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Accelerating Sanitation and Water for All (ASWA – II)

PHASE II

Community Water Supply, School, Health Care Facility

IN COLLABORATION WITH IDS NEPAL, BALUWATAR, KATHMANDU

Baseline Report

Prepared for: UNICEF Nepal Country Office



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EXECUTIVE SUMMARY

Background

Water and sanitation coverage in schools has been improving. Despite that there remain critical bottlenecks particularly as they relate to girls and children with disabilities. WASH in health facilities remain a significant challenge, due to inadequate coverage and poor hygienic use of existing facilities, leading to water borne diseases and infections. To address some of the challenges mentioned above, UNICEF Nepal has received financial assistance - ASWA II project with funding from DFID through UNICEF Headquarters (HQ) will be implemented. This will be implemented mainly in eight Terai districts which include (i) Saptari, (ii) Siraha, (iii) Dhanusha, (iv) Mahottari, (v) Sarlahi, (vi) Rautahat, (viii) Bara and (viii) Parsa. The objective of ASWA-II is to support federal, provincial and local governments to strengthen their capacity and systems to plan, implement, monitor and sustain WASH services, building both community and government ownership by strengthening the enabling environment while ensuring sustained use of safely managed water supplies and the elimination of Open Defecation and hygiene by people in targeted districts, especially by women and girls and persons with disability.

Objectives

In this regards, UNICEF Nepal Country Office engaged IDS Nepal and Progress Inc., to conduct a baseline survey in the selected communities, schools and health facilities in order to measure the progress to improved and sustain sanitation and hygiene practices. Specifically, the objectives of the baseline study were:

- To assess water quality test at select households in pre-selected communities, identified through a detailed feasibility study.
- To assess baseline conditions of schools and health facilities, primarily assessing their toilets, water supply system, and handwashing stations, including mechanism for menstruation hygiene management.

Methodology

The global ASWA-II programme has multi-level *Impact, Outcome and Output* indicators common across all intervention countries. The outcome indicator 1, 2, 3, and 4 have already been established. Hence, the phase 2 data collection of ASWA II programme, focused on reporting on outcome indicators 6 and 7.

Outcome indicator 6: Proportion of intervention schools with students practicing handwashing with soap water after visiting the toilet at least 1 year after intervention.

Outcome indicator 7: Proportion of intervention healthcare facilities with functional basic WASH services at least 1 year after intervention.

The Phase II of the baseline study used quantitative surveys: (1) school questionnaire, and (2) health facility questionnaire. A total of 50 schools were visited for the survey. The school questionnaire aimed to report on the outcome indicator 6. A total of 20 HCF was targeted from within the feasible communities for survey. The HCF survey aligns with outcome 7 of the logframe. The *ASWA-II, Baseline Survey: Training Guidance and Data Collection Tools* was used to guide the survey process. The information was derived from the respondents' interviews at school and health facilities. Observation at the institutions further informed on the conditions of toilets, water supplies, and hand washing stations. Moreover, at the schools and health

facilities, on spot water quality test were conducted for e-coli, arsenic and microbiological bacteria via presence absence (PA) vial. These tests were conducted at the source, and also in the object from which people consume water. Water quality testing was carried out at the 17 communities in sampled households. Water was collected at the source of these sampled households, as well as from the object. E-coli and arsenic tests were carried out at the site while the other parameters were tested in the laboratory.

In selecting the communities, schools, and health facilities a feasibility study was done in 86 communities prior to baseline study for potential WASH interventions identified by UNICEF together with the local governments. After the completion of the feasibility study in 86 communities, outcome survey was carried out in the feasible areas. From the feasible communities, 20% of a sample size was determined to carry out community level water quality testing. Furthermore, from within those communities, 50 schools and 20 HCF were selected for the baseline. The selection of particular schools and HCF was determined only after the completion of feasibility study.

Key findings

Findings on School Indicators

A total of 52 schools were surveyed for the baseline. The school level indicator attempted to capture a) handwashing practice among students, b) accessibility of toilets to both the genders, and children with disability, c) schools that are free of open defecation, and schools using improved water facility.

In assessing the handwashing behavior of the students, a total of 189 students were observed from 36 schools. Results showed that only 31 per cent of the total students observed, washed their hands with water after using the toilet. The highest practice of handwashing with water was found in Dhanusa (46 per cent), followed by Saptari (39 per cent), and no handwashing was practiced in Mahottari, and Sapatari.

In assessing the usability and accessibility of toilets for all students, including students with disability, it was found that 35 out of 52 schools (67 per cent) were usable, but none were accessible to students with disabilities.

	Definition	Value for indicator	Numerator	Denominator
Total - Indicator 6a: Proportion of schools where toilets are used consistently by all children, including girls and students with disabilities	Toilets that are usable – at least at least one for Boys and Girls or at least one for Mixed/common & Toilets that are accessible to students with disabilities	0%	0	52

The status of open defecation showed that 67.3 per cent of the schools were free from human faeces. Observation showed that schools in Dhanusa, Rautahat, and Sarlahi were free of open defecation, while all schools in Siraha had evidence of human defecation.

	Definition	Value for indicator	Numerator	Denominator
Total - Indicator 6b: Proportion of schools that are free of open defecation in and around the school yard	Human feces were observed on the school grounds	67%	35	52

Moreover, all the schools with access to water sources had improved sources for drinking water. Majority of the sampled schools (90.4 per cent) had water source for drinking purpose. There were 5 schools (9.6 per cent) that did not have a source of drinking water in their school. In the observation it was found that majority of the schools across all districts had tubewell as the main source of drinking water.

	Definition	Value for indicator	Numerator	Denominator
Total - Indicator 6c: Proportion of schools using an improved water facility	Number functional is at least 1 in any of the following rows: piped into building, piped to school yard, public tap / standpipe, water kiosk, borehole, tubewell, protected dug well, protected spring, rainwater, tanker truck	90%	47	52

Findings on health indicators

A total of 20 HCF were surveyed from across eight districts. The health indicators attempted to capture a) health care facilities with functional hand hygiene stations near points of care and toilets, b) health care facilities with basic sanitation, c) health care facilities that use an improved water supply located on premises.

In assessing the functional handwashing station near toilet and point of care, it was found that in 76.9 per cent of the HCFs with toilet, there was a presence of handwashing facility. None of the HCFs visited had a place of handwashing available within 5 meters of toilet. Only three out of 20 (15 per cent) was available to the outpatients, while the remaining was only accessible to staff. Half of the handwashing facilities had provision of water, while only 10 per cent had provision of soap. There were no HCFs with gel hand sanitizers. Furthermore, survey attempted to capture the availability of handwashing facility for the outpatient at the point of care, that had a provision of water, and soap/ or sanitizer. Findings showed that 70 per cent of the HCFs had handwashing facilities at point of care as opposed to 50 per cent near toilets. None of these handwashing facilities were available to the outpatients and was used only by the staff. There was provision of water in 70 per cent of the handwashing facilities at POC, and soap in 40 per cent of handwashing facility in POC.

	Definition	Value for this indicator	Numerator	Denominator
Total - Indicator 7a: functional hand hygiene stations near points of care and toilets	Functional handwashing stations (available to outpatients, with water and soap/gel hand sanitizer) are located within 5 meters of: - Toilets - Points of care	0%	0	20

In total 65 per cent of the sampled HCFs had toilets. In assessing the functional toilets 60 per cent of the HCFs had at least one toilet irrespective of it being dedicated for male, female, or staff that was usable in the HCF. 40 per cent HCF did not have at least one usable toilet, 35 per cent had one toilet that was usable, 15 per cent had two toilets, and 10 per cent had three toilets that was usable. The survey also attempted to see if there were any toilets in these HCFs that catered to the specific needs of women for menstruation. Study showed that 20 per cent of the HCF had separate toilets for girls and women, 45 per cent did not have a separate toilet for girls, and 35 per cent did not have toilets at all. It was found that there were no toilets that was designated for women and girls and there were not a single toilet that was accessible to people with limited mobility.

	Definition	Value for this indicator	Numerator	Denominator
Total - Indicator 7b: basic sanitation	At least one improved toilet is usable, accessible, functional, private, and clean - At least one usable improved toilet is designated for women and girls and provides a bin for menstrual hygiene materials, private space for washing with water and soap available - At least one usable improved toilet meets the needs of people with reduced mobility	0%	0	20

Results demonstrated that the 90 per cent of the health posts had improved source of drinking water (75 per cent – tubewell, 10 per cent- piped water, and 5 per cent- bottled water). Despite the fact that all HCFs had improved water source as main source of drinking, there were few HCFs that did not have water sources within the premises. 85 per cent of the HCF had improved water supply on premises of the health facility.

	Definition	Value for this indicator	Numerator	Denominator
Total - Indicator 7c: improved water supply located on premises	Number with water available is at least 1 in any of the following rows: piped supply inside, piped supply outside, tubewell, borehole, protected dug well, protected spring, rainwater, tanker truck and is "on premises"-	85%	17	20

The result of e-coli presence in the sampled communities, schools and health care facility is astounding. E-coli count was detected in 88.9 per cent of the sampled main sources. In almost half of the sampled sources (45.7%), e-coli count was reported at the highest count of 101. The presence of e-coli was higher at household level (96.5 per cent). At the school level, 84.8 per cent of the sampled schools had e-coli. When the water from drinking object was tested in schools, there was a sheer increase in the proportion

of schools where drinking water had presence of E-Coli. Barring Laxmi Nath Primary School in Sarlahi, all the other schools had e-coli present.

Presence of E-Coli was found in three fourth (73.7 per cent) of the main water sources in HCF. The presence of E-Coli needs immediate attention among all these three entities: community, school, and HCF. The presence of E-Coli is more than three fourth in all these sampled sites signaling vulnerabilities among the people who are consuming water to water borne illness. Moreover, treating the water before drinking is almost missing.

The presence of arsenic in drinking water was only found in 24.6 per cent of the households main source of water. At the school level, in almost half (41.3%) of the water quality tested schools, arsenic was present ranging from 5 to 10 ppb. The highest arsenic ppb was found in Shree Gyan Jyoti School in Bara. In case of the presence of arsenic at health posts, only 21 per cent of the facilities contained arsenic in the range of 10- 20 ppb.

Implications

Water test results showed that disproportionate number of communities, schools, and HCFs were consuming water that had presence of E-Coli. The presence of E-Coli is more than three fourth in all these sampled sites signaling vulnerabilities among the people who are consuming water to water borne illness. Moreover, treating the water before drinking is almost missing. It is of utmost importance that the quality of water is treated before consumption. Moreover, there were schools and HCFs that contained arsenic in drinking water which results in health implications. The communities and stakeholders using the current source that contains arsenic should be oriented that the source is not apt for drinking water, and they should be supported with another water source.

Despite the provision of improved toilets in schools and HCFs, there are no schools and HCFs that had toilets that were accessible to children/people with disability. Moreover, even majority of the schools denied facilities that would cater to the needs to menstrual hygiene management of the girls. It is important to support schools and HCFs in building toilets that are gender-friendly and disabled-friendly.

It was noted that the same source of water used for drinking purpose was mostly used for handwashing purpose as well. Provision of water was not a major problem, but majority of these facilities lacked soap or alternative cleansing agent. There were no schools that practiced daily handwashing, moreover results from handwashing observations showed poor results as none of the students were using soap for handwashing. Handwashing facilities lacked soap, and proper handwashing practice was not followed at all. It is important that the school authorities closely observe the handwashing practice of children, and also organize activities that encourage handwashing among students.

