle. Survival for the fittest, if you are not strong enough, you are pushed away so that the strong ones take water..... and if the bell goes, you have not taken water, of course the children will run away, some without taking water, the water is not enough.”

### **4. Ill-health due to taking unsafe drinking water at school**

#### *Participant I*

“.....I presume so, because from time to time, we usually give permission to children suffering from diarrhoea, headache, so sometimes, we presume that it is from taking contaminated water. ....diarrhoea, and at times malaria, are the main diseases. Mosquitoes bite the children from the borehole, the stagnant water near the borehole.”

#### *Participant II*

“....they experience sickness due to taking unsafe water, especially typhoid. Majorly typhoid, that is one of the challenges we have due to taking unsafe water. But you never know, even cholera may come in, but at the moment when we take them for checkups, the medical personnel always realize they have typhoid.”

### **5. Number of pupils who fall sick daily due taking unsafe water in school**

#### *Participant I*

“We usually give permission to children suffering from such diseases, every day we give permission to 5-10 pupils...”

#### *Participant II*

“Sometimes three, sometimes four, sometimes two, it is not static, it keeps on changing.”

### **6. Days missed by pupils due to illnesses experienced after taking unsafe water at school**

#### *Participant II*

“....they miss school; obviously a sick child cannot attend school, sometimes three days, sometimes four, others a week, according to the gravity of the problem.”

### **7. Measures to improve on the Quality of drinking water at school**

#### *Participant I*

“.....because of being a government school, we are financially crippled. We have not come up with solution to improve on the quality of water taken by pupils.”

#### *Participant II*

We sat in the AGM (that is the Annual General Meeting) last year, we had thought of children contributing so that we can access piped water nearby, but our parents are handicapped, they deserved it, they are willing, but as it comes to contributing they are not doing it. None of them has brought any contribution towards water, we had resolved 3500/= for each student....but they have not brought.

### **8. Ways to Improve on Access to Quality drinking water at school**

#### *Participant I*

If we could get a way of getting more sources of water or a convenient source of water, especially tap water, it would serve us well.

### **9. Involvement of pupils in sanitation and hygiene at school**

#### *Participant I*

“Of course, cleaning around the water source, we do clean around the water source, basically that. The pit latrine is a usual routine. Both girls and boys do it. Sometimes, it is at random, sometimes it is by class, it depends on the duty master.”

#### *Participant II*

“....they really get involved. Because in this school we don't have casual labourers; the pupils are the ones who ensure that there is sanitation and hygiene in the school. Take for example, they ensure that our toilets are clean, they sweep the compound, they pick the rubbish.

Then we have a health parade, once in a week we have it where teachers check on their hair, fingernails, check on those who have not bathed, then we sometimes send those who have not bathed home. Sometimes, we wash them from here by their colleagues such that they don't come back to repeat the same problem.”

“.....we even have lessons in classes. We teach them life skills which talk about sanitation. We are equipping them with life skills to manage sanitation even when they finish school, they can practice it in their homes.

Now issues related to hygiene, that one is a bit broad, because it is not one way. We always bring parents to come in parents meetings, we tell them about hygiene of their children, sometimes you find that children have been having issues especially the girls, because even menstruation, when it comes, it is driven into hygiene because it can make this child to have problems or other bigger complications as a result of having poor hygiene. And I am so happy that Community Concerns Uganda and WASH program have already come to visit us and have already trained our girls on how to make reusable pads for themselves because it has been very expensive for us to buy for them. As a head teacher, sometimes we buy and keep in the office but we have got other partners in development such as Straight Talk, Young Talk, they have always come in.....to see how they can help us to ensure that the hygiene of our pupils is good.

## 10. Pupil to Latrine Ratio

### **Participant I**

“Wow ...stances for boys are about 6 and the boys are close to 800, in fact they are not even enough. The stances for girls are around 10, and the girls are also close to around 870-900 in the school, so when you tag, take for example each stance is almost for 100 pupils, which is still not enough. For example that for boys has already filled up, but we have not emptied it.....”

