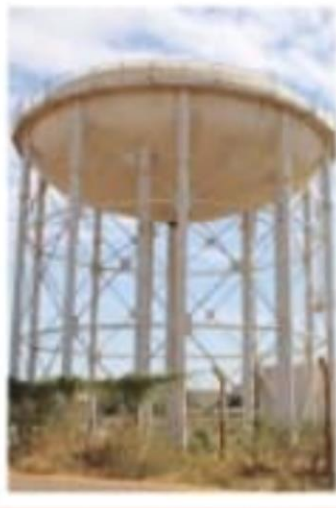




BASELINE REPORT

OF WASH SERVICES FOR 6 LGAs
OF SOKOTO STATE



*The Project For Improved Sustainability of
Integrated Water Sanitation and Hygiene Service (I- WASH)*

This document was prepared for the United States Agency for International Development, Cooperative Agreement Number #72062021FA00006: The Project for Improved Sustainability of Integrated WASH Services (I-WASH).

FEBRUARY, 2022.



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FOREWORD

Access to safe drinking water and sanitation is regarded as a basic human need that every society must strive to achieve. Inadequate access to sanitation, water and hygiene facilities has been linked to water-borne diseases and associated socio-economic challenges.

This report presents a detailed assessment of the existing conditions of WASH services in Sokoto State. It is informed by the statistics from the WASH-NORM II (2019) report, which reveals that only about 38% of the average population in Sokoto State has access to a basic water supply. In fact, Sokoto State has the third-highest percentage of people who have access to unimproved water supplies in Nigeria, trailing only Zamfara and Sokoto States. Furthermore, this baseline survey by Green Habitat Initiative reflects a further deprivation of access to basic water supply, even though the survey was limited to only 6 out of the 23 Local Government Areas (LGAs) of the State.

With support from multiple donor agencies, the State Government has rehabilitated and constructed some significant water systems to improve access to basic water supply. Nevertheless, there is still more work to be done to achieve the sustainable development goal in water, sanitation and hygiene in Sokoto State.

The baseline survey of WASH infrastructure conducted by the Green Habitat Initiative (GHI) is a welcome development for Sokoto State. I believe that the findings of this baseline survey will serve its main purpose of drawing the attention of all the relevant stakeholders towards the critical need of addressing the WASH challenges in Sokoto State. Furthermore, it will serve as a reference point for planning and management of WASH facilities in Sokoto State.



Mal. Muhammad Bala
(Director of water, Sokoto State Ministry of Water Resources).

PREFACE

Sequel to the GHI cooperative agreement with USAID to implement the Project for Improved Sustainability of Integrated Water, Sanitation and Hygiene (I-WASH) Services in Kebbi and Sokoto States, a baseline survey of WASH services in these states became necessary. This is in order to identify the existing condition of WASH services that will be used in developing the list of most deprived Local Government Areas (LGAs) and subsequently where I-WASH will intervene.

The WASH NORM II report prepared by the Federal Ministry of Water Resources (FMWR) in collaboration with UNICEF and the National Bureau of Statistics (NBS) has provided a brief overview of the baseline condition of WASH services in Sokoto State. However, the purported baseline data in this report were limited by the sparse population sampling size used during data collection, and as a result, a further re-evaluation of the baseline survey in Sokoto State was deemed necessary.

Consequently, this project work was carried out to provide a baseline assessment of WASH services in 6 LGAs of Sokoto State. A detailed overview of the existing conditions of WASH services in selected communities, schools, health centers, and public spaces in these LGAs have been provided in this report.

One of the interesting findings of this baseline survey is the presence of several completed but non-functional water pumps around the State. Despite the State and other donors' efforts in increasing access, most of the pumps break down after a while.

Accordingly, one of I-WASH's interests is advancing the convenience of learning environments. About 58.9% of Schools in the study area do not have access to toilet facilities. A situation that drives a very high existing reality, is absenteeism, especially for the girl child. These findings, of course, will serve as the basis for the eventual selection of communities and institutions that will be prioritized for the I-WASH intervention.

It is our proposal that the Sokoto State Government utilizes this comprehensive and unprecedented baseline, by building on it to capture the situation in other LGAs and use it to monitor their progress in achieving SDG 6 targets. All in order to reduce the spread of waterborne diseases and promote economic prosperity in Sokoto State and its citizens.

In conclusion, I would like to express my profound appreciation to the former Honorable Commissioner of Water Resources, Hon. Shuaibu Gwanda Gobir and the staff of his ministry, for their support toward completing this survey. Similarly, I wish to also acknowledge the facilitation and relentless support provided by the Hon. Commissioner of Budget and Economic Planning Dr. Shehu Kakale. Finally, my gratitude goes

to our everyday partner, in and off the field, the Executive Secretary of Sokoto State Rural Water Supply and Sanitation Agency, Engr. Sidi Abbas.

A handwritten signature in blue ink, appearing to read 'Sadiq', with a stylized flourish at the end.

Engr. Sadiq Abubakar Gulma, PMP
I-WASH Project Director
President/CEO, Green Habitat Initiative

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ACKNOWLEDGEMENT

This report is based on data from a WASH baseline survey conducted in six (6) LGAs across Sokoto State. Green Habitat Initiative conducted the survey with funding from the US Agency for International Development (USAID) under the Project for Improved Sustainability of Integrated WASH Services.

At various stages of the survey, the Sokoto State Ministries of Water Resources (MWR), Budget and Economic Planning, Rural Water Supply and Sanitation Agency (RUWASSA) LGA Water, Sanitation and Hygiene (WASH) Unit, and other relevant Ministries, Agencies, and relevant Departments (MDAs) contributed to the baseline survey design, implementation, and reporting.

ACRONYMS

ADM	Administration
COVID-19	Corona-Virus Diseases 2019
CHEWs	Community Health Extension Workers
CHOs	Community Health Officers
EA	Enumeration Area
EC	Electrical Conductivity
FGN	Federal Government of Nigeria
GAVI	Global Alliance for Vaccines and Immunization
GHI	Green Habitat Initiative
GPS	Global Positioning System
HC	Healthcare center
HF	Health Facility
HH	House-Hold
HOD	Head of Department
ICP	Infection control and prevention
IEC	Information, education, and communication
IHP	Integrated Health Program
I-WASH	Integrated Water, Sanitation and Hygiene
JMP	Joint Monitoring Program
LAM	Local Area Mechanic
LGAs	Local Government Areas
MDGs	Millenniums Development Goals
MHM	Menstrual Hygiene Management
MTN	Mobile Telephone Network
NGO	Non-Governmental Organization
NISH	National Integrated Survey of Households
NSDWQ	Nigerian Standard for Drinking-water Quality

O&M	Operation and Maintenance
OD	Open Defecation
ODK	Open Development Kit
PTA	Parent Teachers Association
pH	Redox Potential
PHCDA	Primary Health Care Development Agencies
PHCs	Primary Health Centers
RI	Routine Immunization
RUWASSA	Rural Water Supply and Sanitation
SDGs	Sustainable Development Goals
TDS	Total Dissolved Solids
UNICEF	United Nations Children's Fund
USAID	United State Agency International Deployment
VIP	Ventilated Improved Pit Latrines
WASH	Water, Sanitation and Hygiene
WASHCOMS	Water Supply, Sanitation and Hygiene Committee
WASHNORM	Water Sanitation and Hygiene Normal Outing Routine Mapping
WASHIMS	Water Sanitation Hygiene Information Management System
WDC	Ward Development Committee
WHO	World Health Organization

PROJECT OVERVIEW/SUMMARY

Program Name	The Project for Improved Sustainability of Integrated WASH Services (I-WASH).
Activity Start Date and End Date	February 15 th , 2021 – February 16 th , 2023
Name of Implementing Partner	Green Habitat Initiative (GHI)
Contract Number	FAA-#72062021FA00006
Key State Partners	<ul style="list-style-type: none"> a) Federal Ministry of Water Resources. b) Kebbi & Sokoto Ministry of Water Resources. c) Kebbi & Sokoto Ministry of Budget and Economic Planning d) Kebbi & Sokoto Rural Water Supply and Sanitation Agency (RUWASSA). e) Kebbi & Sokoto Ministry of Environment f) Relevant NGOs, CBOs and CSOs in the States. g) Kebbi & Sokoto Council of Chiefs h) Borehole spare parts retailers and LAMs.
Geographic Coverage	Kebbi and Sokoto States

EXECUTIVE SUMMARY

Green Habitat Initiative (GHI) entered into a cooperative agreement with United States Agency for International Development (USAID) to implement The Project for Improved Sustainability of Integrated WASH Services (I-WASH) in Kebbi and Sokoto States. The project's primary goal is to reduce waterborne diseases and associated socioeconomic challenges through an integrated, participatory, and innovative approach that focuses on improving reliable and inclusive access to WASH services in health centers, schools, and unserved/underserved communities within Kebbi and the Sokoto States.

This report presents the baseline survey of WASH services that was conducted in six Local Government Areas (LGAs) of Sokoto State with each LGA having ten (10) wards. The baseline survey provides current and detailed information about the status of water supply, sanitation, and hygiene services in communities, schools, health centers, and public spaces.

For each LGA, a total of 15 households were sampled in each ward. In addition, two schools and two health centers were sampled per ward. Standard survey instruments were deployed to collect relevant data on demographics, WASH services, and facilities in households, healthcare centers, schools, and public spaces.

Table 1: Summary of WASH services accessibility in HHs (Source: WASH Baseline Survey in 6 LGAs, 2022)

LGAs	HHs with Access to basic water supply (%)	HHs With Access to Basic sanitation Facility (%)	HHs with access to Basic Hygiene facility (%)
Binji	39.6	17.6	16.3
Bodinga	33.7	15	3.2
Kware	27.8	6.5	1.1
Silame	27.2	7.3	2.6
Wamakko	33.9	4.5	24.9
Yabo	31.4	0.9	0.7
Average	32.5	9.6	7.5

Findings from the survey show that 32.5% of Households (HHs) have access to basic drinking water, 9.6% have access to basic sanitation services and only 7.5% have access to basic hygiene services across the study area. HHs in Binji (39.6%), Bodinga (33.7%), and Wamakko (33.9%) LGAs have the most access to basic water supply across the study area. HHs in Binji (17.6%) and Bodinga (15%) have the most access to basic sanitation facilities while HHs in Binji (16.3%) and Wamakko (24.9%) have the most access to basic hygiene facilities.

Table 2: Summary of WASH services accessibility in Schools and Health-centers (Source: WASH Baseline Survey in 6 LGAs, 2022)

Schools	LGAs	Access to Basic Water facility (%)	Access to Basic Sanitation facility (%)	Access to Basic Hygiene facility (%)	Health-Centers	Access to Basic Water facility (%)	Access to Basic Sanitation facility (%)	Access to Basic Hygiene facility (%)
	Binji	33.3	44.64	22.4		24	61.6	47.6
	Bodinga	20.0	28.52	16.6		4	41.2	29.1
	Kware	11.3	33.6	5.5		9	56.3	81.8
	Silame	50.3	38.88	2.8		11	50.4	24.8
	Wamakko	25.4	22.23	11		5	60	40
	Yabo	39.4	53	5.2		3	89.3	23.5
	Average	29.9	36.81	10.58		9.33	59.79	41.14

As shown in table 2, for the schools surveyed, over 29% have access to basic drinking water facilities, 37% have access to basic sanitation facilities and 11% have access to basic hygiene facilities. For Health-centers across the study area, 9.3% of the HCs were found to have access to basic drinking water facilities, 60 % have access to basic sanitation facilities and 41.1% have access to hygiene facilities.