LIST OF ABBREVIATIONS

ASWA	Accelerating Sanitation and Water for All
DFID	Department for International Development
GoN	Government of Nepal
GPS	Global Positioning System
HCF	Health Care Facility
HH	Household
HQ	Headquarters
IRA	Initial Rapid Assessment
JMP	Joint Monitoring Programme
KII	Key Informant Interview
LG	Local Government
MDG	Millennium Development Goals
MICS	Multiple Indicators Cluster Surveys
NCO	Nepal Country Office
NDHS	Nepal Demographic and Health Survey
NGO	non-governmental organization
NPR	Nepalese Rupees
SDG	Sustainable Development Goals
SPSS	Statistical Package for Social Science
UNICEF	United Nations Children’s Fund
US\$	United States Dollar
WASH	Water Sanitation and Hygiene

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CHAPTER 1: INTRODUCTION

1.1 OVERVIEW OF THE ASWA-II PROGRAMME IN NEPAL

1.1.1 Context and rationale for the programme

Over the last five years, sanitation coverage in Nepal has improved significantly. The open defecation rate decreased from 38 per cent to 13 per cent as a result of the Open Defecation Free (ODF) social movement. However, huge disparities remain in terms of sanitation coverage: 83 per cent in the mountain regions, and 96 per cent in the hills and it is 77 per cent in the Terai. Similarly, handwashing with soap during critical times such as before breast feeding or feeding a child and after changing nappies continues to be very low at 9 per cent. 71 per cent of water sources were found to have microbial contamination and 82 per cent of household water are contaminated with coliform, a major cause of diarrhea (MICS, 2014).

Even though water and sanitation coverage in schools has been improving, critical bottlenecks remain particularly as they relate to girls and children with disabilities. WASH in health facilities remains a significant challenge, due to inadequate coverage (20 per cent of facilities do not have access to drinking water, 22 per cent do not have access to toilets) and poor hygienic use of existing facilities, leading to water borne diseases and infections.

Achieving SDGs in Nepal will be a big challenge for the sector, Joint Monitoring Programme (JMP) - 2015 estimates indicate that only 27 per cent of the population have access to safely managed drinking water supply (a drop of 60 per cent from the MDG improved coverage of 87 per cent). An estimate for safely managed sanitation is not yet available but it will be much lower than JMP estimate of improved sanitation of 46 per cent.

To address some of the challenges mentioned above, UNICEF Nepal has received financial assistance - ASWA II project with funding from DFID through UNICEF Headquarters (HQ) will be implemented. This will be implemented mainly in eight Terai districts which include (i) Saptari, (ii) Siraha, (iii) Dhanusha, (iv) Mahottari, (v) Sarlahi, (vi) Rautahat, (viii) Bara and (viii) Parsa.

1.1.2 Programme objectives

The objective of ASWA-II is to support federal, provincial and local governments to strengthen their capacity and systems to plan, implement, monitor and sustain WASH services, building both community and government ownership by strengthening the enabling environment while ensuring sustained use of safely managed water supplies and the elimination of Open Defecation and improving hygiene of people and students in targeted districts, especially by women and girls and persons with disability. Major interventions under this programme are supporting people to have improved access to basic sanitation and safe water, WASH in schools and healthcare facilities.

1.1.3 Key programme components, activities and implementation strategy

The key results to be achieved are (i) 350,000 additional people including children and women in eight Terai districts who are in the most deprived areas will have access to improved sanitation, (ii) 25,000 people to have access to safely managed water supply by 2022. In the same target communities (iii) 50 schools and (iv) 20 healthcare facilities will be provided with access to the safe and reliable WASH services

according to the national standards and (v) central and local governments will be provided with technical and financial assistance for enabling environment for WASH.

To supplement government's effort in the provision of improved water sources through rehabilitation of dysfunctional schemes and construction of new systems, this project will focus on construction of improved toilet, water safety plans and reinforce behaviour transformation on the use of safe water and sanitation.

1.1.4 Duration/timeframe and budget

The implementation period of the ASWA-II programme in Nepal will be from September 2017 to December 2022; with a budget of **US\$ 6,526,533.75**; whereby US\$ 476,500.00 is from UNICEF's own resources and US\$ 6,050,033.75 is from DFID support.

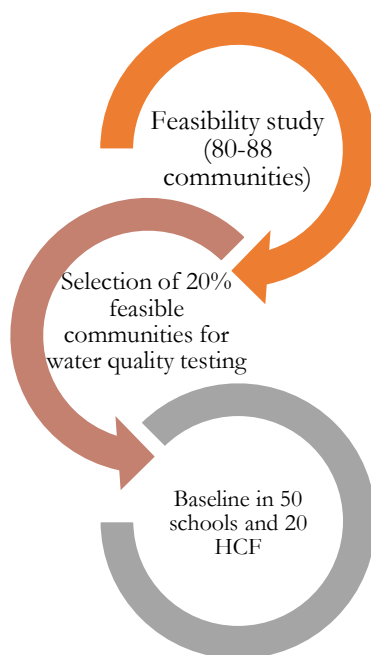
1.1.5 Intervention setting and areas

The ASWA-II programme will be implemented in eight Terai Districts in Nepal's south-eastern Province 2. The Government of Nepal (GoN) has very recently introduced a new government structure under which there will be 753 Local Governments (LGs) and seven provinces. All these districts on the southern border of Nepal and falls in the geographical area known as the **Terai**.

1.1.6 Eligibility/prioritization criteria for selecting communities, schools and health facilities within targeted districts/municipalities

The eight Terai districts include (i) Saptari, (ii) Siraha, (iii) Dhanusha, (iv) Mahottari, (v) Sarlahi, (vi) Rautahat, (vii) Bara and (viii) Parsa. Four of the eight districts being selected under ASWA II (i.e., Siraha, Dhanusha, Mahottari and Rautahat) were part of the ASWA I programme. Targeting these four districts under ASWA II will give continuity to accelerate progress on sanitation and build on lesson learned during the implementation of ASWA I. In 2015, GoN declared these eight Terai districts as sanitation dark districts. Following this declaration, different activities were planned namely regional and district level sanitation conferences with the involvement of multi-sector stakeholders whereby a consensus was made to promote sanitation in coordination and collaboration with all stakeholders.

It should be noted that community and household survey baseline information have already been established, hence this phase (also known as ASWA II Phase 2) of the baseline study focused on water supply in communities, schools, and health facilities. In selecting the communities, schools, and health facilities a feasibility study was done in 86 communities prior to baseline study for potential WASH interventions identified by UNICEF together with the local governments. After the completion of the feasibility study in 86 communities, outcome survey was carried out in the feasible areas. From the feasible communities, 20% of a sample size was determined to carry out community level water quality testing. Furthermore, from within those communities, 50 schools and 20 HCF were selected for the baseline. The selection of particular schools and HCF was determined only after the completion of feasibility study.



1.2 SURVEY OBJECTIVES

UNICEF Nepal Country Office engaged IDS Nepal and Progress Inc., to conduct a baseline survey in the selected communities, schools and health facilities in order to measure the progress to improved and sustain sanitation and hygiene practices. The main objectives of this baseline survey were:

- To collect water sample and baseline information from selected communities, schools and health facilities needed to inform the log-frame indicators and establish a reference/baseline situation. Data collected at mid-line and end-line surveys will be compared to the baseline data to assess progress and results achieved through the programme. This will help UNICEF take appropriate measures, results will be periodically reported to the donor, and the assessment of progress and results will serve for evaluation purposes at the end of programme implementation.
- To establish a baseline situation of the community, school and health facilities for future sustainability checks.

Further, specific objectives of the baseline study were:

- To assess water quality test at select households in pre-selected communities, identified through a detailed feasibility study.
- To assess baseline conditions of schools and health facilities, primarily assessing their toilets, water supply system, and handwashing stations, including mechanism for menstruation hygiene management.

1.3 SURVEY ORGANIZATION – IDS NEPAL AND PROGRESS INC.

The baseline survey for both ASWA II phases is conducted by Progress Inc., a Nepal registered company provides research, monitoring and evaluations, capacity building and other managerial support to the public, private and non-profit sectors in Nepal. The organization works with a broad network of highly skilled, experienced international and national consultants and advisors from various sectors including education, agriculture, governance, livelihood, disaster resilience, information technology, WASH, health and much more. Progress Inc. is a gender responsive and socially inclusive organization. In all of its assignments, Progress Inc. involves a mix of the youths, marginalized and experienced freelancers while promoting paperless data collection through android based mobile data collection applications such as KoboTool, SurveyCTO, ODK, fieldtask and AKVO. These technologies enable rapid field assessments, producing less errors due from data entry, offers real-time analysis and traceability of data. The company’s website can be found on <http://www.progressincnepal.com>. The second phase of the study is conducted in collaboration with IDS Nepal, a Nepal based non-governmental organization with vast experience in engineering, sanitation, health, and social development. Since 2000, it has been ensuring through projects that communities are self-sustained.

For this assignment, two senior consultants and seven enumerators were engaged. The senior consultants designed the study protocols, assured quality, liaised with UNICEF HQ, ROSA and NCO and provided feedback and reporting for the study. The senior team also performed data collection in one of the eight districts for understanding the context. The senior team were further responsible for training and facilitating a simulation for the enumerators. The role of the enumerators was solely to collect the baseline data as well as to conduct the water quality testing at communities, schools, and health facilities.

1.4 SURVEY PERIOD AND TIMELINE

The baseline study was conducted as outlined in the table below.

Table 1 Study phases

Activities	Dates
Inception Phase and Tools Review	March 19 – April 15, 2019
Training and Piloting for Enumerators	April 23 – 25, 2019
Data Collection (Phase 2) and Water Quality Testing	April 27 – May 8, 2019
Data Analysis and Reporting	May 13 – 31, 2019



CHAPTER 2: METHODOLOGY

2.1 M&E INDICATORS FOR THE PROGRAMME

The global ASWA-II programme has multi-level *Impact, Outcome and Output* indicators common across all intervention countries. The outcome indicator 1, 2, 3, and 4 have already been established. Hence, the phase 2 data collection of ASWA II programme, focused on reporting on outcome indicators 6 and 7. Outcome indicator 5, will only be measured at the midline, given it is validated only once the interventions have started. The overall log-frame is presented in the table below:

Outcome indicator	What does it measure?	Measurement approach
Outcome indicator 1: Proportion of externally verified ODF communities attributed to DFID support that maintain their ODF status for at least one year	Externally verified ODF communities	Maintenance of ODF status will be assessed through the combination of observations of open defecation in communities and household settings and use of a toilet by all households.
Outcome indicator 2: Proportion of people in intervention communities that use household toilets, disaggregated by JMP toilet category, sex, disability and wealth ranking	Use of toilets by all members of the household	Interview with head of household will determine access to a toilet and identify if anyone does not use the toilet and whether this is due to disability, sex, or other factor. Structured observation of the toilet used by the household to provide additional evidence of use and whether it meets national standards.
Outcome indicator 3: Proportion of people in intervention communities that practise handwashing with soap or an alternative handwashing agent such as ash, and water, disaggregated by sex, disability and wealth ranking	Use of handwashing with soap or alternative agent	Interview with head of household to determine self-reported use of handwashing with soap combined with evidence of use through a structured observation to verify that a handwashing facility with water and soap or alternative agent is present near the toilet.
Outcome indicator 4: Proportion of people in intervention communities that use safe water from newly constructed or rehabilitated systems aggregated by JMP water supply category, sex, disability and wealth ranking	Use of safe water from newly constructed or rehabilitated systems	Interview with head of household to determine the type, accessibility, and availability of the main drinking water source. Review of project records or national standards to determine if the household is located within the catchment of a new or rehabilitated water system. Water quality test of the water supply and household drinking water performed for a subsample of households.
Outcome indicator 5: Proportion of externally verified water safe communities attributed to DFID support that maintain water safe status at least 1 year	Safe water management at the community level	Interview with a water user committee member or caretaker and review of documentation to determine if a water security and security plan is in place and being implemented. Where applicable, observations will be performed at the water point to verify that control measures are being implemented. Water quality tests of household drinking water and supplies will be performed to verify that the water safety plan results in safe water being provided.