### **Participant II**

“The latrines are not enough, they are not, they are not, and we are really badly off. If you had time, I would show you how we have been writing letters to the district, to assist us to construct more pit latrines, but you know, things with the government take time....

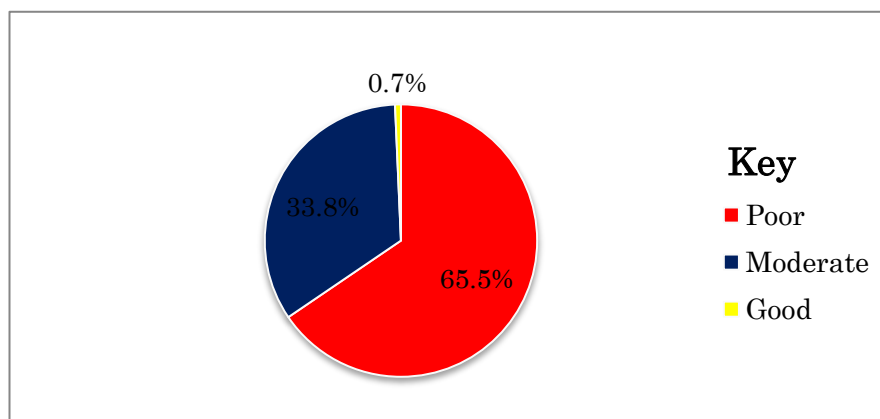
The girls only have 4 and the boys have only 5, more over this is a centre school, so many pupils come from all over and in that area we are badly off.”

## 4.8 Ratings of Measured Variables

### 4.8.1 Pupils ratings on knowledge of safe drinking water

Knowledge about safe drinking water was measured using a selected set of questions with a 2-5 point scale. The questions measured pupils’ understanding of safe drinking water, how it is prepared, its importance and diseases linked to taking unsafe drinking water. The scores to the questions were later summed to come up with a total that ranged between 1 and 17, 4 being the lowest point and 17 being the highest point. For interpretation, the scores were divided into sections characterizing the level of knowledge of pupils. These included Poor Knowledge (score of 4-7), Moderate Knowledge (score of 8-13) and Good Knowledge (score of 14-17).

**Figure 9: Knowledge rating of pupils about safe drinking Water (n=139)**



Most pupils rated poor for their knowledge of safe drinking water; only 0.7% were rated good.

This was irrespective of 90.6% of students reporting that they had been taught about sanitation and hygiene by their teachers. This was further confirmed from qualitative data obtained from 1 school administrator as shown in the quote “.....we even have lessons in classes. We teach them life skills which

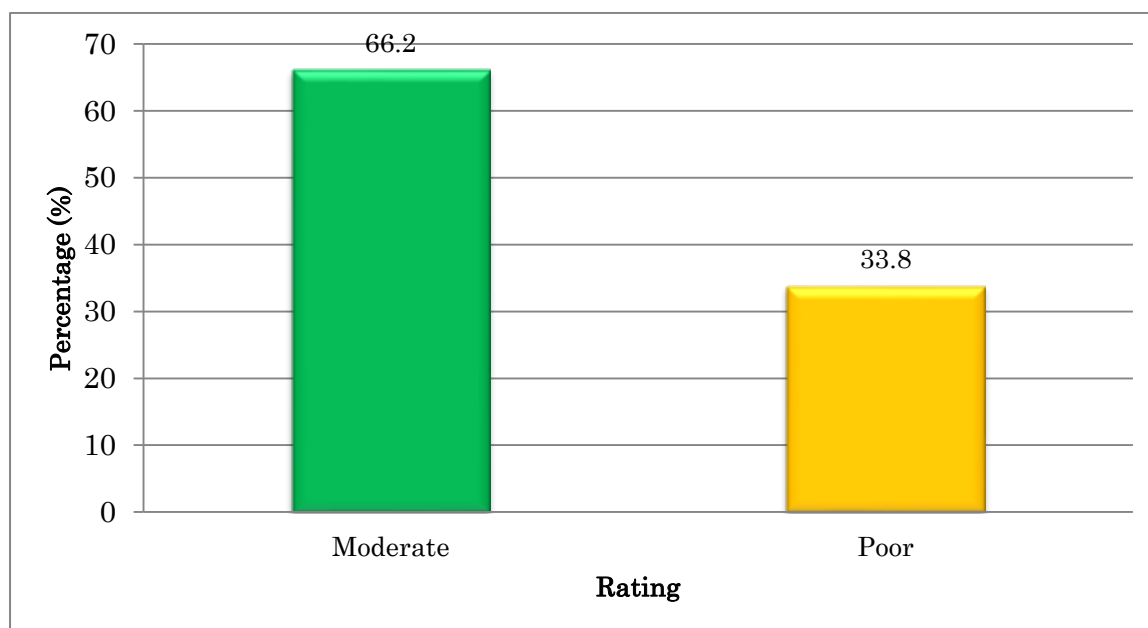
talk about sanitation. We are equipping them with life skills to manage sanitation even when they finish school, they can practice it in their homes.”