According to the WASHNORM II 2019 report, the national average of access to basic water supply stood at 56% and Sokoto State average stood at 38%. Access to basic sanitation stood at 44% across the nation and 41% had access in Sokoto State. As for hygiene, 15% of the population had access to basic hygiene services across the nation while 34% had access to basic hygiene services in Sokoto State.

Table 3: Summary of WASH services accessibility (Source: WASHNORM II 2019)

Domain	Access to basic water supply (%)	Access to Basic sanitation Facility (%)	Access to Basic Hygiene facility (%)
National Average (WASHNORM II 2019)	56	44	15
Sokoto Average (WASHNORM II 2019)	38	41	34
Sokoto (6 LGAs) Average (I-WASH BASELINE SURVEY 2022)	32.5	9.6	7.5

I. INTRODUCTION

Safe and reliable Water, Sanitation, and Hygiene (WASH) services are a global requirement and necessity for human life. It is a necessary component of primary health care and a vital component of human development and poverty eradication. Inadequate WASH has been linked to substantial health and socioeconomic implications, including low nutritional status, child growth, and school performance. When considering the new water and sanitation targets set out in the Sustainable Development Goals (SDGs), which aim for a higher standard of safely managed water and sanitation, service coverage is much lower. Lack of access to WASH can cost as much as 7% of GDP, not to mention the social and environmental effects.

In addition, clean water, safe sanitation, and good hygiene are critical for preventing and controlling infectious diseases. Yet in many countries including Nigeria, poor water, sanitation, and hygiene (WASH) conditions in health facilities expose pregnant women and newborns to illness and infection, discourage families from seeking lifesaving care, and force health workers to deliver services in unsafe and unpleasant working environments.

The study aims to develop a rigorous initial data set that will serve as a baseline for evaluating the impact of the I-WASH project over time.

I.1 Background of the I-WASH project

The Project for Improved Sustainability of Integrated WASH Services (I-WASH) project is a 2-year project funded by the United States Agency for International Development (USAID) and implemented by Green Habitat Initiative (GHI) entered through a cooperative agreement to implement the project in Nigeria, targeting mainly Kebbi and Sokoto States. The project's primary goal is to reduce waterborne diseases and associated socioeconomic challenges through an integrated, participatory, and innovative approach that focuses on improving reliable and inclusive access to WASH services in health centers, schools, and unserved/underserved communities within Kebbi and the Sokoto States.

The project was informed by data from WASH-NORM II (2019) report which indicates that only 38% of the average population in Sokoto State has access to basic water supply. 60.4% of the population in Sokoto accesses unimproved water supply as their main source of drinking water. Similarly, only 18.5% of the population in Sokoto State use safely managed sanitation services. In addition, 40.8% of its population have access to basic sanitation services, while 32.2% have access to basic hygiene services. Across all WASH indices, Sokoto State ranks well below the national average.

Region-wise, schools in the northwest have the least access to wash services (12%) compared to other geopolitical zones. Lack of access to basic sanitary facilities is one of the reasons why female absenteeism at school increases. Overall, Nigeria has the world’s highest number of out-of-school children and most of them are found in our target area. It is also reported that only 41.7% of the health centers have WASH facilities. 11.5% and 18.8% have only water facilities and sanitary facilities only. A whopping 28% of them have no single WASH facility. An estimated 4 out of 10 schools in our target region do not have any WASH facility. About 6.2% have a water facility and only 13.7% have a latrine.

Water scarcity in the region is exacerbated by climate change and other natural disasters such as drought and flooding. These disasters and inadequate access to WASH services contribute to the outbreak of waterborne diseases, economic losses, and worsening learning, living, and working conditions in health centers, schools, and communities.

1.2 Definition of Key WASH terms

Figure 1: Definition of key WASH terms according to WHO JMP services ladder

Water Supply	Sanitation	Hygiene
Safely managed Water is available from an improved source located within premises. It is free from faecal and priority chemical	Safely managed Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite	Basic Availability of a handwashing facility with soap and water at home
Basic Water is available from an improved source located within 30 minutes for a roundtrip.	Basic Use of improved facilities which are not shared with other households	Limited Availability of a handwashing facility lacking soap and/or water at home
Limited An improved water source is available, but collection time exceeds 30 minutes for a roundtrip.	Limited Use of improved facilities shared between two or more households	No facility No handwashing facility on premises
Unimproved Drinking water from an unprotected dug well or unprotected spring	Unimproved Use of pit latrines without a slab or platform, hanging latrines or bucket latrines	
Surface water Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal	Open defecation Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste	

Source: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP)

I.3 Objectives of the study

The overall objective of this baseline survey was to undertake a comprehensive assessment on critical WASH services in communities, Schools, and Health-centers across six (6) target LGAs of Sokoto State; Binji, Bodinga, Silame, Kware, Wamakko and Yabo.

The survey has the following specific objectives:

- I. To establish the baseline conditions of accessibility to WASH services in communities, schools and health centers within the target locations.
- II. To compute baseline figures against which an end-line survey will be used to measure the achievement of the I-WASH project.
- III. To measure the level of sustainability culture of WASH infrastructures across the target communities.
- IV. To ascertain the prevalence of water-borne diseases across the target locations.

2. METHODOLOGY

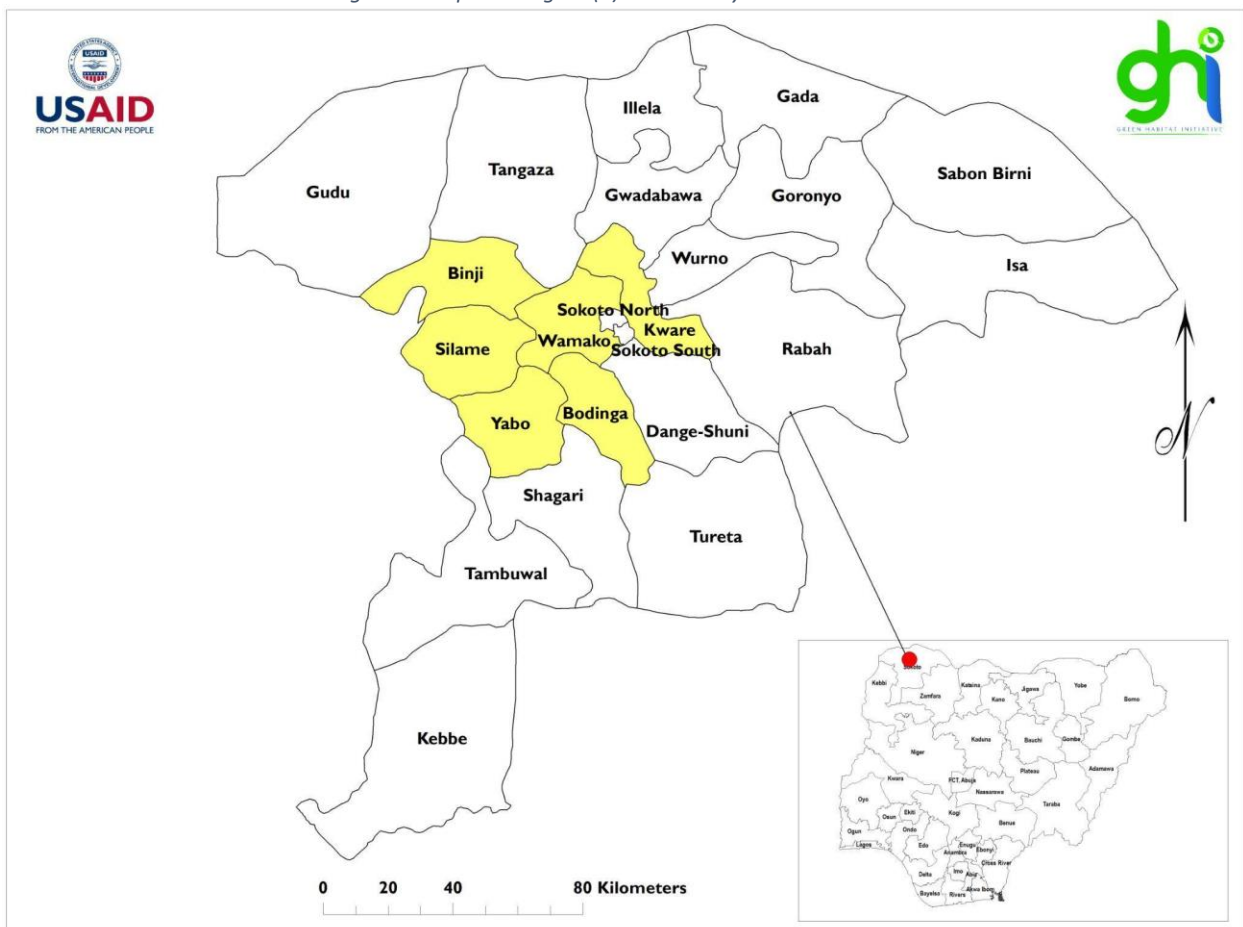
This section describes the methodology used for data collection.

2.1 Sampling Methodology

Data were collected from February 2022 through March 2022 simultaneously in six (6) LGAs of Sokoto State. Data were drawn from Binji, Bodinga, Silame, Kware, Wamakko, and Yabo LGAs with each LGA having 10 wards. A sample of 15 households accounting for an average of 0.5% of households in each ward was used. In addition, two (2) schools and two (2) health centers per ward were sampled subjectively across all the wards of the aforementioned LGAs.

A total of 1118 interviews were conducted, 900 in households, 112 in schools and 106 in HCs. The study population were Heads of Households or adult members (18+) of households for HHs, In-charge and/or second In-charge of HCs and Principals/headmasters and/or their assistants for schools.

Figure 2: Map showing Six (6) LGAs surveyed in Sokoto State



To determine the sample size, the Cochran sample size formula was used for the calculation.

$$\text{Cochran sample size formula} = n_0 = \frac{Z^2pq}{e^2}$$

where, $Z^2 \rightarrow Z - \text{score} = 1.96$ at 95% confidence interval,

$p \rightarrow \text{Standard deviation} = 0.5$ at maximum variability,

$$q = 1 - P \text{ and}$$

$e = \text{precision rate (margin of error)}$.

$$\text{sample size} = n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

where, $n_0 = \text{Initial Sample size}$

$N = \text{Population size}$

Accordingly, critical assumptions were made for the sample size design that included a 95% confidence level with an 8% margin of error, 902 sampling units (households) were determined as being representative enough for the baseline survey considering the survey area. A purposive sampling method was used to sample two (2) schools and two (2) health-centers per ward across the six (6) target LGAs with each LGA having ten (10) wards. Thus, making it a total of 120 schools as well as 120 health-centers as the survey target.

2.2 Baseline Survey Process

Before the implementation of field activities, I-WASH staff notified all stakeholders that the research was going to be conducted in the State and sought secondary data from all the relevant stakeholders to enable it to undertake the desktop analysis. A desk review was employed for the survey to determine the most underserved LGAs in terms of WASH services where a detailed baseline study will be conducted. It involved reviews of project information and important project documents, relevant past reports, and important secondary data that were made available and others that were accessible online. The result from the desk review was largely influenced by security as a criterion, only eight (8) out of the 23 LGAs were safe to conduct the baseline study amongst which are two urban LGAs. Because the project is focusing on rural WASH services, the two urban LGAs were excluded from the Baseline study.

After the desk review, a total of six (6) LGAs were selected for the baseline survey, and 19 field data collectors were employed for the data collection exercise. Before field data collection, all the field teams (data collectors) were trained on the basics of the baseline survey and were extensively exposed to the questionnaires for this baseline survey. This was followed by field pretesting exercises to familiarize the enumerators with the eventual fieldwork. Most importantly, during the training, the instruments were unanimously translated to the local language of the study area to ensure that enumerators were very well

acquainted with how to administer the instruments to respondents who largely only understand the local language (Hausa).