<p>Outcome indicator 6: Proportion of intervention schools with students practicing handwashing with soap water after visiting the toilet at least 1 year after intervention</p>	<p>Students practicing handwashing with soap and water at school</p>	<p>Interviews and observation of the handwashing facilities and student handwashing behaviour during breaks or between classes. Interviews will be conducted with students selected randomly from the school roster to assess knowledge of handwashing behaviour and perform demonstration of handwashing.</p>
<p>Outcome indicator 7: Proportion of intervention healthcare facilities with functional basic WASH services at least 1 year after intervention</p>	<p>Functional hand hygiene facilities near points of care and toilets, access to basic sanitation in health care facilities & use of an improved water supply in health care facilities</p>	<p>Observation of toilet facilities and points of care will determine if hand hygiene stations are nearby and functioning at the time of the visit. Observation of toilet facilities will determine if they are functional, meet national standards, and provide at least one toilet designed for women and girls with facilities for menstrual hygiene management and at least one toilet meeting the needs of people with limited mobility. Observation of the water supply at the health facility will determine if it is improved according to JMP definitions and is located on premises. The availability of water at the time of the visit will be assessed as a proxy for use.</p>

2.2 OVERVIEW OF DATA COLLECTED, DATA SOURCES AND DATA COLLECTION METHODS

The phase 2 of the baseline study used **quantitative surveys**: (1) school questionnaire, and (2) health facility questionnaire. The survey questions were developed by UNICEF Water, Sanitation and Hygiene Section and Evaluation Office in New York and piloted in Nepal by Progress Inc. during phase 1 of the baseline data collection. The *ASWA-II, Baseline Survey: Training Guidance and Data Collection Tools*, which can be found in **Annex** was used to guide the survey process. The information was derived from the respondents’ interviews at school and health facilities. Observation at the institutions further informed on the conditions of toilets, water supplies, and hand washing stations. Moreover, at the schools and health facilities, on spot water quality test were conducted for e-coli, arsenic and microbiological bacteria via presence absence (PA) vial. These tests were conducted at the source, and also in the object from which people consume water. At the community level, water quality testing was conducted for e-coli, arsenic, microbiological bacteria via presence absence vial, again through request of drinking object such as glass or bottle and at the source. Additional water was collected at the household level from the selected communities at the source and from the object which was sent to water testing laboratory to conduct further tests. The laboratory tested water for different indicators that included:

Table 2: Parameters for laboratory tests

S.N.	Parameter	Testing Location
1	pH	Laboratory
2	Electric Conductivity	Laboratory

3	Turbidity	Laboratory
4	Taste & Odor	Laboratory
5	Color	Laboratory
6	Hardness	Laboratory
7	Calcium	Laboratory
8	Ammonia	Laboratory
9	Nitrate	Laboratory
10	Fluoride	Laboratory
11	Iron	Laboratory
12	Manganese	Laboratory
13	Arsenic	Field
14	Faecal Coliform/E. Coli	Field
15	Chlorine residual	Laboratory

2.2.1 School Outcome Survey

A total of 50 schools were visited for the survey. The school questionnaire aimed to report on the outcome indicator 6.

Outcome indicator: Proportion of intervention schools with students practicing handwashing with soap water after visiting the toilet at least 1 year after intervention.

A questionnaire (KII) was conducted with a school authority to identify the availability and access of drinking water sources, toilets, and handwashing facilities. The questionnaire was followed by observations of toilets and practice of handwashing among students after usage of toilets. Along with the questionnaire and observation, a water quality test was conducted in the main source of drinking water.

2.2.2 Health Care Facility Outcome Survey

A total of 20 HCF was targeted from within the feasible communities for survey. The HCF survey aligns with outcome 7 of the logframe.

Outcome indicator: Proportion of intervention healthcare facilities with functional basic WASH services at least 1 year after intervention

Similar to the school survey, the healthcare facility survey entailed water facility observation, KII with health post in-charge or concerned representative, and water quality testing. In regards to KII, a questionnaire was administered with the health facility personnel to identify the availability and access of drinking water sources, toilets, and handwashing facilities followed by an observation of toilets and water supply points in the facility. Furthermore, the survey sought information in regards to gender friendly and disabled friendly toilets. Lastly, water supply at the health facility requires to be within the premises meets the improved standards according to JMP definitions.

2.2.3 Water quality testing

Water quality testing was carried out at the 17 communities in sampled households. Water was collected at the source of these sampled households, as well as from the object. E-coli and arsenic tests were carried out at the site while the other parameters were tested in the laboratory.

2.3 SAMPLING APPROACH AND CRITERIA FOR THE SELECTION

2.3.1 Household water quality testing from identified communities

A feasibility study conducted at the inception of this phase, identified 17 communities out of a possible 86 communities for further assessment and collection of baseline information for water testing. For the water quality testing from the identified communities, a sample size of 379 was determined as the sample size. The requirement of the baseline study was to target 20% of the determined sample size (n=76) for the household level water testing. On this note, from the identified 17 communities, an equal proportion of water testing five households in each of the communities was determined to ease the process. On this note, a total of 85 households were selected for water testing across those communities.

The benchmark for the sample size was determined using the following formula:

$$n = \frac{Z^2 \cdot p \cdot (1-p) \cdot N}{(N-1)E^2 + Z^2 \cdot p \cdot (1-p)}$$

Where,

$$p = 1/2 \text{ or } 0.50$$

$$d = 0.105 \text{ reflecting } 5\% \text{ margin of error}$$

$$z = 1.96 \text{ or } 95\%$$

2.3.2 School and health care facility

Similar to the communities, the feasibility study also had identified the low performing schools and health facilities based on the set indicators identified by UNICEF Nepal. One of the conditions of the selection was to ensure that each intervention municipalities/rural municipalities had an institution selected in order to engage the LGs as per agreement with them at the inception phase of the programme. A total of 50 schools and 20 health care facilities were selected for outcome survey. The list of the schools and health care facilities is provided in [Annex](#).

2.4 DATA COLLECTION TOOLS

2.4.1 Brief description of the questionnaires used and surveyor manual

The school, health questionnaires and surveyors' manual were provided by UNICEF HQ, Accelerating Sanitation and Water for All (ASWA II) Baseline Survey Guidance and Questionnaires, Version 1.12 – 28 October 2018.

2.4.2 Adaptations made on the survey questionnaires

Each question from both the school and health facility questionnaire were reviewed individually for relevance and appropriateness for the activities proposed and adapting to Nepal's context. The survey team were guided by the color coding of each question, which identified questions that could be removed or adapted, or if they were core questions. The team decided to keep most questions as much as possible. Modifications that were made were to align with questions from MICS 2014. For example, response categories for language and religion were drawn from the NDHS 2016. The other adaptation made on the

survey questionnaire were the list of potential key informants list at each of the institutions as per the local context. For instance, ‘Director’ was removed as respondent options, and addition of existing job title were inserted.

2.4.3 Translation

The questionnaires were translated into Nepali from English. The translated version was utilized in the piloting of test to test the appropriateness of language with the enumerators. Based on the feedback from the enumerators, required adjustment was made to adapt to the local language. Each Nepali questions was back translated to English by a staff at Progress Inc. to ensure the essence of the question was intact. The finalized Nepali questionnaire was then uploaded into the data collection software KoboTool for survey purpose.

2.4.4 Use of mobile-to-web technology

The data was collected using the mobile-to-web based tool called KoboTool. This open-source software can be found in <https://www.kobotoolbox.org>. The advantages to using KoboTool compared to conventional paper based data collection methods are:

- GPS location of survey can be accessed;
- Automatic skip checks;
- Quick and efficient data collection;
- Exact time of interview conducted can be accessed;
- Consistency checks can be performed when enumerators are in the field;
- Analyzing and archiving data is made simpler.

The tool enables rapid field assessments while minimizing errors and checks, ensuring quality assured data.

2.5 SELECTION, ORGANIZATION, TRAINING AND SIMULATION OF THE SURVEY TEAM

All Kathmandu based enumerators were used for the data collection and water quality testing. It was ensured that the selected enumerators would have familiarity with the WASH sector. Three out of the nine deployed team members were female.

The selection criteria of the enumerators are presented below:

- Enrolled in undergraduate or above
- Data collecting experience through mobile phones
- Ability to speak Nepali as well as local language and dialects
- Good communication and networking skills
- Honesty and dedication
- Adept in using android mobile phone

A three day training was organized in Kathmandu for the enumerators, facilitated by the senior consultants. Though a pre-testing of the tools was conducted in phase 1 by Progress Inc. along with representatives from UNICEF HQ, NCO, ROSA, and representative from other South Asian countries, the training of

phase 2 was followed by conducting a simulation session for the enumerators at Constellation School, Kathmandu. The training and simulation were scheduled in the following locations:

Table 3 Training and Piloting Locations

S.N.	Training/Piloting Location	Dates
1	IDS Nepal, Kathmandu	April 23 – 24, 2019
2	Constellation Boarding School, Kathmandu	April 25, 2019

2.6 IMPLEMENTATION OF THE SURVEY, FIELD SUPERVISION, AND REAL-TIME VERIFICATION OF COLLECTED DATA

The data collection team were organized in four groups of two or three members in each team. Each group was assigned a team leader and provided with an average of four to five communities, and 23 to 25 institutions to obtain baseline data and conduct water quality testing from. At any point during data collection, communication with the senior consultants was made feasible in order to ensure accurate data collection. At the end of each day, data was submitted to the server, and reviewed by the senior consultants and provided immediate feedback in case of any discrepancies in data found. To bolster the quality mechanism, pictures of toilets, water supply, handwashing stations were shared through online services by the enumerators to the senior consultants, who in return would immediately inform on the accuracy. Since data were collected through KoboTool, GPS of majority of the institutions were tracked. GPS was not captured in one instance due to possible climatic condition or mobile device technical failure. However, images from the institutions was obtained to ensure the presence of the enumerators at the location.

2.7 DATA CAPTURE, CLEANING, ANALYSIS, DISAGGREGATION AND REPORTING

The data collection was concluded after assuring that all required list of communities and institutions data was obtained. A debriefing session was conducted with all field enumerators at Progress Inc. After a debriefing session with the enumerators, data was cleaned by one of the senior consultants. Data cleaning involved uniformity of names, community, and supervisor initials. Furthermore, open ended questions were also categorized in brief sentences. At the completion of the cleaning process, the data were analyzed.

The data was analyzed using excel and SPSS 25.0. The existing data in excel was exported to SPSS 25.0, and analyzed using frequencies and cross tabulations as required. In addition to this, excel template provided by UNICEF HQ which consisted the major indicator calculation was also utilized. The excel template was utilized to showcase snapshot of the baseline study, whereas SPSS was used to analyze frequencies and cross tabulations. Excel 2013 was used to illustrate graphs, charts and tables from the analyzed SPSS results. The acquired data from the analysis was categorized in the report template provided by UNICEF HQ.

2.8 ETHICS

The study was conducted in compliance with UNICEF's Procedure in Ethical Standards in Data Gathering Activities. There was no direct interaction with children under 18 years of age. There was informed consent obtained from survey respondents which was recorded on KoboTool. Privacy and anonymity were ensured for all respondents.

All questions were mindful of these parameters and all materials relevant to the interface of the respondents was translated into the local language. No benefit or compensation, either financial or social, were offered to respondents. All data collected was handled in a confidential manner and data was securely stored within Progress Inc.'s server.