#### 4.8.2 Pupils’ ratings of Quality of drinking water at school

Water quality was measured using a selected set of questions on a 2-to-6-point scale. The questions measured the place of drawing drinking water, utensil used, where the utensil is kept and perceived quality of available drinking water. The scores to the questions were later summed to come up with a total that ranged between 1 and 24, 1 being the lowest point and 24 being the highest point.

For interpretation, the scores were divided into sections characterizing the quality of water taken at school as rated by pupils. These included Poor Water Quality (a score of 5 to 12), Moderate Water Quality (a score of 13 to 19) and Good Water Quality (a score of 20 to 24).

Figure 10: Water Quality Rating (n=139)



Most pupils (66.2%) rated the quality of drinking water at school as being of Moderate Quality, while 33.8% rated it of poor quality. According to key informants in both schools, pupils have access to poor quality of water as explained in the narrative: *Of course the quality, it is from the borehole, they don't boil it and first of all, as you know children, some children drink without washing the hands, they just take without washing the hands, so we think water from the boreholes is somehow not 100% safe, but it is somehow safer than one from the wells. But as you know when it comes to the children, they can make the water dirty, as I have just said, sometimes they take it without washing their hands, then that means it is contaminated.*”-Participant I

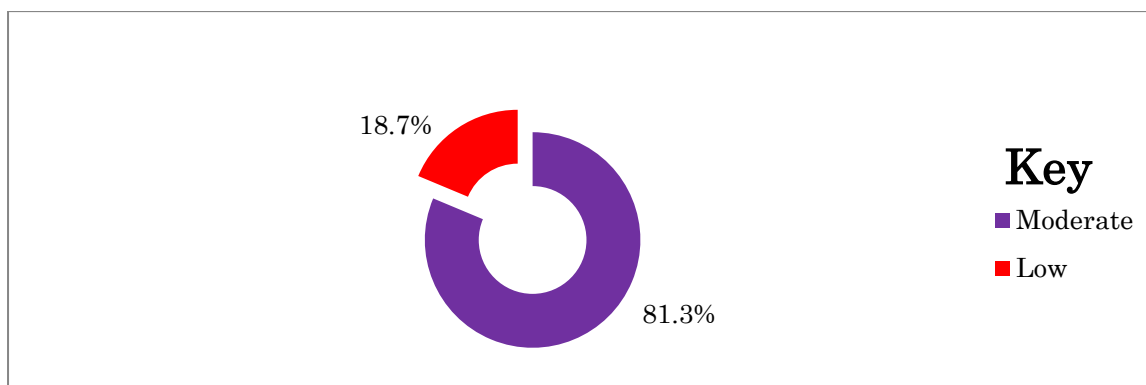
Participant II was more decisive when he stated that “.....when you look at the quality; .....since we have tapped water, obviously tapped water is not safe. Since this is a school which is a government aided school, that water would be boiled. But we cannot afford to boil it for the whole school. So on issues concerning the quality, the water is available but unsafe for the learners to drink.”