2.3 Data Collection

In the field, the Enumerators took full charge of the administration of the questionnaires and the eventual product of data collection. The supervisors guided and supported the enumerators and were there to help resolve minor field difficulties. Data collection was conducted in all the ten (10) wards in each of the selected six (6) LGAs, the exercise lasted for seven days with each enumerator administering an average of 59 questionnaires.

2.4 Data Collection Tool(s)

Survey questionnaires were developed consisting of several questions to capture data on demographics, WASH services status, sustainability, and prevalence of water-borne diseases amongst other relevant parameters. Three distinct questionnaires were developed for Households, Schools, and Health-centers respectively. The instruments were deployed onto the Kobo collect server, each enumerator was equipped with a smart mobile phone wherein the kobo toolbox was installed and configured for the baseline survey.

2.5 Administration of Survey Instruments

The Enumerators administered the instruments in Households, Schools, and Health-centers. In Households, the enumerators randomly sampled households within each ward of the selected LGAs, and the instruments were administered to the Head of Household, in his/her absence, the spouse or any other adult is interviewed, where none of the aforementioned are available, the household is replaced. In Schools, the principals and/or headmasters/mistresses were interviewed and their deputies were interviewed in their absence while medical personnel in charge or their second-in-charge were interviewed in the health centers. The household interview averagely lasted for 30 minutes in each household while the school and the health-centers interview lasted for an average of 45 minutes per questionnaire.

2.6 Data Management and Quality Control

The use of the Kobo toolbox ensured near real-time data monitoring to ensure data quality and consistency, data collected from the field was submitted daily and the M & E team checked and validated the data daily. Where necessary, feedback was sent to respective enumerators and ensured that the errors were promptly collected. The stated mechanism ensured minimal data collection and entry errors.

2.7 Data Processing and Analysis

The data were downloaded in excel format from the Kobo cloud storage and analyzed using Microsoft Excel. The analyzed data were cross-checked for consistency and presented in the form of tables, graphs, charts, and figures where appropriate. For ease of understanding, important sections and/or elements of the analyzed data were explained in brief narratives.

To properly inform the study's needs, data analysis took several steps. We looked at the socio-demographic features of households and the variables of interest were also analyzed according to their relevance to understanding the situation of access to drinking water, sanitation, and hygiene facilities in the study groups.

2.8 Ethical Considerations

During pre-data collection training, ethical principles were thoroughly described and addressed with the data collection team. It included a suitable introduction of the data collector, an explanation of the aim of the baseline survey, how the information would be used, the participant's voluntary engagement, and the opportunity to leave/refuse participation at any time without penalty. All of this was done to gain each participant's informed consent before moving further with data collection. During the field data collection, the survey team met with local chiefs/leaders of each locality/village to introduce themselves and obtain their approval to participate in the baseline survey.

The survey teams followed cultural norms and customs in every engagement and/or meeting with local leaders and participants. Because the survey used household questionnaires, the survey team made sure that each household member interviewed chose a comfortable location and that family norms were followed. Finally, the data collectors thanked the respondents for their time, willingness, and effort in providing data for the baseline survey after the questions/discussion.

2.9 Survey Limitations and Challenges

This survey did not happen without limitations. The following were both the expected and experienced limitations during the baseline survey. Firstly, the general security of the State: as stated earlier, during the desk review, most of the LGAs were not outlined for the survey due to security threats, and even in the selected LGAs, caution was applied during the exercise to ensure the safety of the enumerators. Thus, interview periods were restricted to noon hours. Secondly, cultural perceptions regarding men interviewing females alone and skepticism to ask sensitive questions may have affected the quality of the interview and data collected, but this was largely checked by ensuring more females were recruited as enumerators during the exercise.

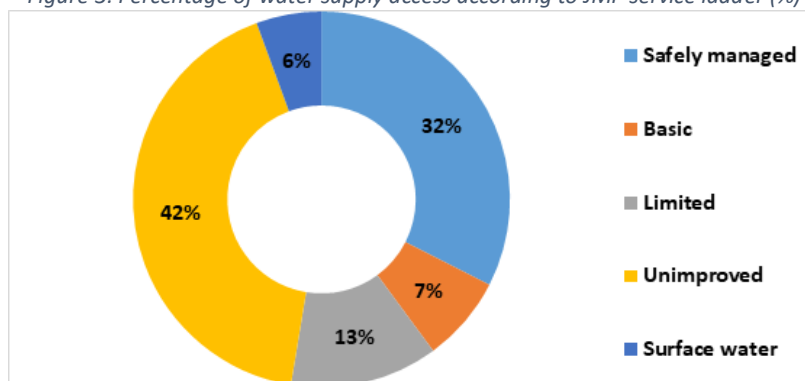
3. FINDINGS

The findings are given according to the studied LGAs. This section highlights the primary findings of accessibility to WASH services in Communities, Schools, and Health Centers, as well as demographic data of respondents and study regions from the baseline survey.

3.1 Status of WASH services in Households (HHs)

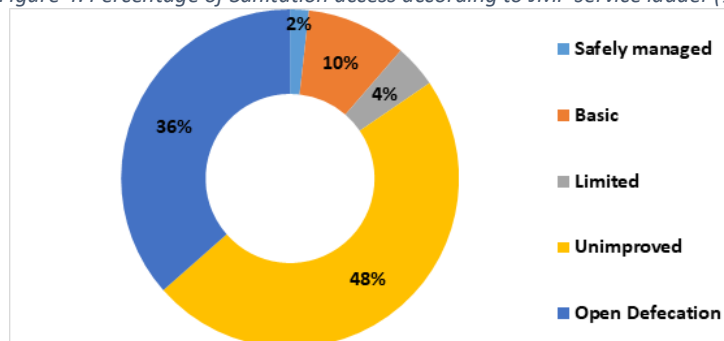
In terms of water supply, groundwater is the principal source of drinking water in all six LGAs. Tube wells, motorized boreholes, open drilled wells, and other methods are commonly used to capture it. Across the 6 LGAs, the proportion of families that source their drinking water from unimproved sources is relatively high. Overall, 42% of HHs get their water from unimproved sources, with Kware LGA having the worst situation (57.3 %).

Figure 3: Percentage of water supply access according to JMP service ladder (%)



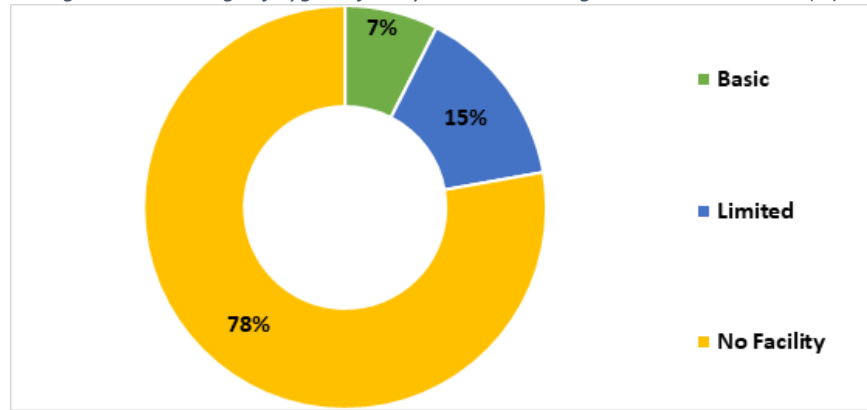
In terms of sanitation, just 9.6% of HHs in the six LGAs have access to basic sanitation services. Basic sanitation services were most accessible in Binji (17.6%) and Bodinga (15%), while basic sanitation services were least accessible in Yabo LGA. Across board, open defecation is the most common coping method.

Figure 4: Percentage of Sanitation access according to JMP service ladder (%)



Only 7.5 % of HHs in the six LGAs have access to basic hygiene facilities, 14.7 % have limited access to hygiene facilities, and an alarming 77.8 % do not have hygiene facilities. With 24.9 % and 16.3 % access to basic hygiene facilities, respectively, Wamakko and Binji had the most access, while Yabo (0.7 %) and Kware (1.1 %) had the least.

Figure 5: Percentage of hygiene facility access according to JMP service ladder (%)



3.1.1 Summary of Findings in HHs

Across the all six (6) LGAs, it was observed that access to basic water supply stood at 32.5%, basic sanitation services stood at 9.6% and access to basic hygiene facilities stood at 7.5%.

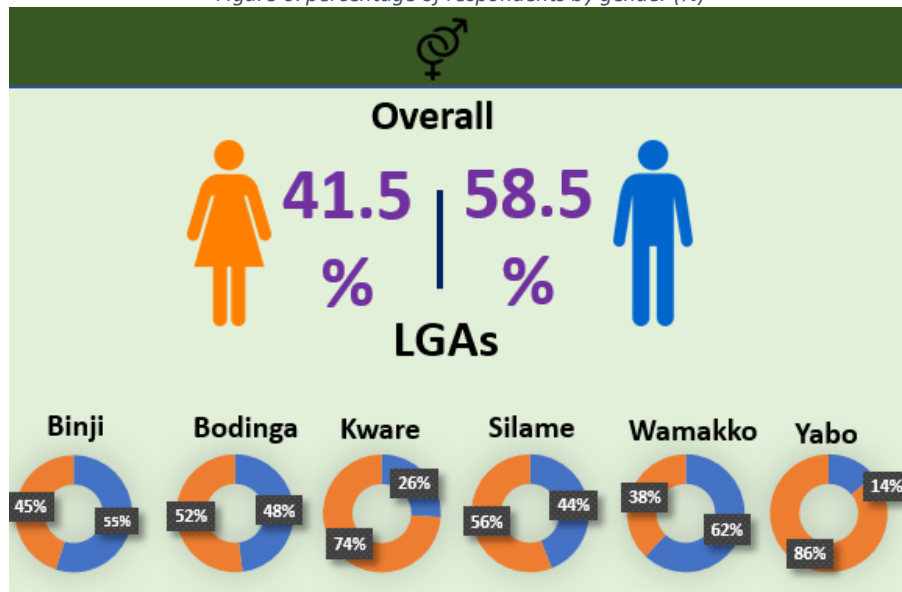
3.1.2 Demographics and Socio-Economic Characteristics

Some of the respondents' socio-demographic attributes include: gender, status (i.e., head of household), number of people in a household, mobile network coverage, occupation, and educational attainment. The objective is to present a profile of the respondents' socioeconomic attributes in the study area.

3.1.2.1. Gender

As shown in the figure 6 below, Yabo and Kware have the highest percentage of male respondents with 86.4% and 73.9% respectively while Wamakko and Binji have the highest percentage of female respondents with 61.8% and 55.1% respectively.

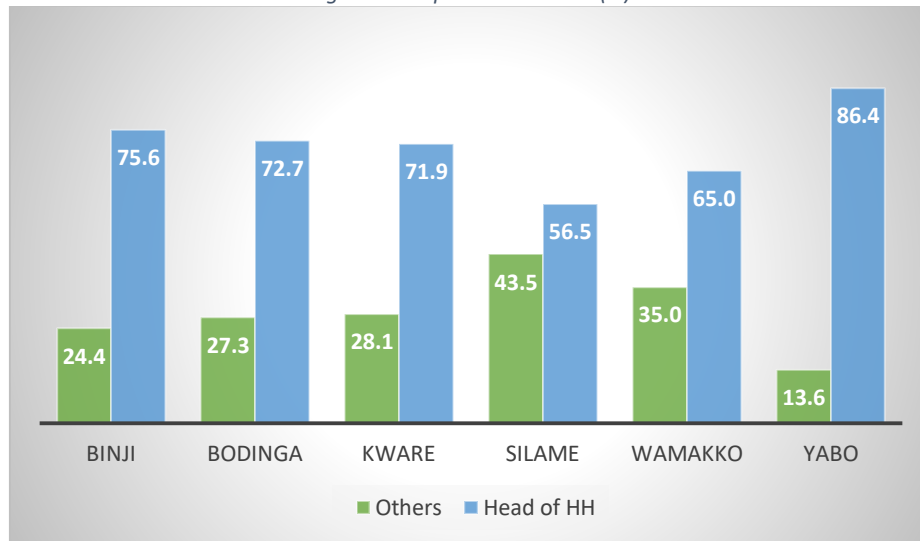
Figure 6: percentage of respondents by gender (%)



3.1.2.2. Status of respondents

Most respondents from this survey were heads of Households with Silame and Wamakko LGAs recording the most percentages of respondents that were other than the Heads of Households. This ensured that adequate and accurate information was gathered during the exercise.