2.9 SURVEY LIMITATIONS

2.9.1 Methodological issues/weaknesses

One of the components required to obtain data from was the water supply questionnaire. For each of the 17 communities where water was tested at the household level, an interview was originally slated with a water user committee or community water supply manager. However, this tool could not be conducted at the field level, since none of the communities had a water user committee. Furthermore, given the context of Terai, where majority of the households have private water supply, the questionnaire was irrelevant. The questionnaire was designed for places which had water user committee and/or community schemes which supported households within the community. On this note, if and when water user committees are established or community beneficial schemes are established, then at the midline, the water supply questionnaire could be utilized. On this report, the water quality tests from the households of the selected communities will represent the water supply section.

2.9.2 Logistical constraints affecting the comprehensiveness of survey data and results

Accuracy of the listing of schools and health care facilities needs to be re-organized and ensured. At times, inaccuracy in the names and incorrect locations made enumerators collect data at the wrong location. Furthermore, only 50 schools were selected for the baseline purpose, however, 52 schools were obtained in the baseline. The reason being, the provided list, on two instances included names of two schools within the same table cell of a particular community. To ensure that data was not missed, all listed schools within each of the table cells were collected. This report shows results of the 52 school obtained in the baseline.

Not all schools could be included in the student handwashing observation. Some schools were closed when the enumerators arrived at the schools for data collection and in some schools, no student used toilets in the observation period. Moreover, in schools where there were no toilets or hand washing facility, observation was evidently not possible. 70 per cent of the sampled schools were observed for handwashing of students.

CHAPTER 3: RESULTS ON WASH IN SCHOOLS

3.1 SIZE/POPULATION AND CHARACTERISTICS OF THE SCHOOLS SURVEYED

A total of 52 schools were surveyed for the baseline; the details of which is provided in table below. All the surveyed schools were public schools that operated only on day, there was no hostel provisioned for the students. The survey were conducted mostly with head teachers (61 per cent), followed by teachers (31 per cent), and SMC member (8 per cent).

Table 4: Total number of schools surveyed

Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
52	10	6	7	12	5	7	4	1

Among the surveyed schools, the proportion of girl students was higher than that of boy students (boys: 181; girls: 238), while the ratio of male staff was higher than female staff by 2:1. On average, there were an average of approximately 418 students in each school, with highest in Mahottari (806), and lowest in Siraha (307).

Table 5: Sum and average number of pupil and staff disaggregated by sex

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Average number of boy students	181	132	151	323	168	186	144	208	132
Average number of girl students	238	159	209	483	204	243	182	256	175
Average number of male staff	6	5	5	9	6	5	6	12	4
Average number of female staff	3	2	4	4	2	3	3	4	2
	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum
Total number of boy students	9393	1318	904	2260	2014	930	1005	830	132
Total number of girl students	12356	1594	1252	3380	2442	1215	1273	1025	175
Total number of students	21749	2912	2156	5640	4456	2145	2278	1855	307
Average number of students per school	418	291	359	806	371	429	325	464	307
Total number of male staff	334	53	30	61	71	27	40	48	4
Total number of female staff	156	23	22	27	28	16	23	15	2

3.2 WASH MANAGEMENT ARRANGEMENTS

3.2.1 Students' involvement in child clubs

From the 52 schools, there were 55.8 per cent of the schools with child clubs, however only 19.2 per cent (10 schools) of the schools had child clubs that practiced WASH activities. The remaining 80.8 per cent of the child clubs did not practice any WASH activities. Among the ones that practiced WASH activities all 10 schools cleaned the school compound, and 3 out of 10 held special celebrations. In the interviews none of the interviewee reported to have practiced daily handwashing, or daily tooth brushing activities in school.

Table 6: Child club and WASH activities

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
There is a child club that carries out WASH activities	19.2%	10.0%	16.7%	14.3%	16.7%	40.0%	14.3%	50.0%	0.0%
There is a child club, but no activities related to WASH	36.6%	30.0%	50.0%	14.3%	50.0%	0.0%	71.4%	0.0%	100.0%
No child clubs	44.2%	60.0%	33.3%	71.4%	33.3%	60.0%	14.3%	50.0%	0.0%

3.2.2 Budget for WASH activities and designated person for WASH

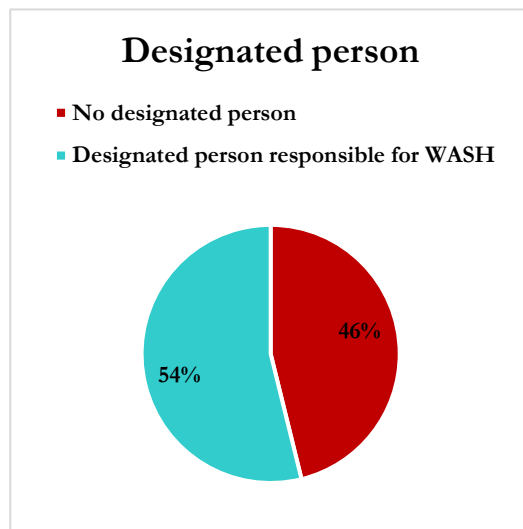


Figure 1: Designated person for WASH activities

None of the schools reported to have budget for water, sanitation and hygiene related expenses, while there were only 6 per cent (3 schools) who reported to have sufficient funds available to cover water, sanitation and hygiene expenses, including large repair if needed. The schools that reported to have sufficient budget was one school from Siraha, and two schools from Dhanusa.

In approximately half the schools surveyed (54 per cent), there was a designated person responsible for ensuring WASH activities. In most of the cases, the head teacher would take the responsibility of ensuring WASH (92.9 per cent), followed by the teacher (14.3 per cent). In ensuring the responsibility of WASH activities, the designated person would ensure that there is water, and soap for handwashing, and the cleaning materials are available.

The proportion of schools with person designated for toilet cleaning was higher at 65.4 per cent. It was further reported that 35 per cent of the schools, toilets were never cleaned, 33 per cent cleaned it less often. There were only 2 per cent of the schools that cleaned the toilet every day, and 11 per cent that cleaned few times a week.

None of the schools practiced daily handwashing or daily tooth brushing activities with all children.

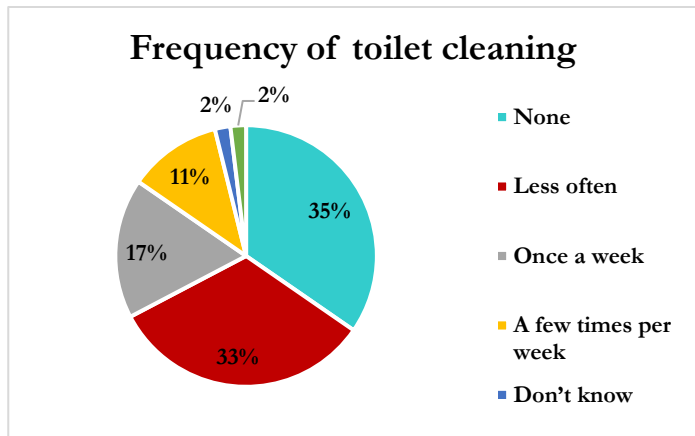


Figure 2: Frequency of toilet cleaning

3.2.3 Management of menstrual hygiene

In terms of managing menstruation of the girl students, three fourth (75 per cent) of the schools had no provision. 15.4 per cent reported that they shared information about menstrual hygiene to the students, while only 7.7 percent were providing menstrual materials when needed, and had facilities for disposal.

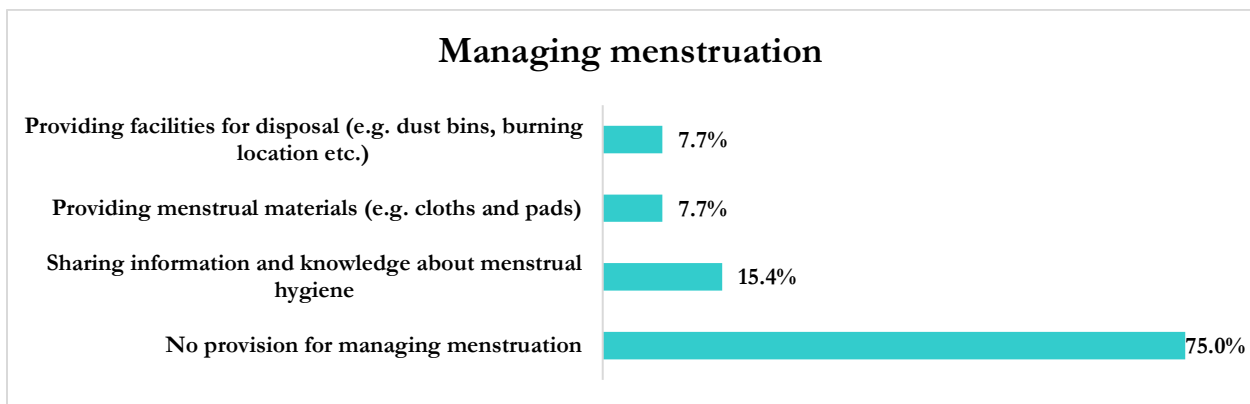


Figure 3: Managing menstruation

In regards to managing menstrual hygiene, most of the schools across the surveyed schools shared information on menstruation. Half the surveyed schools in Sarlahi, one third of the surveyed schools in Dhanusa, and 40 per cent of the surveyed schools in Rautahat, and 28.6 per cent of the surveyed schools in Saptari shared information or knowledge about menstrual hygiene. It was reported that most of the information sharing was from the curriculum that was taught to the students on menstruation. 28.6 per cent of the schools in Mahottari had a facility for disposal, while 20 per cent from Rautahat had disposal facility. One fourth of the schools in Parsa were providing menstrual materials. The data disaggregated as per the schools in each districts for menstruation management is presented in the table below:

Table 7: Menstruation management information disaggregated per districts

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Providing facilities for disposal	7.7%	0.0%	0.0%	28.6%	8.3%	20.0%	0.0%	0.0%	0.0%
Providing menstrual materials	7.7%	0.0%	0.0%	0.0%	25.0%	0.0%	14.3%	0.0%	0.0%
Sharing information about menstrual hygiene	15.4%	0.0%	33.3%	0.0%	0.0%	40.0%	28.6%	50.0%	0.0%

3.2.4 Reporting of WASH parameters in EMIS

The information on WASH parameters were not reported in EMIS system, as it is not yet a requirement to do so. The lobbying for this to be inclusive is yet ongoing.

In the past 12 months, three fourth of the schools had been monitored by the local government. The monitoring was least in case of Rautahat. There were about one third of the schools that were recently supported by other NGOs for water, hygiene, and sanitation.