#### 4.8.3 Pupils rating of water Quantity accessed at school

Water quantity was measured using a selected set of questions on a 2-to-6-point scale. The questions measured quantity of water taken, sufficiency and accessibility of the water. The scores to the questions were later summed to come up with a total that ranged between 3 and 15, 3 being the lowest score and 15 being the highest score. For interpretation, the scores were divided into

sections categorizing the quantity of drinking water taken at school. These included Low Water Quantity (a score of 3 to 7), Moderate Water Quantity (a score of 8 to 12) and High Water Quantity (a score of 13 to 15).

**Figure 11: Rating of Water Quantity by Pupils (n=139)**



Most study participants (81.3%) stated the quantity of water they accessed at school is moderate while the minority (18.7%) reported accessing a low quantity of water. However, only one school administrator agreed that the quantity of water accessed by pupils at school for drinking is enough as shown in the narrative below: “..... when we talk about quantity, they drink like 100 litres each day. Each student drinks enough water because we have it in abundance. It is in plenty” (**Participant I**).

The second administrator indicated that they don’t have access to enough drinking water for pupils as explained: “Of course they struggle, sometimes if it is lunchtime or break time, they are allowed to go outside, they just struggle. Survival for the fittest, if you are not strong enough, you are pushed away so that the strong ones take water..... and if the bell goes, you have not taken water, of course the children will run away, some without taking water, the water is not enough.” (**Participant II**)

#### 4.8.4 Pupils rating of Accessibility to Latrines

Accessibility to latrines was measured using a selected set of questions on a 4 point scale. The questions measured accessibility to latrines including disabled pupils, provision of privacy, sufficiency. The scores to the questions were later summed to come up with a total that ranged from 6 to 20, 6 being the lowest point and 20 being the highest point. For interpretation, the scores were divided into sections characterizing the pupils’ ratings of accessibility to latrines. These included Poor Accessibility (a score of 6 to 10), Moderate Accessibility (a score of 11 to 15) and Good Accessibility (a score of 16 to 20).

**Table 13: Pupils’ ratings of accessibility to latrines**

Accessibility Ratings	Frequency (n=139)	Percentage (%)
Poor	139	100

All pupils (100%) rated accessibility to latrines as poor. The findings confirm qualitative data obtained from school administrators which indicated that the school latrines were not enough for the available pupils as narrated below:

“The latrines are not enough, they are not, they are not, and we are really badly off. If you had time, I would show you how we have been writing letters to the district, to assist us to construct more pit latrines, but you know, things with the government take time....The girls only have 4 and the boys have only 5, moreover this is a centre school, so many pupils come from all over and in that area we are badly off” (**Participant II**)

“Wow ...stances for boys are about 6 and the boys are close to 800, in fact they are not even enough. The stances for girls are around 10, and the girls are also close to around 870-900 in the school, so when you tag, take for example each stance is

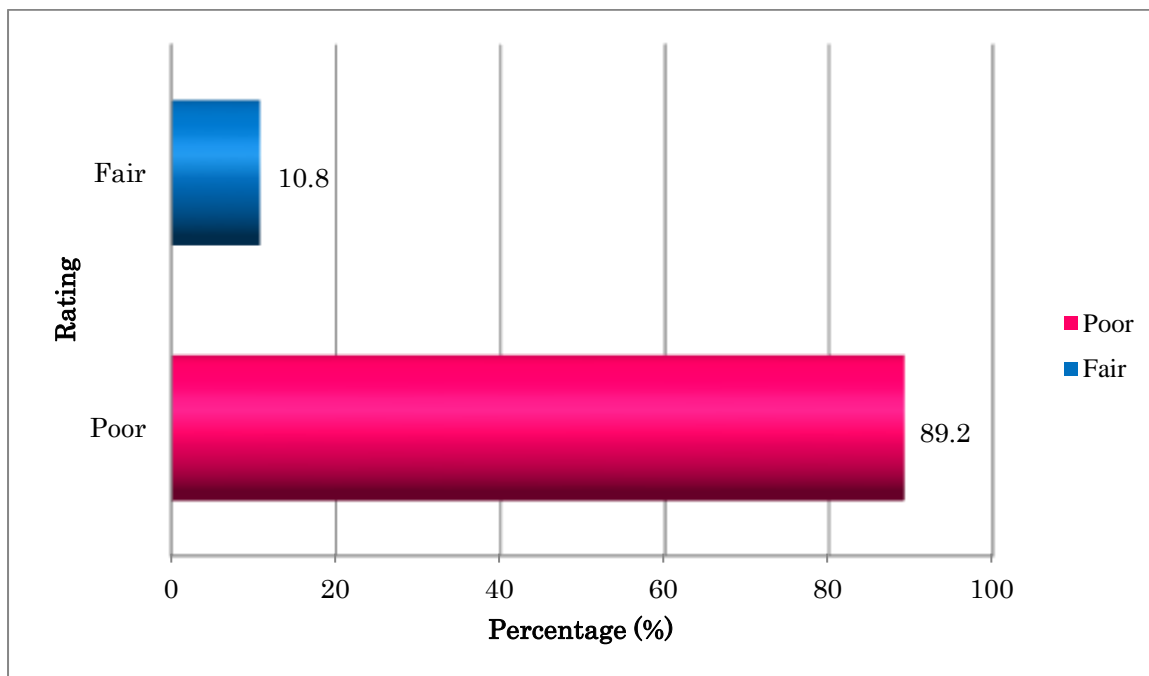
almost for 100 pupils, which is still not enough. For example that for boys has already filled up, but we have not emptied it.....”