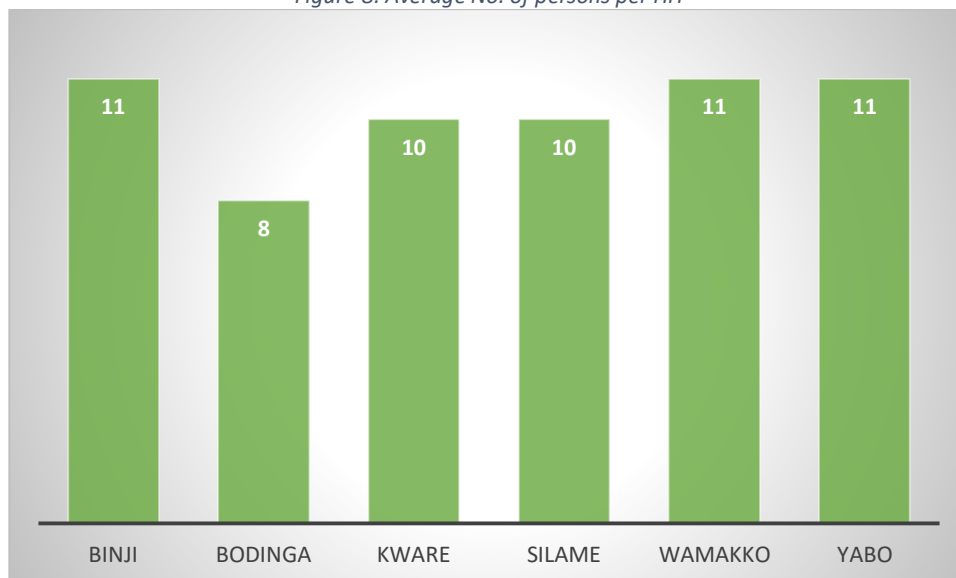
Figure 7: Respondent's status (%)



3.1.2.3. Number of people per HH

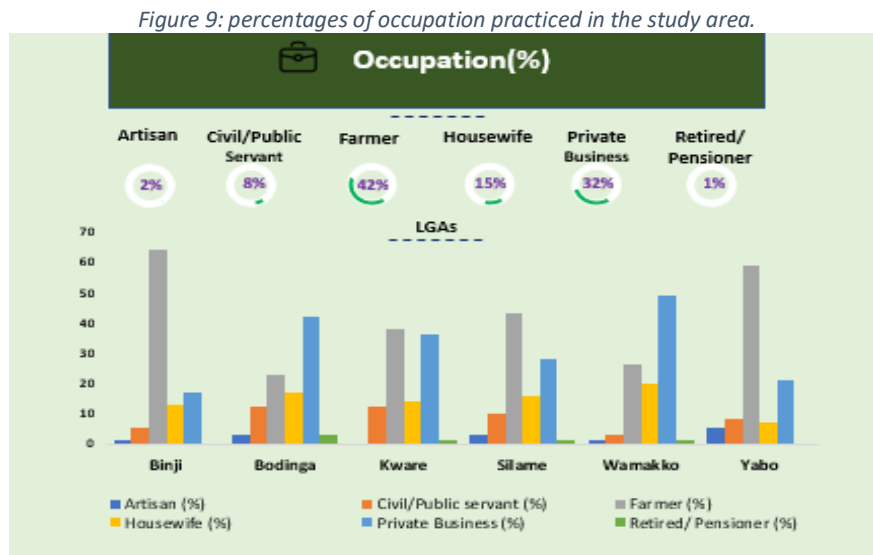
The overall average of persons per HH in the studied area is 11, from the findings of the survey Bodinga has the least average persons (8) per HH.

Figure 8: Average No. of persons per HH



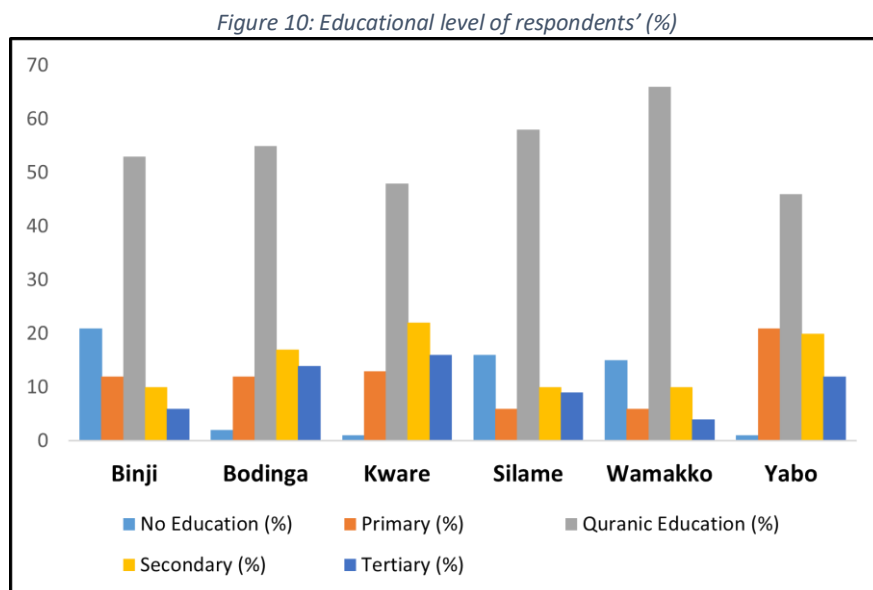
3.1.2.4. Occupation

The baseline survey shows that majority of the population across the study area are predominantly farmers and private business owners as shown in figure 9 below:



3.1.2.5. Education Level

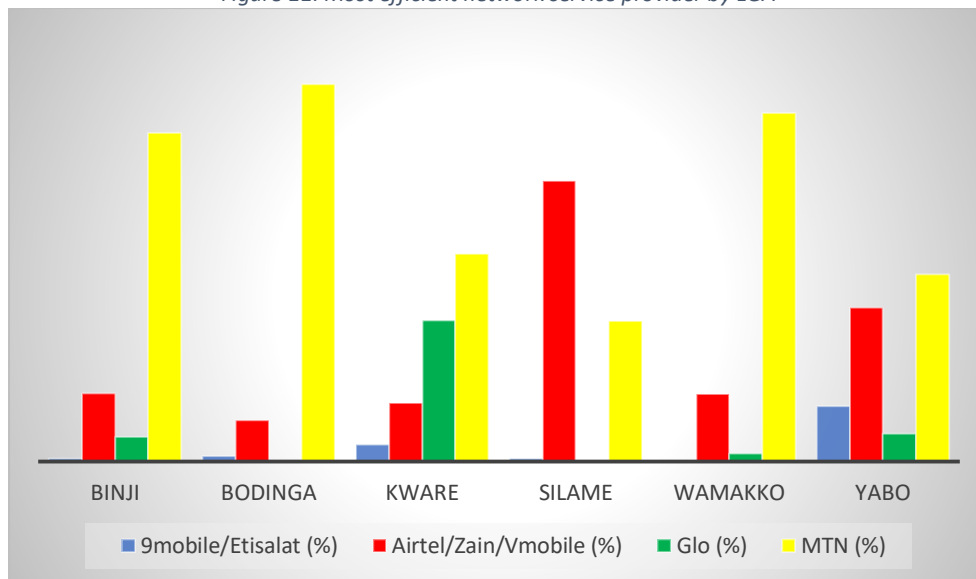
Here, it is seen that Qur’anic education is mostly the highest educational level attained by the populace of the study area followed by secondary education and primary education.



3.1.2.6. Most efficient mobile network service

This shows the most efficient mobile network service in each of the studied LGAs and from the results as shown in figure 11, it is seen that MTN is the most efficient network across all the LGAs with the exception of Silame LGA where Airtel is shown to be most efficient.

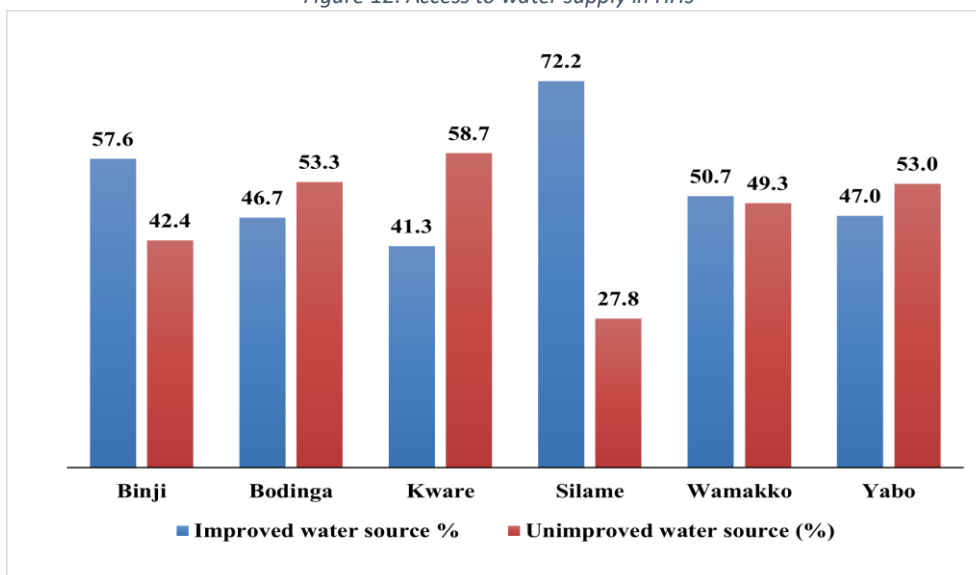
Figure 11: Most efficient network service provider by LGA



3.1.3. Status of Water supply in HHs

Findings from the survey revealed that 52.6% of households use improved water sources (Pipe-borne water, Protected dug well/spring, Tube Well/borehole) as their main source of drinking water while 41.8% use unimproved water sources (Unprotected dug well/spring) and 5.6% use surface water (Rivers, dams etc.) as their main source of drinking water. It is also seen that 86% of HHs get water within or less than 30 minutes round-trip while 14% spend greater than thirty minutes in round trip to access drinking water. Overall, limited water supply is at 7.4%, 12.7% of HHs have access to safely managed water supply while 47.4% use unimproved water source and surface water as major sources of drinking water.