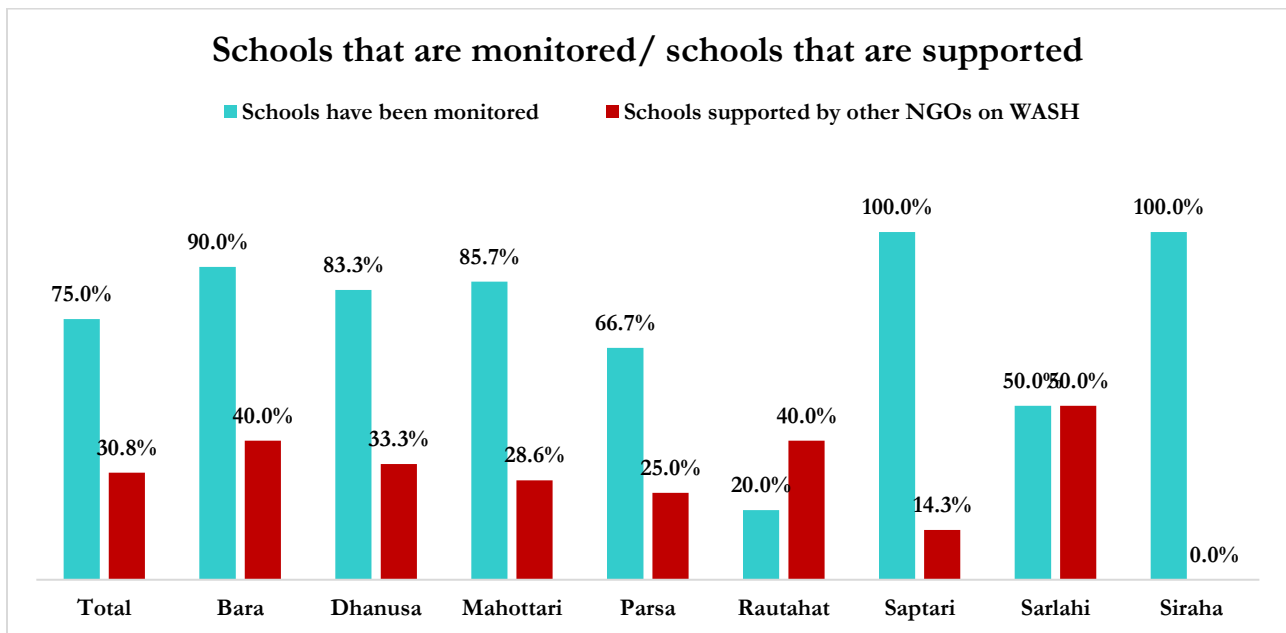


Figure 4: Schools that are monitored and supported

3.3 DRINKING WATER SUPPLY

3.3.1 Access to drinking water and types of water supplies

Majority of the sampled schools (90.4 per cent) had water source for drinking purpose. There were 5 schools (9.6 per cent) that did not have a source of drinking water in their school. All sampled schools in Bara, Saptari, Sarlahi, and Siraha had source of drinking water.

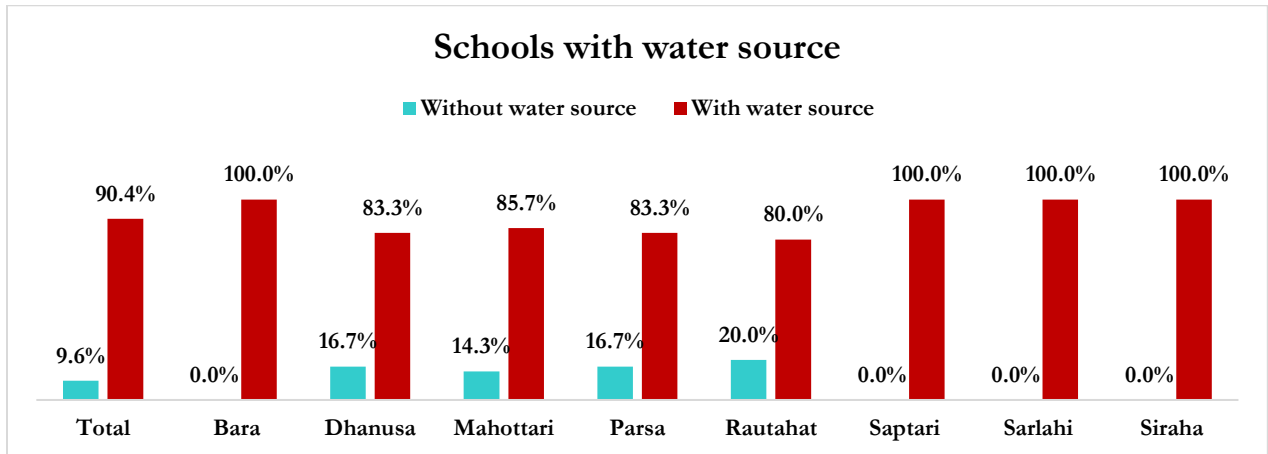


Figure 5: Schools with water source

The same water points were observed to assess the functionality. There were about one tenth (9.6 per cent) of the schools without any source of drinking water, mostly from Rautahat (20 per cent), Dhanusa and Parsa (16.7 per cent each). Nonetheless, it was noted that all the schools had improved source of drinking water. Of the schools that had a water source, all these schools had only one source of drinking water in school, except for one school in Parsa. In the observation it was found that majority of the schools across all districts had tubewell as the main source of drinking water.

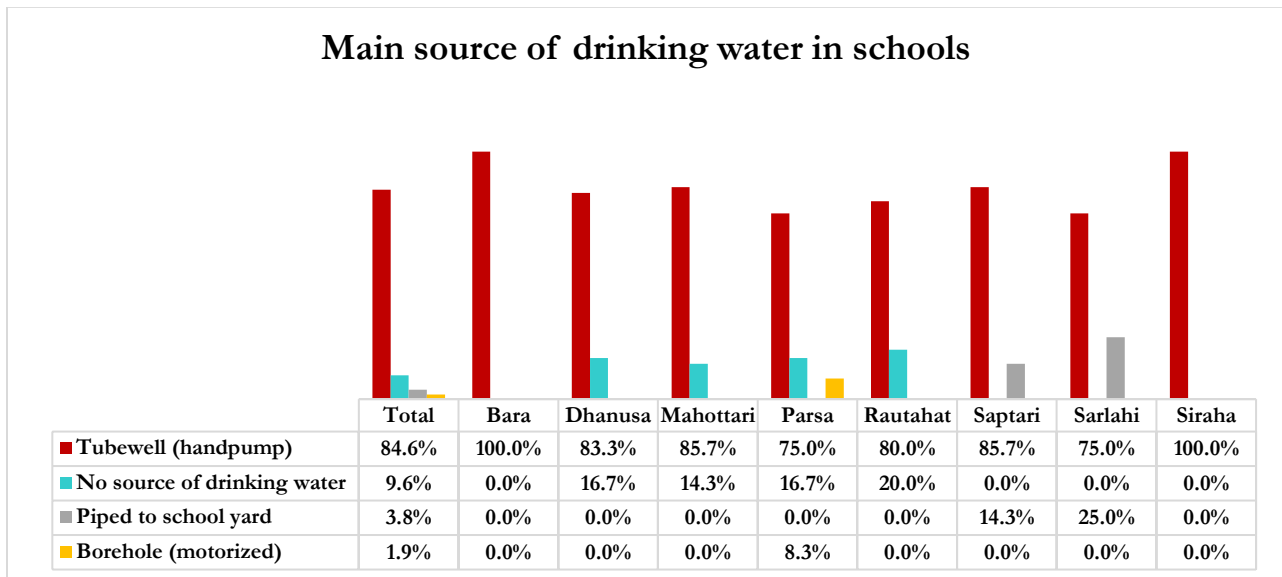


Figure 6: Main source of drinking water

As reported in the interviews, only 3 out of 52 schools (5.8 per cent) treated the water before drinking; and the method of treatment was found to be filtration for all three schools. The students from majority of the schools drank water direct from source without any treatment method.



Figure 7 Piped water in School, Sarlahi



Figure 8 Tubewell as main water source in School

3.3.2 Existence and functionality of drinking water sources

Observation attempted to capture the total number of water sources in the school premises, as well as the ones that were functioning at the time of the survey.

Existing water supply points is the total number of each type of source that is located on the facility grounds. Water is considered functioning (available) if water is available at the facility at the time of the survey or questionnaire, either from the main source directly or stored water originally from the main source.

The table below describes the number of total water supply points and their functioning status in the schools. In total, 76.6 per cent of the existing water sources were functional. The functionality was 100 per cent in the schools of Rautahat, Sarlahi, and Siraha, but only 50 per cent of the schools of Mahottari had existing water functional. On average there was only one water source in each school, except for in Saptari where schools had two water sources.

There was one water point under construction in Shree Shankhar School, Paswan tole in Janakpur.

Table 8: % of functional water sources in schools

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum
Existing water source	77	13	11	12	16	6	11	7	1
Functional water sources	59	9	9	6	11	6	10	7	1
% of functional water source	76.6	69.2	81.8	50.0	68.8	100.0	90.9	100.0	100.0
Average number of functional water sources in each school	1.1	0.9	1.5	0.9	0.9	1.2	1.4	1.8	1



Figure 9 Non-functional water source

3.3.2 Ratio between the number of schoolchildren and the number of drinking water points

Assessing the ratio between the water points, it is found that on average 369 students had one water supply point to drink water from. In Mahottari, the number of students was highest (940) who had as single water point to drink water from, while Dhanusa had the lowest number of students who had to drink water from one point.

Table 9: Number of students accessing water from single water point

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Total number of students	21749	2912	2156	5640	4456	2145	2278	1855	307
Total number of existing	59	9	9	6	11	6	10	7	1
Number of students accessing water from single water point	369	324	240	940	405	358	228	265	307

3.3.3 Drinking water treatment and quality

In assessing if the schools had tested their water for drinking, only 6 out of 52 schools (11.5 per cent) had tested their water for quality. The schools were Hamsa Bahini Basic School, Bara, Shree Secondary School, Dhanusa, Berukhi Madhyamik School, Mahottari, Mahindra Adarsha Mahila School, Mahottari, Public Madhyamik Viklayala, Rautahat, and Shree Umeshwor School, Saptari. Among these 4 schools (66.7 per cent) had all standards compliant with national standards, while one school in Dhanusa reported that water contained Arsenic, and one school did not have access to the result.

3.3.4 Construction of water supply points

In most of the cases, the water supply was constructed by the government (72 per cent); in 15 per cent of the schools water supply was constructed by NGO, and in 11 per cent of the time it was constructed by local community members or school staff themselves. The district disaggregated data is presented in Annex.

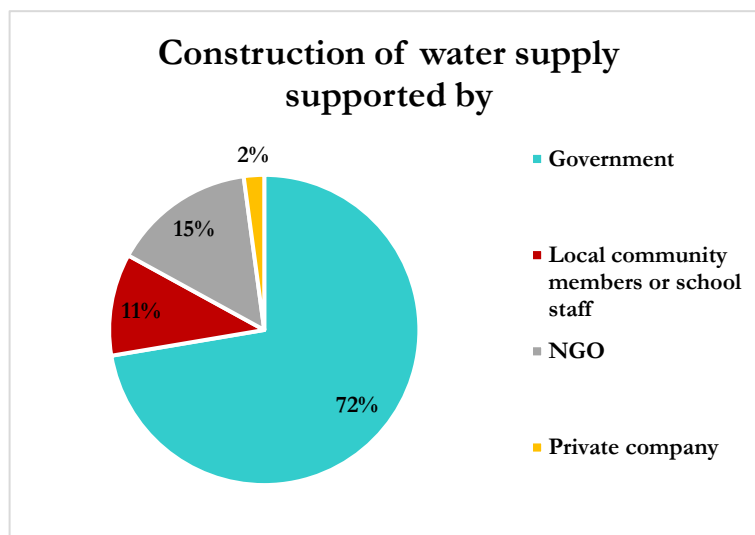


Figure 10: Construction of water supply

3.4 SANITATION AND HYGIENE

3.4.1 Access to toilets and type of toilets

The toilets could be observed in 94.2 per cent of the schools, remaining 3 schools (5.8 per cent) did not have toilets to observe. All the toilets observed were flush pour toilets. On average, there were three toilets that were existing, out of which two were usable.

Assessing the usability of the toilets, it was found that the usability of toilets was 66.7 per cent. The usability was lowest in Siraha (33.3 per cent) and Bara (46.7 per cent) and highest in Rautahat (85.7 per cent), and Sapatari (77.3 per cent).

Table 10: % of usable toilets out of existing toilets

	Existing	Usable	% of usable toilets
Total	177	118	66.7%
Bara	30	14	46.7%
Dhanusa	19	16	53.8%
Mohattari	26	14	53.8%
Parsa	38	26	68.4%
Rautahat	14	12	85.7%
Saptari	22	17	77.3%
Sarlahi	25	18	72.0%
Siraha	3	1	33.3%

The maximum number of usable toilets in schools was 7 and minimum 0. Schools from Dhanusa, Parsa, and Rautahat had maximum of 7 usable toilets.