Narrations from participant II did not tally with data obtained from checklist which found that in the respective school, there was a total of 14 latrines stances, 8 for boys and 6 for girls.

#### 4.8.5 Rating of Hand Hygiene Practices among Pupils

Hand hygiene was measured using a selected set of questions on a 4 point scale. The questions measured pupils’ hand washing practices before and after eating food, after visiting a latrine and the agents used in hand washing. The scores to the questions were later summed to come up with a total that ranged from 5 to 20, 5 being the lowest score and 20 being the highest score. For interpretation, the scores were divided into sections characterizing the rating of pupils’ practices towards hand hygiene. These included Poor Hand Hygiene Practice (a score of 5 to 10), Fair Hand Hygiene Practice (a score of 11 to 15) and Good Hand Hygiene Practice (a score of 16 to 20).

**Figure 12: Rating of Hand Hygiene Practices among Pupils (n=139)**



Information presented the figure above shows that 89.2% of pupils were rated poor in hand hygiene practices while 10.8% rated fair.

## 5.0 Discussion and Recommendations

This section explores discussions of survey findings in relation to related literature. It also presents recommendations that can be undertaken by different stakeholders to improve on existing sanitation facilities and hygiene practices in the two schools.

### 5.1 .1 Knowledge about Safe drinking Water

The majority of pupils (65.5%) had poor knowledge of safe drinking water. Many of them (58.9%) considered unsafe water as safe for drinking. In addition, more than half (50.4%) did not know ways of preparing safe water for drinking. Although nearly three quarters (72.7%) knew the importance of taking safe drinking water, a considerable number (27.3%) did not know. Similarly, although 63% of pupils were aware that diseases may be contracted by taking unsafe water, a significant number (36%) did not know.

However, most pupils (90.6%) had been taught about sanitation and hygiene, implying that the instruction was inadequate and / or ineffective. In addition, information from the observation checklist found no teaching material (books or manuals) that teachers or school administrators can use to teach life skills related to sanitation and hygiene to pupils. Certainly, one factor contributing to the pupils' poor knowledge of safe drinking water may be related to inadequate and ineffective health education on sanitation and hygiene.

### 5.1.2 Water Quality and Quantity

While 66.2% of pupils rated the quality of drinking water at both schools as being of moderate quality, a significant number (33.8%) rated it as being of poor quality. An overwhelming majority (95%) of pupils drew water for drinking from boreholes using mainly cups (84.1%) or their hands (9.1%). A closer analysis found that 63.3% did not have a specific cup for drawing water, and those that did were keeping them in desks in class (21.7%). This indicates that even if the boreholes had 'safe drinking water, the utensils used for drinking it would likely contaminate the water as explained by participant II:

*...as you know children, some drink without washing the hands....., so we think water from the boreholes is somehow not 100% safe, but it is somehow safer than one from the wells. But as you know when it comes to the children, they can make the water dirty, as I have just said, sometimes they take it without washing their hands, then that means it is contaminated.*

In addition, more than half of pupils (58%) considered the quality of drinking water at school to be poor because the water contains metal particles (48.1%), dirty particles (22.2%) and has germs (16%). Furthermore, 6.2% said pupils push dirty things inside the borehole where they draw water while another 7.4% revealed that it contains small stones and has a bad smell (3.7% respectively).