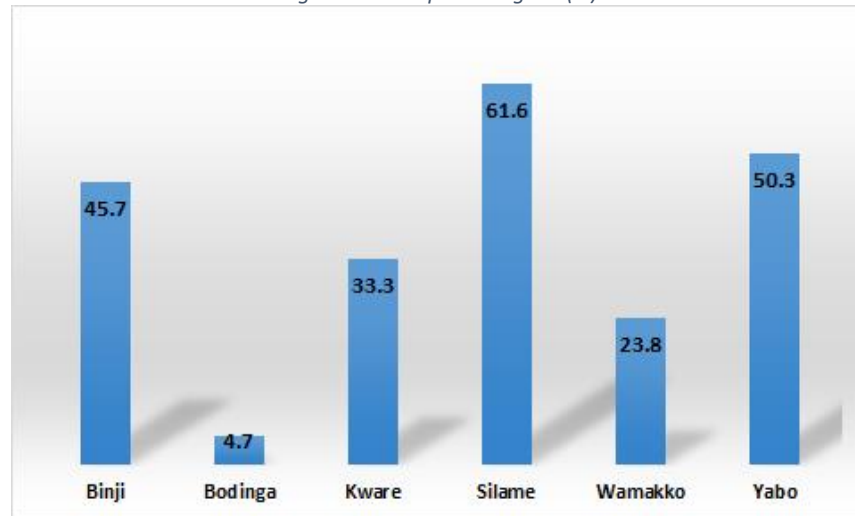
Figure 12: Access to water supply in HHs



3.1.3 Status of Sanitation Services in HHs

The overall result of the survey shows that 36.7% of households across the study area have no Sanitation facilities indicating they practice open defecation (OD). The result further showed that Bodinga LGA has the highest number of households with access to Sanitation facilities where over 95% of the households have access to Sanitation facilities while in Silame and Yabo LGAs, 61.6% and 50.3% of HHs have no access to Sanitation facilities.

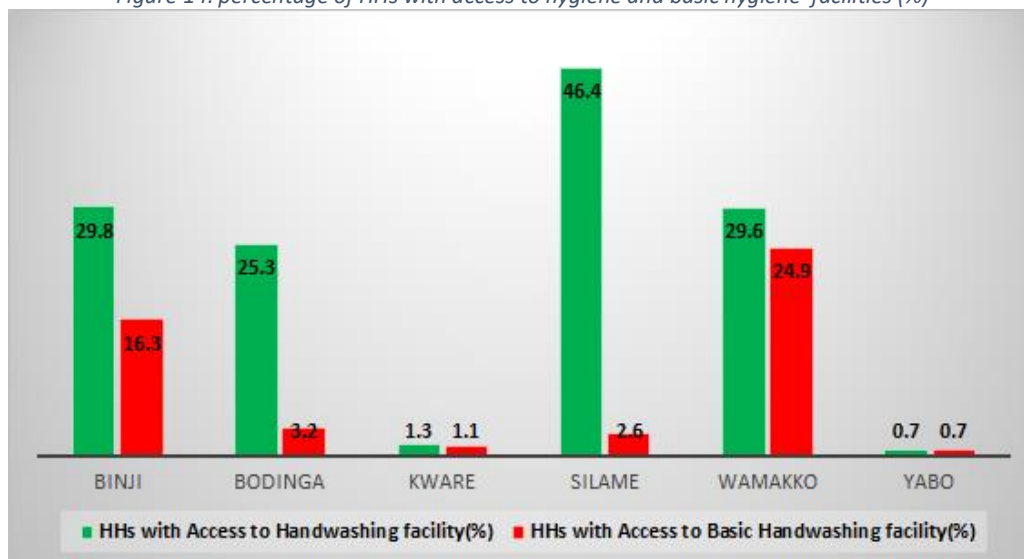
Figure 13: HHs practicing OD (%)



3.1.4 Status of Hygiene Services in HHs

As revealed from the survey, most of the households lack access to hygiene facilities with only 22.2% of households having access to a hand-washing station and at that only 7.5% of the households (have soap and water at the hand-washing stations) had access to basic hygiene facilities.

Figure 14: percentage of HHs with access to hygiene and basic hygiene facilities (%)



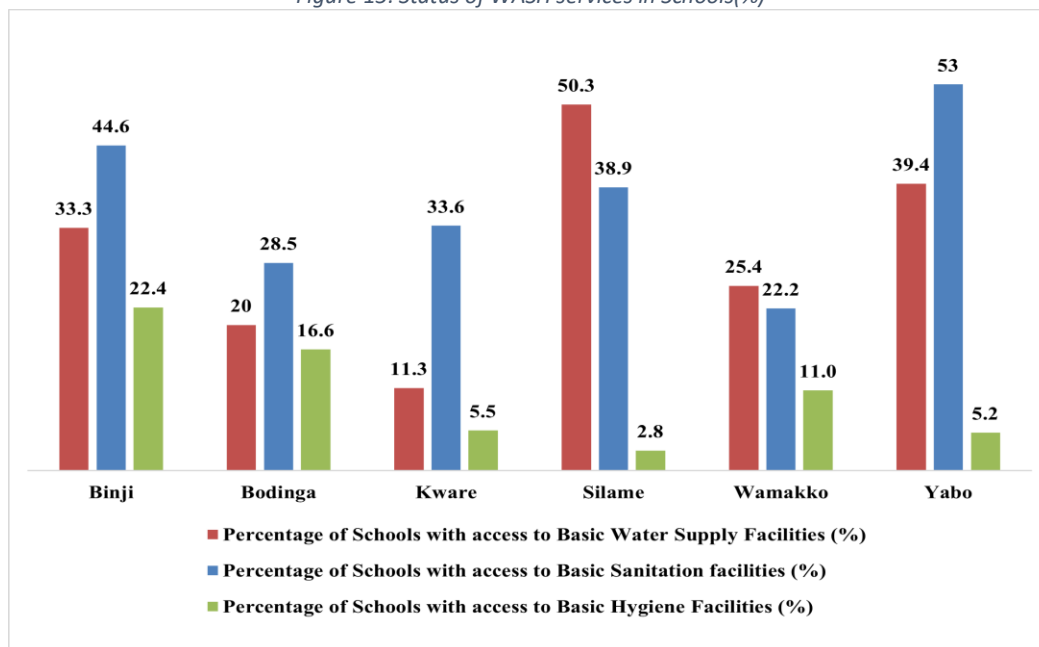
3.2 Status of WASH services in Schools

As shown in Figure 15, approximately 30 % of the schools across the six (6) LGAs on average have access to basic water supply. Silame LGA presents the highest number of schools (50.3%) with basic water supply facilities. On the other hand, Kware (11.3%), Wamakko (25.4%), Yabo (39.4%), Bodinga (20%) and Binji (33.3%) LGAs present the schools with the least access to basic water supply sources.

In addition, 38 % of schools on average across the LGAs were found to have access to basic sanitation facilities. Yabo and Binji LGAs had 53% and 44.6%, respectively of schools with access to basic sanitation facilities, which were the highest for the LGAs. On the contrary, Silame (38.9%) , Wamakko (22.2%), Kware (33.6%), Bodinga (28.5%) LGAs had the least number of schools with access to basic sanitation facilities.

In terms of school hygiene facilities, 10.6% of schools on average across the six LGAs had access to basic hygiene facilities, with schools in Binji (22.4 %) and Bodinga (16.6 %) LGAs presenting the highest number, while Wamakko (22.2 %), Kware (5.5 %), Yabo (5.2%) and Silame (2.8%) LGAs schools had the least numbers.

Figure 15: Status of WASH services in Schools(%)



3.2.1. Summary of Findings in Schools

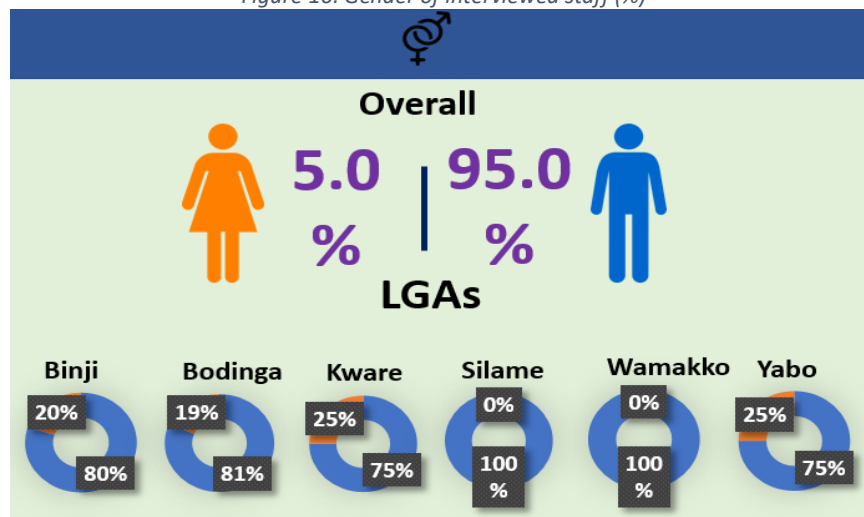
Across the study area, findings from the survey show that the presence of water facilities stood at 41.1%, 58.9% of schools have sanitation facilities and 31.3% of schools have hygiene facilities within their premises.

3.2.2. Demographics

3.2.2.1. Gender of interviewed staff in Schools

Across the board, male-dominated the number of interviewed staff at schools during the survey exercise accounting for 95% of the respondents, while this is the reality of the situation, it also shows the huge absence of females at the leadership positions in the schools within the study area.

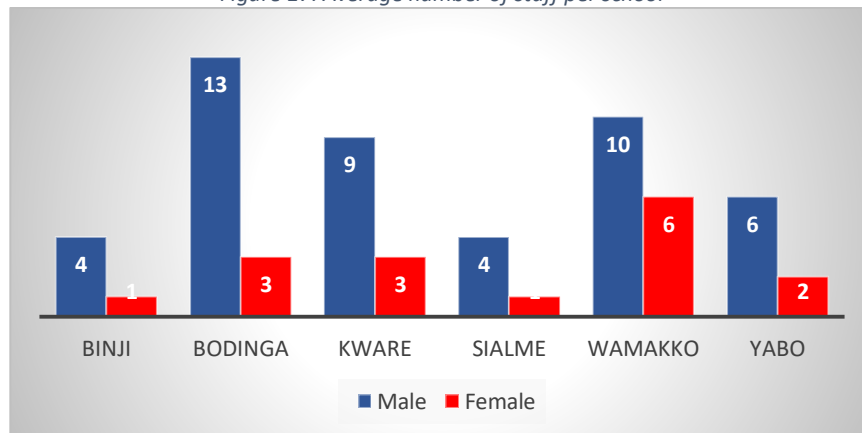
Figure 16: Gender of interviewed staff (%)



3.2.2.2. Average number of staff

As shown from the result of the baseline survey, there is a variation in the average number of staff across the schools within the study area, while Bodinga has an average of 13 staff per school. It is observed that there is a relatively low staff strength averaging 4 in Silame and Binji LGAs. Again, the result disaggregated by gender shows that most of the school staffing strength is male-dominated with only Wamakko having a considerable female representation amongst the school staffing.

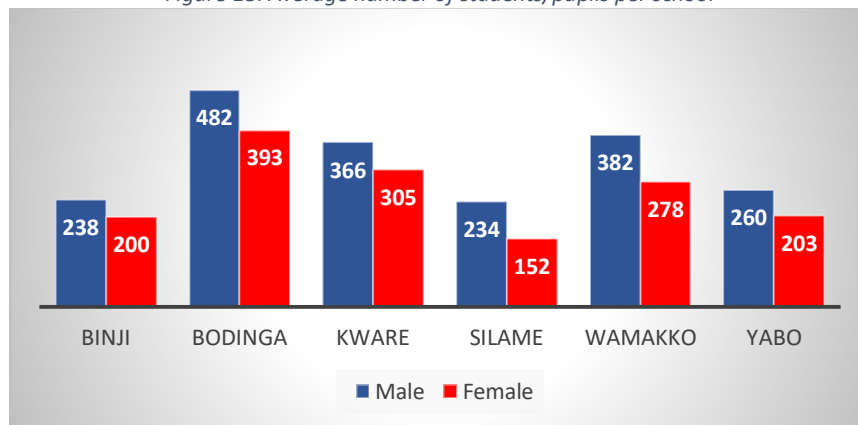
Figure 17: Average number of staff per school



3.2.2.3. Average number of Students/pupils per school

Again the survey result shows that Bodinga LGA has the highest average number of school enrollees and although the result shows that male enrollees are greater in number, there is still a seeming balance between male and female school enrollment across the study area.