Table 11: Sum and averages of functional toilets

	Existing number of toilets				Functional number of toilets			
	Mean	Sum	Maximum toilets	Minimum toilets	Mean	Sum	Maximum toilets	Minimum toilets
Total	3.4	177	10	0	2.3	118	7	0
Bara	3.0	30	5	2	1.4	14	4	0
Dhanusa	3.2	19	7	0	2.7	16	7	0
Mohattari	3.7	26	8	2	2.0	14	4	0
Parsa	3.2	38	8	0	2.2	26	7	0
Rautahat	2.8	14	7	1	2.4	12	7	0
Saptari	3.1	22	6	2	2.4	17	5	0
Sarlahi	6.3	25	10	3	4.5	18	7	1
Siraha	3.0	3	3	3	1.0	1	1	1

3.4.2 Toilets for teachers, girls, small children and people with disabilities

Assessing the status of toilet, it was observed that 40.4 per cent had of the schools had at least one toilet for male students, 42.3 per cent had at least one toilet for female students. There were 38.5 per cent of the schools having one male and one female functional toilet, and 67.3 per cent that had either one male or one female functional toilet or one common toilet. Despite the designation of toilets to students, it was deemed that students were barred from using the toilets. Most toilet in the time of observation were asked to be unlocked.

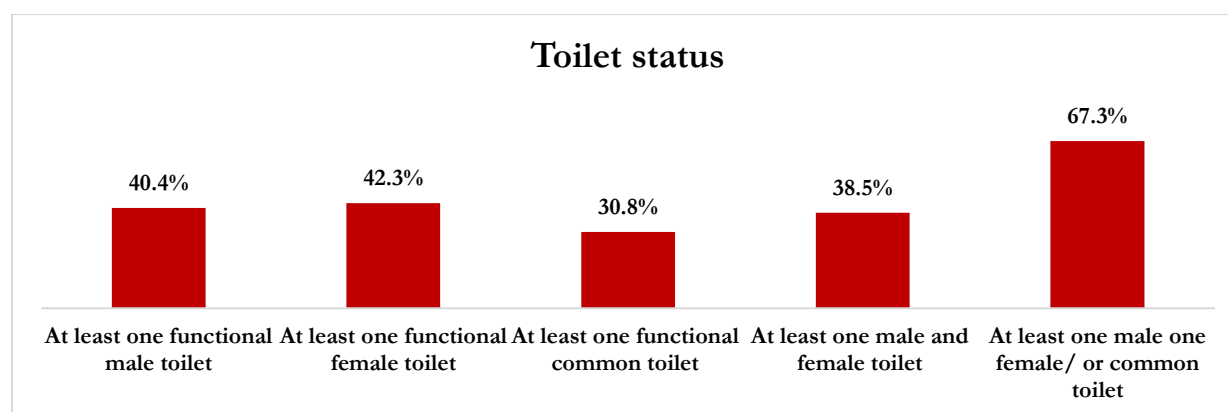


Figure 11: Toilet status

Only 2 schools in Mahottari (3.8 per cent) had at least provisioned for access via a clear path for the children with limited mobility. In spite of this, the surrounding was ill managed, and would create problems for usage by people with disability. There were however no other provisions such as hand bars, enough space for wheel chair et cetera. There were no dustbins provided in the toilets in any of the observed toilets.

3.4.3 Ratio between the number of school children (boys and girls) and the number of toilets

The table below presents the overall toilet ratio. On average, 250 students had one toilet to use. The toilet ratio was highest in Mahottari where 627 students had one toilet to use and lowest in Sarlahi where 143 students had a single toilet to use. There was no toilet facility for students in Siraha.

Table 12: Ratio of toilets and total students

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Total number of students	21749	2912	2156	5640	4456	2145	2278	1855	307
Total number of usable toilets	87	12	10	9	21	9	13	13	0
Overall toilet ratio	250	243	216	627	212	238	175	143	-

Furthermore, in assessing the toilet ratio for male and female students, it was seen that on average, 177 male students had one toilet to access and 217 girls had one toilet to access. In Siraha there was no toilet for either male or female students. The ratio of male and female toilets is presented in table below:

Table 13: Ratio of male and female toilets with male and female students

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum
Toilets for male students (male only and common)	53	9	6	9	11	6	7	5	0
Total male student	9393	1318	904	2260	2014	930	1005	830	132
Male toilet student ratio	177	146	151	251	183	155	144	166	0
Toilets for female students (female only and common)	57	9	4	8	13	7	8	8	0
Total female students	12356	1594	1252	3380	2442	1215	1273	1025	175
Female toilets students ratio	217	177	313	423	188	174	159	128	0

3.4.4 Use of toilets and evidence/practice of open defecation

Observation sought to assess open defecation in and around the school. It was noted that in about half the schools (46.2 per cent) there was evidence of animal defecation, in about one fourth of the schools (28.8 per cent) there was evidence of both human and animal defecation. This was observed in schools where access to toilets was limited to students. Some resorted to defecating in the urinals or in the open. About two third (67.4 per cent) of the schools were free of open defecation.

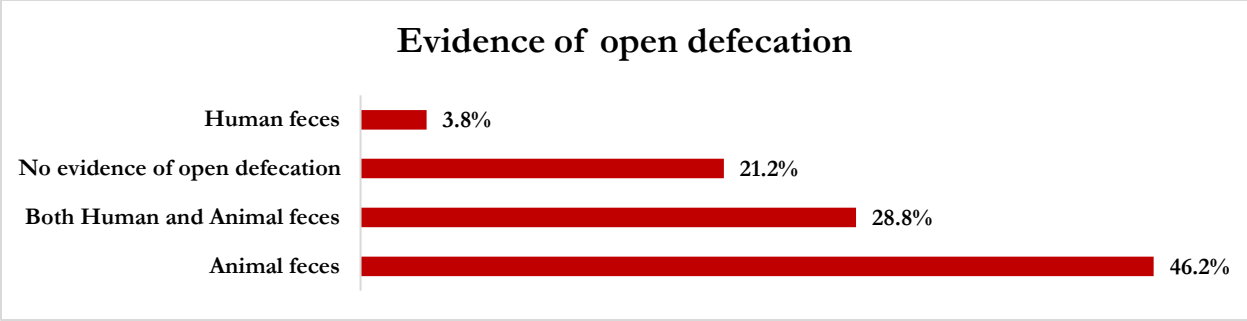


Figure 12: Evidence of open defecation

Observation showed that schools in Dhanusa, Rautahat, and Sarlahi were free of open defecation, while all schools in Siraha had evidence of human defecation. Interestingly, all the schools from Rautahat and Sarlahi had evidence of animal faeces, but no evidence of human faeces. Similarly, 71.4 per cent schools in Saptari showed no evidence of animal or human defecation. The detailed status of open defecation in the schools of eight districts is presented in table below:

Table 14: Status of open defecation as per the districts

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Animal feces	46.2%	50.0%	66.7%	14.3%	41.7%	100.0%	0.0%	100.0%	0.0%
Both Human and Animal feces	28.8%	50.0%	0.0%	14.3%	50.0%	0.0%	28.6%	0.0%	100.0%
Human feces	3.8%	0.0%	0.0%	14.3%	8.3%	0.0%	0.0%	0.0%	0.0%
No evidence of defecation from human or animal	21.2%	0.0%	33.3%	57.1%	0.0%	0.0%	71.4%	0.0%	0.0%
Free from open defecation (human faeces)	67.3%	50%	100%	71.4%	41.7%	100%	71.4%	100%	0.0%

3.4.5 Menstrual hygiene management

In regards to the management of menstrual hygiene materials, observation attempted to capture how the girl students disposed their sanitary pads: Placed in latrine pit | Placed in other open pit | Burnt in open pit | Burnt in incinerator | Buried | Placed in separate garbage bag / dust bin in the toilet or elsewhere. Results showed that one school in Mahottari (1.8 per cent) had provision of open burning, two schools (3.6 per cent) had provision of incinerator, four schools (7.7 per cent) buried the pads, while the 73.1 per cent reported that girls managed the pad themselves.

To assess if the toilets had facility of soap and water in the girls' cubicle, it was found that there was only one toilet where there was provision of soap and water in girls' cubicle, while in nine other schools (17.3 per cent) there was only provision of water. In defense, some of the schools reported that soaps would go missing immediately after provisioning it in the cubicles, hence some of the management kept it within their offices.

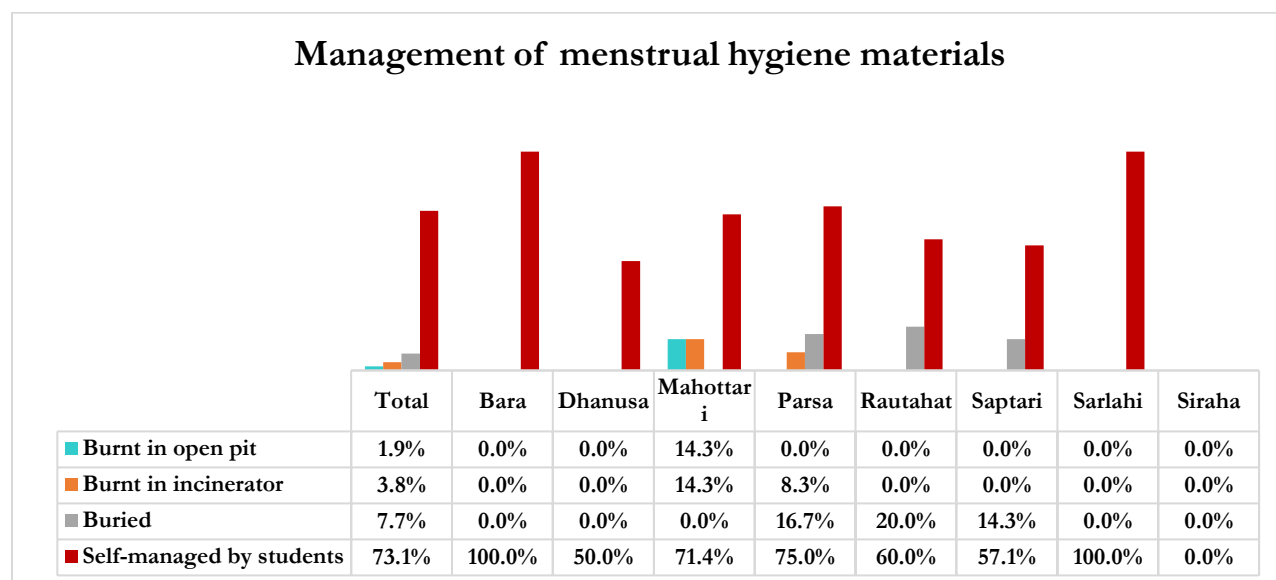


Figure 13: Management of menstrual hygiene materials

3.4.6 Presence of handwashing stations

In majority of the schools (86.5 per cent) there was a presence of handwashing facility. It should, however, be noted that in many cases, the same source that is being used for drinking water is used as a handwashing facility. All the schools from Saptari, Sarlahi, and Siraha had provision of handwashing facility.