Though participant I from Wabulungu P/S revealed that the school has enough drinking water for pupils as indicated in the quote “...when we talk about quantity, they drink like 100 litres each day. Each student drinks enough water because we have it in abundance. It is in plenty”, in Baitambogwe P/S, it was the opposite as participant II mentioned that pupils struggle to get drinking water, as in the narrative “of course they struggle, sometimes if it is lunchtime or break time, they are allowed to go outside, they just struggle. Survival for the fittest, if you are not strong enough, you are pushed away so that the strong ones take water..... and if the bell goes, you have not taken water, of course the children will run away, some without taking water, the water is not enough.”

Further revelations from data obtained from pupils found that most of them (65.5%) were drinking 1 to 2 cups of water per day, which is equal to ½ to 1 liter each day. It is not surprising that 54 pupils (38.8%) reported that they experience headaches during class or after classes, something related to inadequate water intake which leads to dehydration.

### **5.1.3 Waste Disposal and Management**

All pupils (100%) were using latrines to dispose faecal matter. However, all respondents reported that the number of available latrines was insufficient for the number of pupils using them. This was affirmed by records from the checklist which showed that in Baitambogwe, the school has 1 latrine (stance) for every 81.4 boys and 1 latrine (stance) for every 93 girls with an average of 86.6 pupils per latrine. In Wabulungu P/S, the situation was worse as one latrine (stance) was being shared amongst 100 boys while 1 stance was shared amongst 148.3 girls with an average of 120.7 pupils per stance. The pupil-latrines ratios are 2 and 3 times higher than the recommended 1:40 pupils by the Ministry of Education and Sports.

In addition, a considerable number of pupils (28.8%) were using leaves for anal cleansing after defecation while 5% were not using anything. It is no wonder that some latrines had leaves littered around, while others had faecal shading on the walls indicating that some pupils used their hands to cleanse their anal passage after defecation and rubbed them on the latrine walls. This may be due to lack of agreed arrangement by the school administrators to provide materials to pupils for anal cleansing. Related to the results, a study by McMahon, Caruso, Obure, Okumu & Rheingans, (2011) conducted in rural Nyanza Province, Kenya found that 97% of schools were not providing materials for anal cleansing. It was also found that one of the most commonly mentioned materials for anal cleansing was leaves from nearby trees.

Regarding the disposal of rubbish in class, slightly less than two thirds (64%) reported to disposing of rubbish on the classroom floor. When asked where they disposed of rubbish outside the class, (50.4%) said the rubbish pit, although a significant portion (49.6%) stated they were disposing of rubbish anywhere in the school compound.

### **5.1.4 Hand Hygiene among Pupils**

Most pupils (89.2%) had poor hand hygiene practices. Nearly 9 in 10 (86.3%) were not washing their hands with water and soap after visiting a latrine and nearly all respondents (98.6%) did not wash their hands with water and soap before eating food in the week preceding the survey. This could be due to lack of water and soap at vital points near the latrines and inadequate knowledge of pupils about the importance of hand washing after visiting a latrine and before and after eating food. As a result, pupils were eating food contaminated with faecal matter due to poor hand hygiene after visiting the latrine. They were also transmitting disease-causing organisms to one another through handshakes and the use of shared cups for taking water. The findings confirm what was reported by UNICEF (2014) in a study that revealed that very few people in Uganda wash their hands with soap at critical moments (for example, after using the latrine).