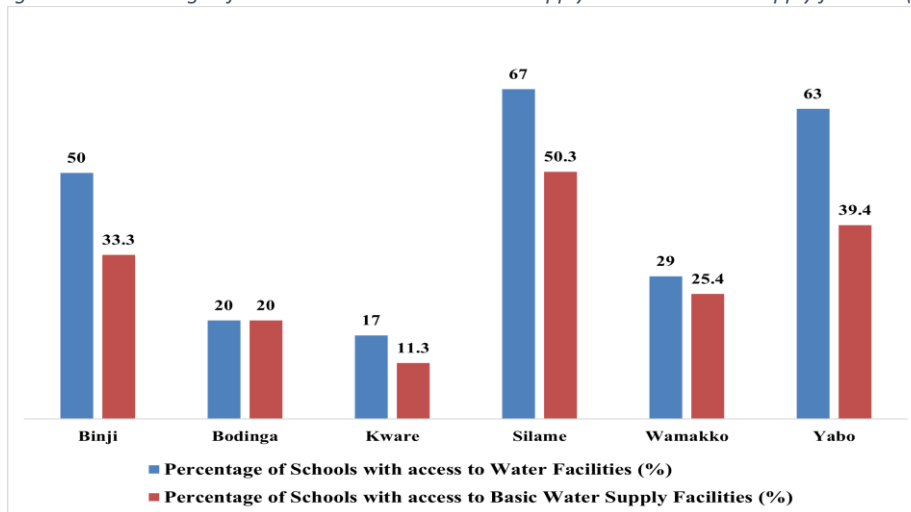
Figure 18: Average number of students/pupils per school



3.2.3. Status of Water Supply in Schools

As shown in Figure 19, the overall access to water supply facilities in schools across the LGAs, on average stands at 41%, out of which 30% of these facilities are basic water supply sources. Silame LGAs possess the highest number of schools (67%) with functional water supply facilities out of which 50.3% of these facilities are basic water supply sources. In Yabo and Binji LGAs, schools have considerable access to water supply sources at 63% and 50%, respectively, out of which 39.4% and 33.3% of these water facilities were made up of basic water supply sources. Bodinga, Kware and Wamakko LGAs present the least schools with access to functional water facilities at 20%, 17% and 29%, respectively, which are made up of 20%, 11.3% and 25.4% basic water supply facilities.

Figure 19: Percentage of Schools with access to water supply and basic water supply facilities (%)

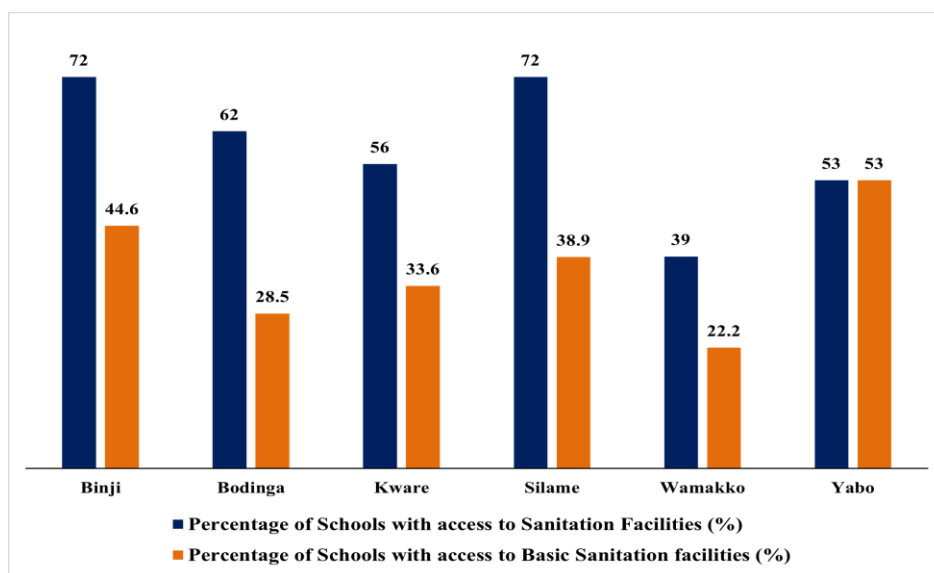


3.2.4. Status of Sanitation Services in Schools

As for access to sanitation facilities as shown in Figure 20, 59% of schools in the study area on average have access to sanitation facilities, out of which 36.8 % of these facilities are basic sanitation facilities. Silame, Binji, Bodinga LGAs present the highest number of schools with access to sanitation facilities greater than 60%, which were inclusive 38.9%, 44.6% and 28.5% basic sanitation facilities for each of the LGAs, respectively.

Meanwhile, Kware and Yabo LGAs present schools with relatively high access to sanitation facilities at 56% and 53% respectively, out of which 33.6% and 53% of these facilities were basic sanitation facilities. Wamakko LGAs had schools with least access to sanitation facilities at 39%, of which 22% of them are basic sanitation facilities.

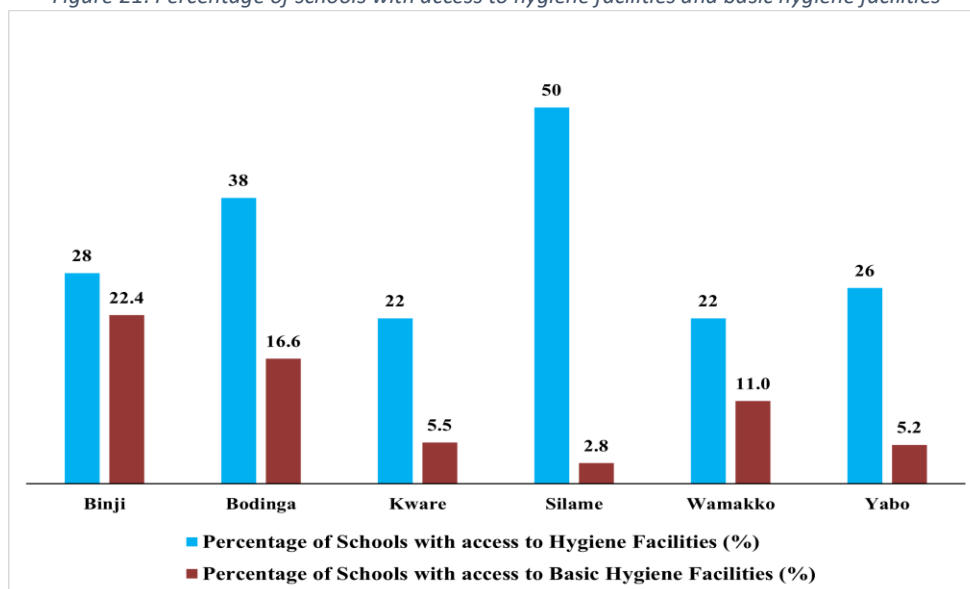
Figure 20: Percentages of schools with access to sanitation facilities and basic sanitation facilities (%)



3.2.5. Status of Hygiene Services in Schools

Based on the survey result in Figure 21, it is shown that on average, 31% of the schools in the LGAs have access to hygiene facilities, out of which 10.6% of these facilities are basic hygiene facilities. Schools in Silame LGA have the highest number of hygiene facilities at 50% which is inclusive of 2.8% basic hygiene facilities. Meanwhile, schools in Yabo, Binji, Bodinga, Kware and Wamakko LGAs possess fewer hygiene facilities at 26%, 28%, 38%, 22%, and 22%, respectively, that are inclusive of 5.2%, 22.4%, 16.6%, 5.5% and 11% basic hygiene facilities.

Figure 21: Percentage of schools with access to hygiene facilities and basic hygiene facilities



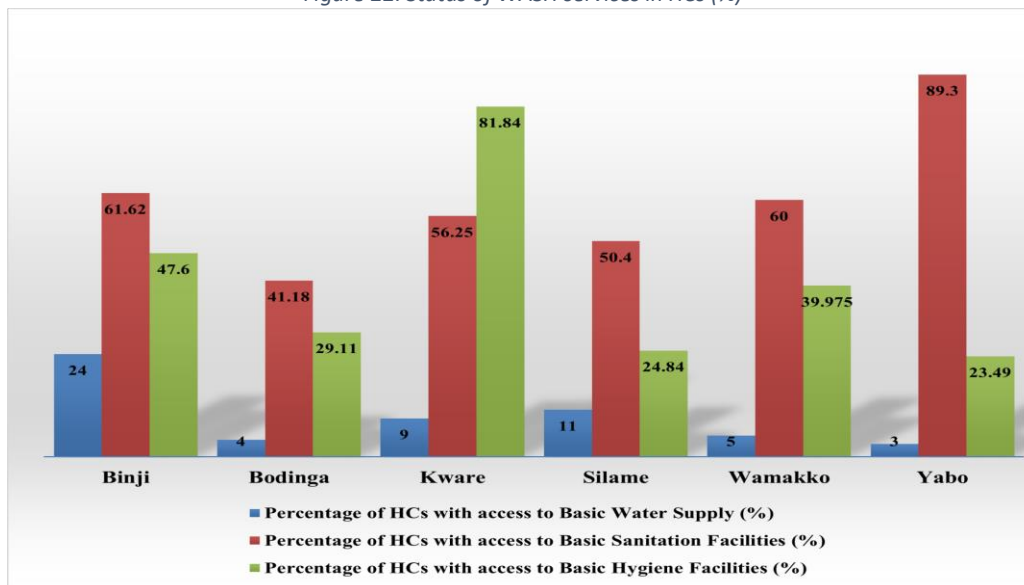
3.3 Status of WASH services in Health Centers (HCs)

As seen in the survey result in Figure 22, around 9.3% of HCs in the six (6) LGAs study area have access to basic water supply facilities, with Binji LGA showing the highest percentage of 24 % , followed by Silame and Kware at 11% and 9%, respectively. Meanwhile, Bodinga, Wamakko and Yabo LGAs present the least HCs with access to basic water supply facilities at 4%, 5% and 3%, respectively.

Overall, 59.8% of HCs in the LGAs, on average, have access to basic sanitation facilities. Interestingly, Yabo LGA has the highest number of HCs (89.3%) with access to basic sanitation facilities followed closely by Binji and Wamakko LGA whose access were 61.6% and 60%, respectively. Furthermore, Kware, Silame and Bodinga LGAs HCs access to basic sanitation facilities were at 56.25%, 50.4% and 41.2%, respectively.

On average, 41.1% of HCs across the six LGAs have basic hand washing facilities, with HCs in Kware (81.4%) LGA having the largest share of the facilities, followed by Binji and Wamakko LGA HCs at 47.6% and 39.97%, respectively. Bodinga, Silame and Yabo LGAs present the HCs with the least access to basic sanitation facilities with access percentages of 29.11%, 24.84% and 23.49%, respectively.