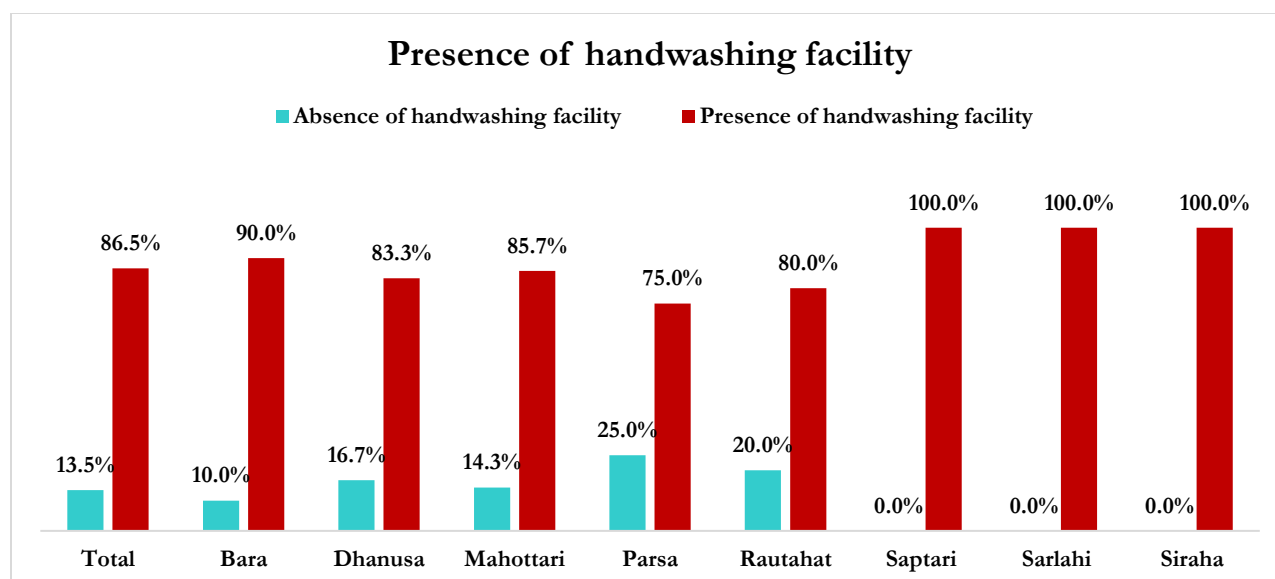


Figure 14: Presence of handwashing facility

Results further highlighted that 36.5 per cent of the schools had handwashing facility within 5 meters of toilets or latrine blocks, while 42.3 per cent did not have handwashing facility near the toilet. Moreover, 13.5 per cent had no handwashing facility at all.

Table 15: Location of handwashing station

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Yes, all toilet or latrine blocks are located within 5 meters of toilet	36.5%	20.0%	33.3%	28.6%	41.7%	20.0%	57.1%	50.0%	100.0%
Yes, some but not all toilet or latrine blocks are located within 5 meters of toilet	7.7%	0.0%	16.7%	28.6%	0.0%	0.0%	0.0%	25.0%	0.0%
Handwashing facility is not located within 5 meters of toilet	42.3%	70.0%	33.3%	28.6%	33.3%	60.0%	42.9%	25.0%	0.0%
No handwashing facility at all	13.5%	10.0%	16.7%	14.3%	25.0%	20.0%	0.0%	0.0%	0.0%

All the handwashing facilities were located in the school yard. In all these handwashing facilities, there was provision of water, however only 13 per cent had provision of soap.

3.4.7 Practice of individual handwashing after toilet use

A total of 189 students were observed from all schools. The table below shows the details of girls and boys students observed from each school.

Table 16: Number of students observed for handwashing

	Bara	Dhanusha	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Girls	14	19	10	10	6	44	3	1
Boys	7	18	4	12	2	35	2	2
Total	21	37	14	22	8	79	5	3

The handwashing practice was observed with the intent to see if the students washed their hands with water and soap, after using toilets. Results showed that only 31 per cent of the total students observed, washed their hands with water after using the toilet. The highest practice of handwashing with water was found in Dhanusa (46 per cent), followed by Saptari (39 per cent), and no handwashing was practiced in Mahottari, and Sapatari. A total of 189 students (107 girls and 82 boys) were observed across 36 schools.

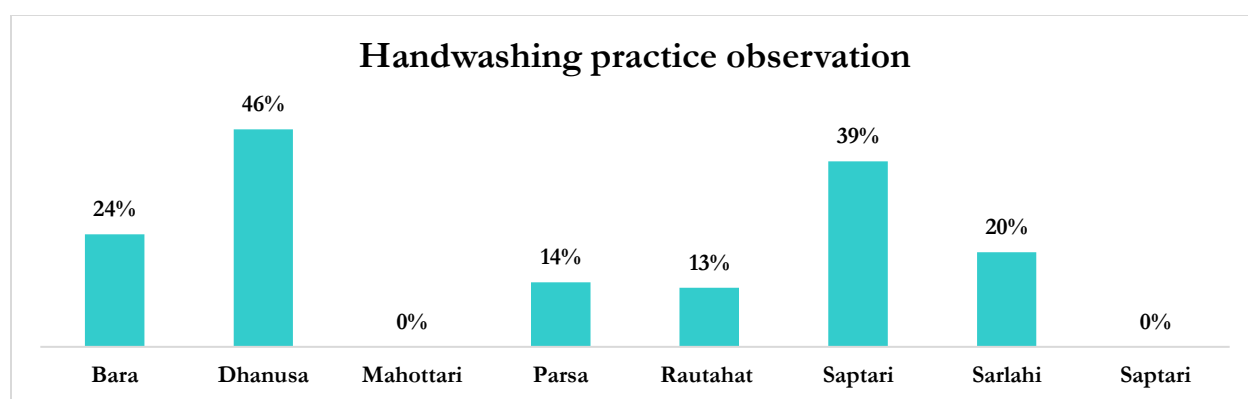


Figure 15: Handwashing practice observation

None of the students used soap to wash their hands. One major reason for this was attributable to the fact that majority of the schools did not have soap (as explained earlier only 13 per cent of the handfacility had provision of soap) in their handwashing facilities that could be used by the students.

Overall School Indicator

PROPORTION OF SCHOOLS WHERE TOILETS ARE USED CONSISTENTLY BY ALL CHILDREN, INCLUDING GIRLS AND STUDENTS WITH DISABILITIES	0%
Definition: Number of usable toilets is at least one for Boys and Girls or at least one for Mixed/common, and the toilets are accessible to people with disabilities	
PROPORTION OF SCHOOLS THAT ARE FREE OF OPEN DEFECATION IN AND AROUND THE SCHOOL YARD	67%
Definition: No evidence of human faeces in school ground	
PROPORTION OF SCHOOLS USING AN IMPROVED WATER FACILITY	85%
Definition: Number functional is at least 1 in any of the following rows: piped into building, piped to school yard, public tap / standpipe, water kiosk, borehole, tubewell, protected dug well, protected spring, rainwater, tanker truck	



**CHAPTER 4: RESULTS ON WASH IN
HEALTH CARE FACILITIES**

4.1 SIZE/POPULATION AND CHARACTERISTICS OF HCFs SURVEYED

A total of 20 HCF were surveyed from across eight districts in Province 2. The highest number of HCF were taken from Dhanusa and Mahottari (4 HCF each), while only one HCF were taken from Rautahat and Bara, respectively. All the HCF visited were government owned health post with fixed structure that provided basic daytime outpatient service.

Table 17: No. of HCF sampled from each district

Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
20	1	4	4	2	1	3	3	2

The HCF representatives were enquired about the details of the population/ or households the HCF catered to. The details of the population of catchment area in each district is presented the table below. In order to understand the average household size to of the households in these areas, reference from the baseline Phase I has been taken. Data shows that the highest catchment area of the HCF was of Dhanusa. The details of each HCF is presented on Annex.

Table 18: Total HH or population in catchment area

	Persons (in population)	Households	Average family (household size) ¹	Persons (as per average household size)
	Mean	Mean		
Bara	-	250	8.62	2155
Dhanusa	11000	1300	7.06	9178
Mahottari	-	500	7.12	3560
Parsa	-	630	8.11	5109
Rautahat	-	500	7.83	3915
Saptari	7667	-	7.72	-
Sarlahi	-	737	6.56	4835
Siraha	5000	-	6.16	-

It was reported that on average the health facility was open for 26 days in the previous month. There was an average of 5 male staff and 3 female staff in these HCF, catering to the average of 32 patients per day (out of which 62% were reported to be female patients). The HCFs could not provide a data on female patient from the registers, but made an empirical call on reporting on the proportion of female patients. The district disaggregated details is presented in the Table 16.

¹ Referenced from ASWA II baseline Phase 1, household survey

Table 19: Staff and outpatient detail

	Total	Bara	Dhanusa	Mahottari	Parsa	Rauta hat	Saptari	Sarlahi	Siraha
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
No. of days facility was open in the previous month	26	26	26	26	26	26	26	26	26
Male staff members in HCF	5	4	7	3	8	4	6	5	4
Female staff members in HCF	3	1	3	3	4	1	2	3	2
Number of outpatients number per day	32	45	30	35	35	20	22	40	28
Percentage of females outpatients	62	60	63	64	63	60	62	63	60

Five out of 20 HCFs had recently been supported by an NGO or another partner for water, sanitation or hygiene; the remaining 15 were denied of any kind of WASH support. The HCFs that were supported by NGOs were:

- Digambarpur HP, Dhanusa
- Bhatauliya HP, Mahottari
- Kishanagar HP
- Mahottari, Padariya HP, Sarlahi
- Khoriya HP, Sarlahi.

4.2 WASH MANAGEMENT ARRANGEMENTS

4.2.1 WASH designated person

Findings from HCF survey revealed that only 35 per cent (7 out of 20) HCF has a designated person responsible to carry out activities related to water, sanitation and hygiene, like ensuring repairs of the water point, the toilets and the handwashing stations, and providing soap and other consumables. In all the 7 HCF, the person responsible was the in-charge of the health post. The number was slightly higher for designated person responsible for toilet cleaning (45 per cent).

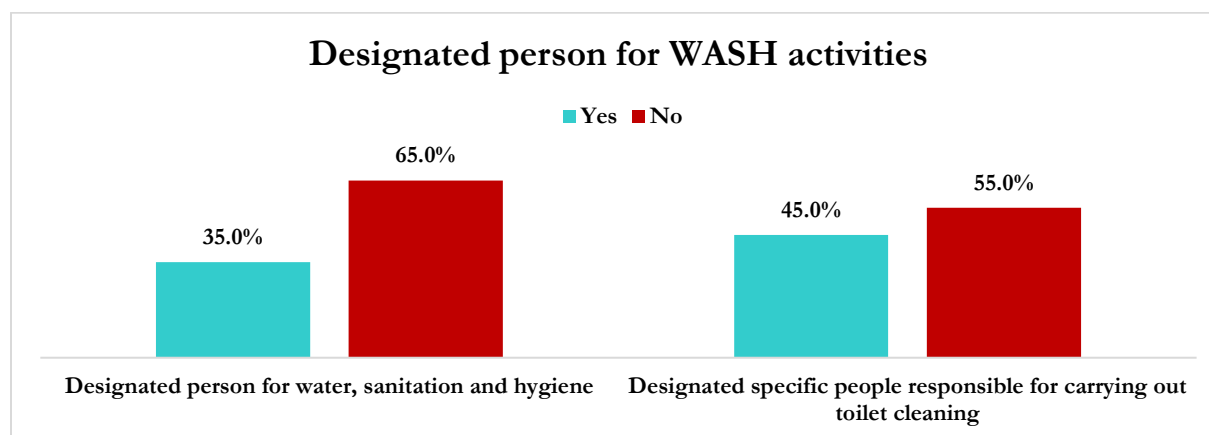


Figure 16: Designated person responsible for WASH

Table 20: Designated person for WASH district-wise

		Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Designated person responsible for water, sanitation and hygiene	No	1	2	4	2	0	3	0	1
	Yes	0	2	0	0	1	0	3	1
	Total	1	4	4	2	1	3	3	2
Designated person responsible for toilet cleaning	No	1	3	2	0	1	3	0	1
	Yes	0	1	2	2	0	0	3	1
	Total	1	4	4	2	1	3	3	2
Total number of HCF	Total	1	4	4	2	1	3	3	2

4.2.2 Frequency of toilet cleaning

More than half the HCF surveyed did not have a provision to clean the toilet (55 percent). In one fourth of the HCF, toilets were cleaned one fourth of the time (few times per week). Only 5 per cent of the HCF cleaned toilets every day. The HCF that reported to clean toilet everyday was from Sarlahi. The HCF of Bara had not cleaned the toilet ever.