### **5.1.5 Diseases associated with poor sanitation among pupils**

With more than half (56.1%) of pupils not experiencing diarrhoea, one would assume that the situation at the schools is good. However, a total of 61 pupils (43.9% -- more than 4 out of every 10 students) reported experiencing diarrhoea at least once during the term, on average 1.6 times per student. This may be related to poor hand hygiene as discussed above, drinking contaminated water and / or eating food with contaminated hands.

Most of these pupils (91.7%) missed 3 days or more due to diarrhoea during the term, with the average number of days missed at 2.1.

A total of 57 pupils (41%) suffered from typhoid during the term. Of these, 35 (61.4%) experienced it once in the term, 15 (26.3%) suffered from it twice, 4 pupils (7%) experienced it 3 times, 2 pupils (3.5%) experienced it 4 times while 1 pupil (1.7%) reported suffering from typhoid 7 times in the term. This suggests that although pupils are experiencing frequent ill health due to poor

sanitation at school, little or nothing is being done to avoid typhoid or related diseases as pupils experienced frequent recurrences of the same disease during the school term.

Regarding the days lost due to typhoid, all pupils who suffered from it lost 3 to 9 days. The mean number of days missed due to typhoid was 2.9. Overall, 57 pupils (41%, or about 4 out of every 10) missed approximately 3 days last term due to typhoid alone.

## 5.2 Conclusion

The survey findings revealed that majority of pupils had inadequate knowledge of safe drinking water despite having received health education in sanitation and hygiene from teachers. In addition, the available water for drinking was not only inadequate but contaminated with objects like metals and stones due to rusty borehole pipes.

In both schools, pupils lacked clean utensils to draw water for drinking thus using old used bottles, dirty cups and hands, which further contaminated the drinking water. This calls for efforts to increase accessibility to adequate safe drinking water free from particles like metals and provision of clean cups in places where pupils can easily access them.

Although pupils were disposing of faecal matter in latrines, there were not enough for both boys and girls. There was lack of appropriate material for anal cleansing, leading pupils to use their hands or leaves, which are not only ineffective but contributes to the spread of disease and localized irritation, swelling and itching of the anal passage and buttocks.

Due to poor hand hygienic practices after visiting a latrine and before and after eating food, a significant number of pupils suffered from diarrhoea, typhoid and experienced stomach aches last term. They lost on average 2-3 days each time they experienced diarrhoea and typhoid respectively, thus affecting their academic performance and predisposing them to death from the above diseases. Moreover, frequent recurrences of these illnesses among the same children speak to a general failure to respond with appropriate education and personalized assistance to help at-risk children avoid future incidents of these life-threatening diseases.

There is need for both Baitambogwe and Wabulungu P/S administration to work with CCUG and other concerned stakeholders to construct more latrines to mitigate the unacceptably high pupil-to-latrine ratio, provide effective materials for anal cleansing and to ensure the availability of tippy taps with soap and water near latrines to facilitate hand hygiene after use.

The school should also work with concerned stakeholders like CCUG and other non-government organizations to construct/establish water sources in the schools, safely prepare water for drinking and make it available to pupils in classes where they can easily access it.

In addition, CCUG should organize and conduct health education sessions paired with life skills classes on safe drinking water, hand hygiene, faecal and rubbish disposal so as to improve pupils' knowledge and practices related to sanitation and hygiene.

## REFERENCES

- McMahon S., Caruso, B.A., Obure, A., Okumu, F. & Rheingans R.D. (2011). Anal Cleansing practices and faecal contamination: a preliminary investigation of behaviours and conditions in schools in rural Nyanza Province, Kenya. *Tropical Medicine and International Health* Vol 16, no 12, pp1536-1540, December. Accessed on 15/10/2017
- UNICEF, (2015). Advancing WASH in Schools Monitoring.
- UNICEF, (2014). Clean hands save lives. [http://www.unicef.org/wcaro/overview\\_4553.html](http://www.unicef.org/wcaro/overview_4553.html)
- United Nations, (2010). General Assembly Adopts Resolution recognizing access to clean water, sanitation as a human right, recorded vote of 122 in favour, None against, 41 abstentions.
- WHO, (2017). 2.1 billion people lack safe drinking water at home, more than twice as many lack sanitation. <http://www.who.int>