Figure 22: Status of WASH services in HCs (%)



3.3.1. Summary of Findings in HCs

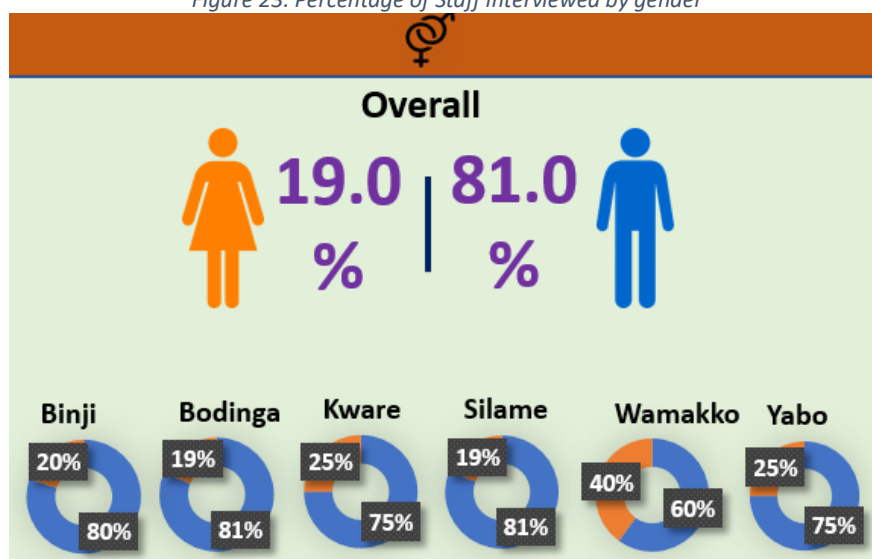
The survey found that 37.7% of HCs have water facilities, 76.4 percent have Sanitation facilities, and 62.3 percent have hygiene facilities within their premises across the research area.

3.3.2. Demographics

3.3.2.1. Gender of interviewed staff

Amongst the interviewed staff across the surveyed LGAs, 81% of them are male while 19% are female, again this shows gender parity within the leadership structures of the Health-centers, Wamakko LGA in this regards appears to be unique where up to 40% of the interviewed staff were female.

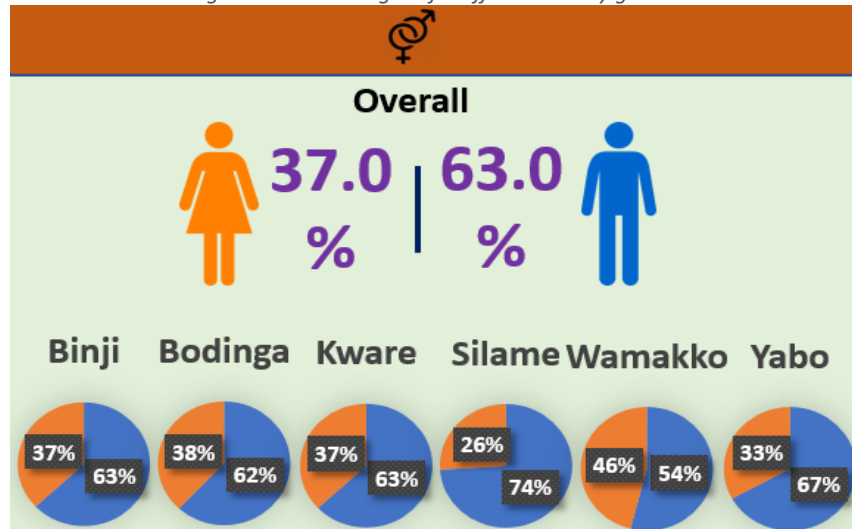
Figure 23: Percentage of Staff interviewed by gender



3.3.2.2. Gender of staff in HCs

As shown from the result of the baseline survey, there is a variation in the gender representation amongst the staff of the surveyed HCs in the six (6) LGAs, the overall average of the result shows that 64% of staff members in the HCs are male while 36% are female. With regards to gender proportion in each LGA, Wamakko LGA has the highest proportion of female staff standing at 46% against Silame LGA has the least with only 26% representation of female staff members.

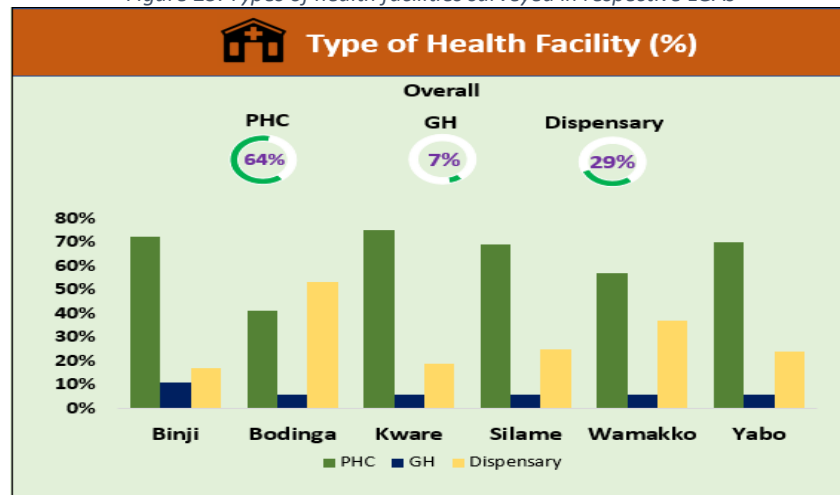
Figure 24: Percentages of Staff in the HC by gender



3.3.2.3. Type of Health center surveyed

During the baseline survey, most of the HCs surveyed were Primary healthcare centers (PHC) while General hospitals (GH) are the least surveyed, this representation is indeed obvious because the survey was focused on rural communities where most health facilities found are PHCs whereas general hospitals are difficult to come across.

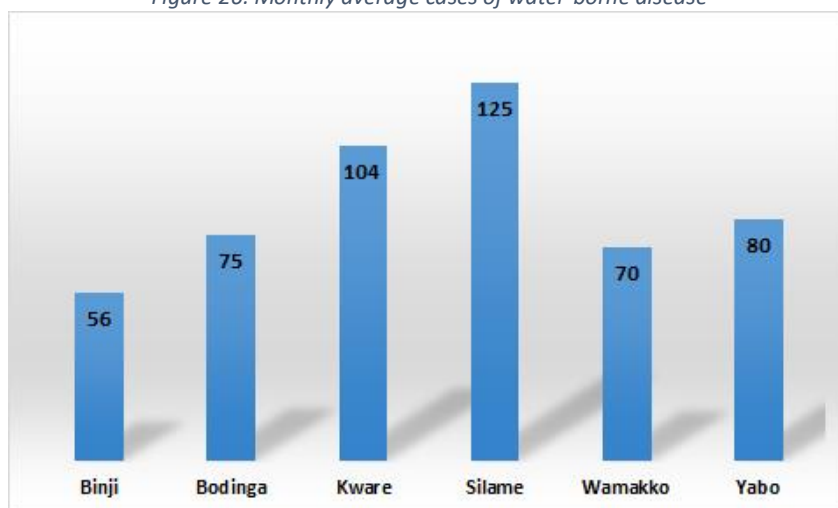
Figure 25: Types of health facilities surveyed in respective LGAs



3.3.2.4. Water-borne disease cases.

Cholera/diarrhea, malaria and typhoid were the water-borne diseases recorded during the baseline survey because they were considered the most prevalent in the study area. The survey result obtained shows that Silame and Kware LGAs have the highest average of water-borne disease prevalence while Binji has the least occurrence in the last six months.

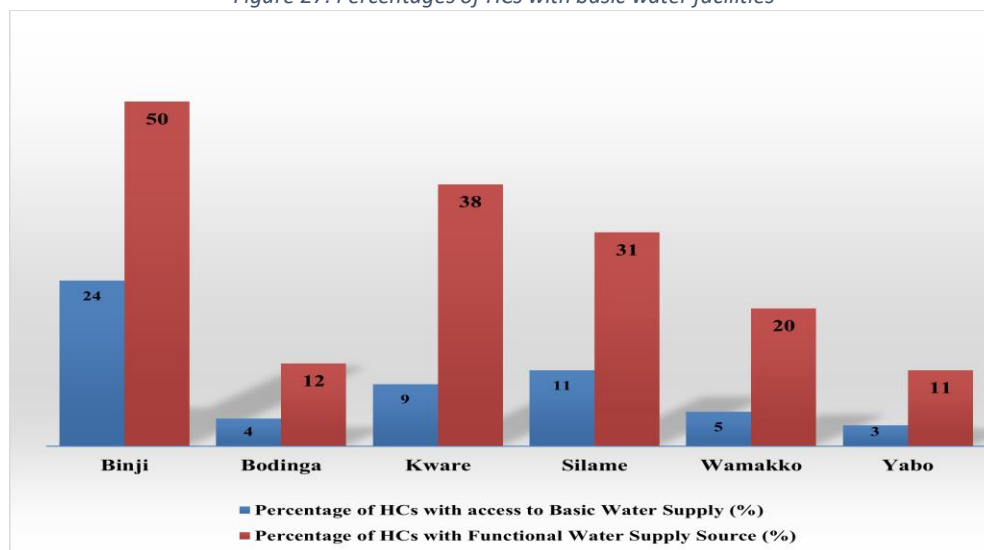
Figure 26: Monthly average cases of water-borne disease



3.3.3. Status of Water Supply in HCs

Figure 27, shows the survey results of the HCs access to functional water supply facilities and basic water supply facilities. As depicted, 50% of HCs in Binji LGA have access to functional water facilities out of which 24% of these facilities are basic water supply sources. Furthermore, Kware (38%), Silame (31%) and Wamakko (20%) all present HCs with considerable access to functional water facilities, and a negligible portion of these facilities are basic water supply sources (Kware: 9%, Silame: 11% and Wamakko: 5%). On the other hand, Yabo (11%) and Bodinga (12%) LGAs present HCs with the lowest access to functional water supply facilities, which are inclusive of 4% and 3% basic water supply sources for the LGAs, respectively.

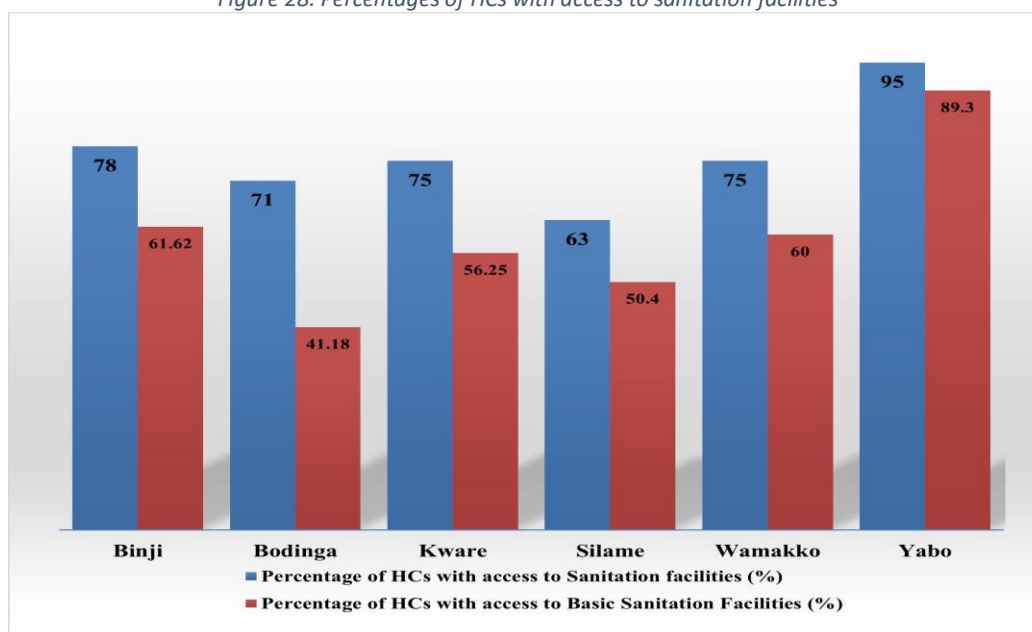
Figure 27: Percentages of HCs with basic water facilities



3.3.4. Status of Sanitation Services in HCs

The survey findings in Figure 28 revealed that Yabo LGA has the highest number of HCs with access to sanitation facilities, with over 95% of HCs with functional sanitation facilities, and around 89.3% of such facilities are basic sanitation facilities. Similarly, all the other LGAs present a high number of HCs with access to sanitation facilities, with access percentage greater than 60%. However, the proportion of these facilities that are basic sanitation facilities were slightly lower.

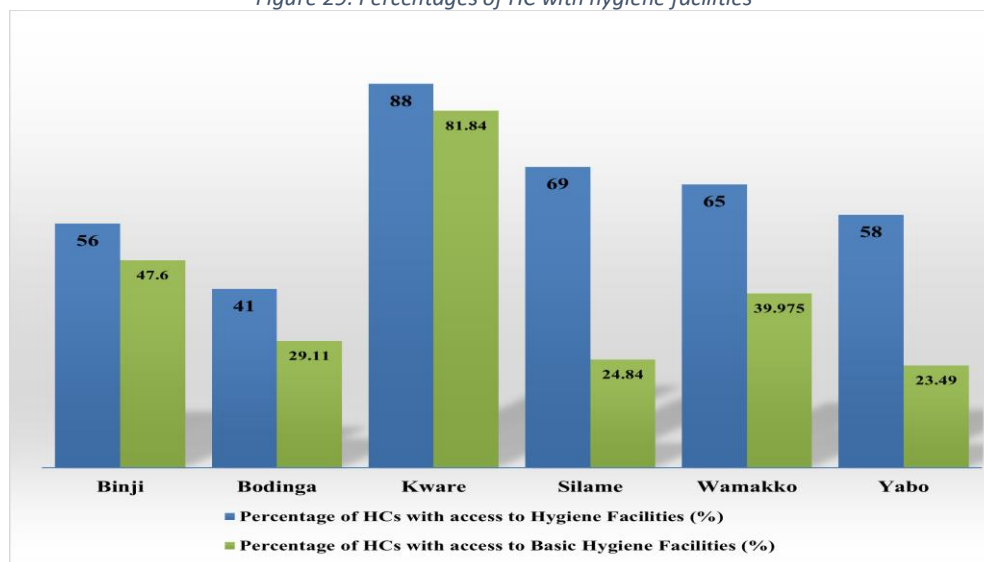
Figure 28: Percentages of HCs with access to sanitation facilities



3.3.5. Status of Hygiene Services in HCs

In all of the six LGAs study area, Kware LGA has the highest number of HCs with access to hygiene facilities which stands at 88%, and the proportion of these facilities that represented basic hygiene facilities was 81.84%. Furthermore, Silame and Wamakko LGAs were next, with a high number of HCs having access to sanitation facilities which were at 69% and 65%, respectively. Moreover, the proportion of these facilities that are basic sanitation facilities were 24.8% and 39.9% for Silame and Wamakko LGAs, respectively. Lastly, Binji, Bodinga and Yabo LGAs, also showed a significant number of HCs with access to sanitation facilities with access percentages of 56%, 41% and 58%, respectively. In addition, the proportion of these facilities that are basic sanitation facilities are 47.6%, 29.1% and 23.4% for Binji, Bodinga and Yabo LGAs, respectively.

Figure 29: Percentages of HC with hygiene facilities



3.4. Sustainability of WASH Services

This section looks at the status of sustainability culture, structures and strategies of the studied LGAs, attributes such as willingness to pay for operation and maintenance of WASH services, and the presence of organized community structures amongst others will be examined.

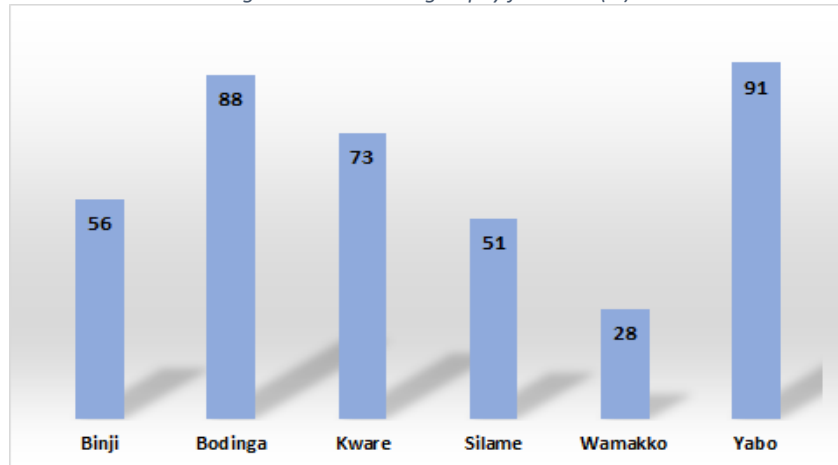
3.4.1. Summary of Findings on Sustainability of Wash Services

Across the studies LGAs, an average of 65.4% of households said they were willing to pay for the operation and maintenance of improved water supply services, organized community structures comprising WASH committee (WASHCOM) water consumer association (WCA), youth organizations and religious institutions were present all across the studied area with an overall average of 21 such community structures per LGA. Furthermore, the survey shows that Local area mechanics are present across all of the studied LGAs.

3.4.2. Willingness to pay for O&M of improved Water supply

Figure 30 shows the percentage of HHs who are willing to pay for improved water supply across the six (6) LGAs, the survey shows that Yabo, Kware and Bodinga has the highest percentages of HHs that are willing to pay the operation and maintenance where over 80% of the HHs expressed readiness to pay for such services whereas HHs in Wamakko LGA show the least interest to pay with only 28% of the HHs responding positively.

Figure 30: HHs willing to pay for O&M (%)

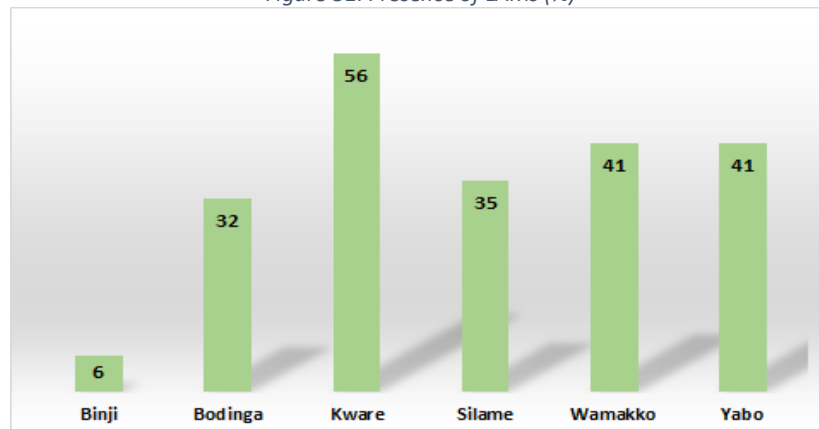


3.4.3. Presence of Local Area Mechanics (LAMs)

The essence of this information is to ascertain the level of presence of local area mechanics who are into or can easily key into borehole repairs within the target communities, the presence of such skilled individuals will greatly help in prompt maintenance and repairs of water facilities.

The data below shows the presence of local area mechanics across the surveyed LGAs where Binji recorded the least presence of such skilled populace where only 6% of respondents affirmed their presence whereas over 40% of respondents across the other five (5) LGAs confirmed the presence of such skilled individuals within their respective communities.

Figure 31: Presence of LAMs (%)



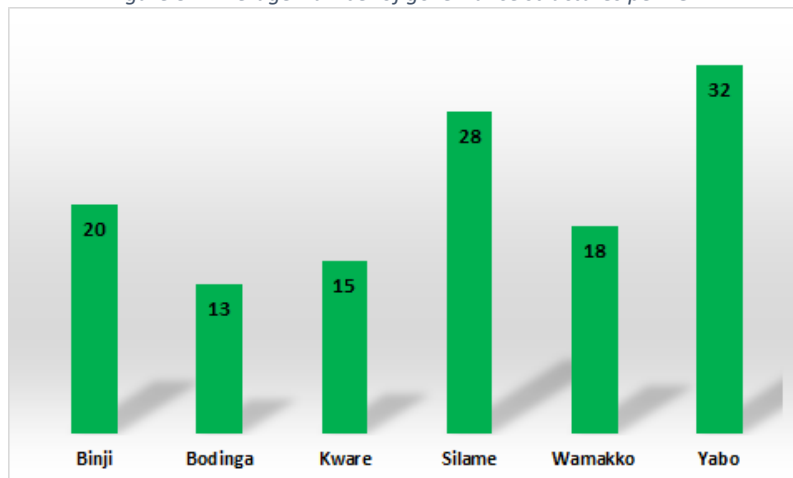
3.4.4. Presence of WASH governance structures in communities

During the baseline survey, questions about the existence of functional and organized community structures were asked and the responses across the six (6) LGAs studied show that such community structures including WASHCOMs, WCA, religious institutions, and youth organizations are generally present with various functions within the communities including the Operation and maintenance of water facilities (especially boreholes).

The survey result highlighted in figure 32 shows the average number of such community structures in each LGA.

Yabo and Silame having an average of 32 and 28 of such structures respectively appear to be LGAs with the highest presence of such structures whereas Bodinga has the least average.

Figure 32: Average Number of governance structures per LGA



4. RECOMMENDATIONS AND CONCLUSION

Below are recommendations informed by the results of the baseline survey:

1. Only around 32% of homes have access to basic water supplies. Thus, the need to provide more water facilities that will accord access to basic water facilities within the communities.
2. The status of sanitation in schools is not favorable where more than 58% of schools lack access to basic sanitation facilities and hence Sanitation facilities in Schools should be properly looked into.
3. The State Universal Basic Education Board should institute the setting up of WASH Clubs in Schools to promote sanitation and hygiene activities in schools. A desk officer at the board should be mandated to promote, manage and support the clubs across the schools in the State.
4. Results showed very poor respondents' knowledge of basic sanitation and hygiene habits. Educational and advocacy programs on hygiene promotion should be increased through radio and TV programs.
5. LGA WASH Units should be well equipped and funded to provide basic operation and maintenance services for WASH services in respective LGAs.
6. The SUBEB and SPHCDA should key into the activities of the LGA WASH Units to ensure that WASH facilities in schools and PHCs in respective LGAs are well managed and are kept in good working condition.
7. The State should dedicate funding for O&M of WASH facilities through the RUWASSA in collaboration with the LGA WASH Units.
8. The Ministry of Environment should enforce laws that prohibit and mitigate open defecation and dumping of waste. Open dumping of waste and defecation in public spaces, streams and rivers has been observed to cause serious contamination of water sources.
9. Private Sector segments of WASH have not been fully explored. There are a lot of business and investment opportunities in the sanitation business as well as O&M services that should be tapped into.
10. RUWASSA needs to improve the current draft policy on water to ensure climate change hazards, water resources protection and management are well captured to promote sustainability of WASH services.
11. RUWASSA requires more funding and support from the State government to improve its ICT facility and data management services.

REFERENCES

Günther, I., & Fink, G. (2011). Water and sanitation to reduce child mortality: The impact and cost of water and sanitation infrastructure. *World Bank Policy Research Working Paper*, (5618).

Rakotomanana, H., Komakech, J. J., Walters, C. N., & Stoecker, B. J. (2020). The WHO and UNICEF Joint Monitoring Programme (JMP) Indicators for Water Supply, Sanitation and Hygiene and Their Association with Linear Growth in Children 6 to 23 Months in East Africa. *International journal of environmental research and public health*, 17(17), 6262.

Meeks, J. V. (2012). *Willingness-to-pay for maintenance and improvements to existing sanitation infrastructure: assessing community-led total sanitation in Mopti, Mali*. University of South Florida.

World Health Organization. (2019). WASH in health care facilities: global baseline report 2019.

World Health Organization. (2021). Progress on household drinking water, sanitation and hygiene 2000-2020: five years into the SDGs.

APPENDIX



Picture 1&2: Cross section of enumerators undergoing training on use of Kobo-toolbox and other survey instruments (14/02/2022)



Picture 3&4: Enumerators in Wamakko LGA during the baseline data collection (16/04/22)