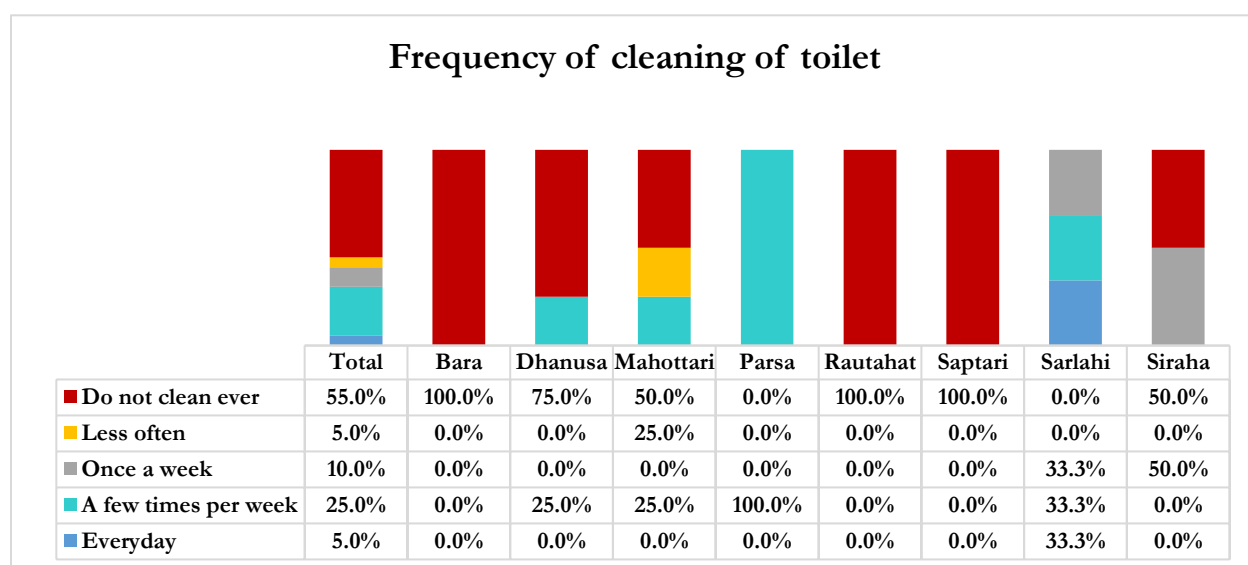


Figure 17: Frequency of cleaning a toilet

4.3 DRINKING WATER SUPPLY

4.3.1 Access to drinking water supplies and type of water supplies

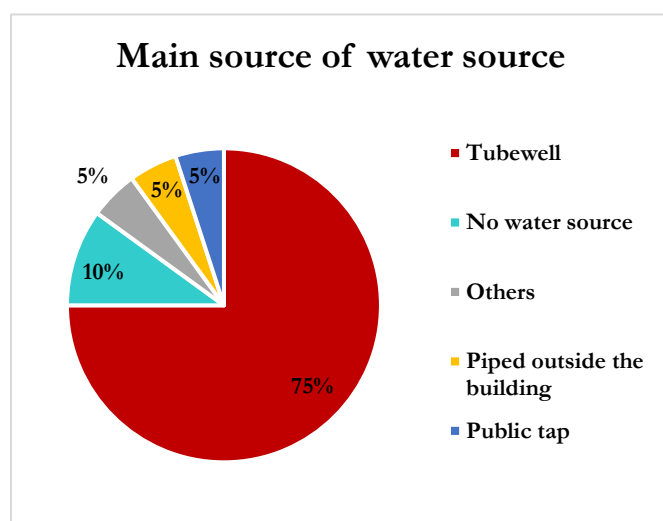


Figure 18: Main source of drinking water

Across all districts, the water supply of the HCFs was constructed by the government. There were two HCFs in Mahottari that did not have water supply at all. All the observed HCFs had a water source apart from two HCFs in Mahottari: Kishannagar and Dhirapur health posts. The primary source of water was tubewell among three fourth (75 per cent) of the HCFs. There was two health posts with piped water as main source, while for one health post public tap was the main source. It should be noted that all HCF that had a water source had improved source of drinking water.

Table 21: Main source of water disaggregated by districts

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
No water source	10%	0%	0%	50%	0%	0%	0%	0%	0%
Tubewell	75%	100%	75%	50%	100%	100%	100%	66.7%	50%
Piped outside the building	5%	0%	25%	0%	0%	0%	0%	0%	0%
Public tap	5%	0%	0%	0%	0%	0%	0%	0%	50%
Others (Jar water)	5%	0%	0%	0%	0%	0%	0%	33.3%	0%
Total number of HCF	20	1	4	4	2	1	3	3	2

Other than the main source, there were HCFs where there were more than one water sources. The assessment of the overall water sources showed that majority of the health posts had tubewell while piped water was also a form of water source among 23.2 per cent of the HCFs. Public tap and unprotected dug-well was a source among 5.6 per cent of the HCF, respectively.

Table 22: Types of water sources

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Public tap / standpipe	5.6%	0%	0%	0%	0%	0%	0%	0%	50%
Unprotected dug well	5.6%	0%	25%	0%	0%	0%	0%	0%	0%
Other	5.6%	0%	0%	0%	0%	0%	0%	33.3%	0.0%
Piped inside the building	11.1%	0%	0%	0%	50%	0%	0%	33.3%	0.0%
Piped outside the building	11.1%	0%	25%	50%	0%	0%	0%	0%	0%
Tubewell	88.9%	100%	75%	100%	100%	100%	100%	100%	50%

Despite the fact that all HCFs had improved water source as main source of drinking, there were few HCFs that did not have water sources within the premises. 85 per cent of the HCF had improved water supply on premises of the health facility. Observation of the HCFs showed that only one HCF was under construction at the time of baseline (Basahiya HP, Dhanusa).

Improved water sources are categorized as: piped supply inside, piped supply outside, tubewell, borehole, protected dug well, protected spring, rainwater, tanker truck.

4.3.2 Drinking water treatment and quality

In assessing the water treatment method in these HCFs, it was reported that only 30 per cent of the HCFs practiced water treatment, while the remaining did not treat the water for consumption. One HCF in Bara, Mahottari, Dhanusa, and three in Sarlahi practiced water treatment. The health posts (HP) that practiced water treatment are:

- Nagar Health Post, Bara
- Hariharpur Health Post, Dhanusa
- Khoriya Health Post, Sarlahi
- Nagar Health Center, Sarlahi
- Padariya Health Post, Sarlahi
- Batauliya Health Post, Mahottari

Among the HCFs that reported to treat their water, all of them practiced filtration as a method of treatment. There were no other treatment methods adopted by the HCFs.

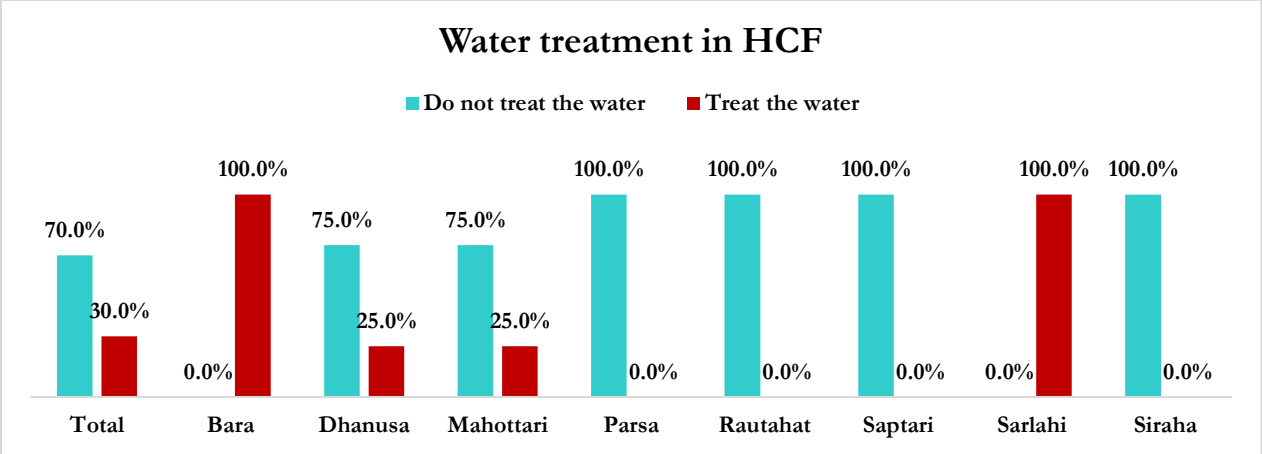


Figure 19: Water treatment in HCF

4.3.3 Budget for WASH

None of the HCFs reported to have budget for WASH activities. In assessing if the HCFs had sufficient funds available to cover water, sanitation and hygiene expenses, including large repair if needed based on their past experience, 15 per cent reported that they had sufficient funds, despite the fact that they did not have separate budget for WASH related activities.

Table 23: Sufficient funds for WASH activities (based on the past experience)

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Have sufficient funds for WASH activities	15.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%
Do not have sufficient funds for WASH activities	85.0%	100.0%	50.0%	100.0%	100.0%	100.0%	100.0%	100.0%	50.0%
Total number of HCF	20	1	4	4	2	1	3	3	2

None of the HCFs reported information on WASH indicators to health management information system (HMIS). Findings highlighted that there were no parameters in HMIS that asked for status of WASH in HCF. Only 3 out of 20 HCFs (15 per cent) were inspected/ monitored by the local government in the last 12 months signaling lack of interest from the government side. Only one HCF from Mahottari, Parsa, and Sarlahi was monitored by the local government in the past 12 months.

4.3.4 Existence and availability of water supply points

The existence and availability of water supply points were observed by the researchers. Total number of water supply points, irrespective of the availability of water were taken note of. Additionally, out of the total water supply points, the ones where water was available were also noted.

Existing water supply points is the total number of each type of source that is located on the facility grounds. Water is considered functioning (available) if water is available at the facility at the time of the survey or questionnaire, either from the main source directly or stored water originally from the main source.

The table below describes the number of total water supply points and their functioning status in each of the HCF. The functionality was 100 per cent in HCF of Brar, Mahottari, Rautahat, Sarlahi, and Siraha.

Table 24: % of functional water sources in HCF

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum	Sum
Total existing	29	1	5	3	8	1	4	5	2
Water supply with water available	23	1	3	3	6	1	2	5	2
% of water supply with water available	79.3	100	60	100	75	100	50	100	100

4.4 SANITATION AND HYGIENE

4.4.1 Availability of toilets and type of toilets

In total 65 per cent of the sampled HCFs had toilets. There were no toilets in HCF visited in Bara and Rautahat. All the HCFs that had toilets had flush pour toilets, while all three HCF sampled from Sarlahi and two HCF from Siraha had toilets.

Table 25: % of HCF with toilets

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
HCF with toilets	65%	0%	50%	50%	100%	0%	66.7%	100%	100%
Total number of HCF visited	20	1	4	4	2	1	3	3	2

Out of the total number of existing toilets, only 60 per cent were functional. On average, the sampled HCFs had only one toilet. The average numbers of toilet in the HCF disaggregated as per districts is presented in table below. As mentioned earlier, there were no toilets in the HCF visited in Bara, and Rautahat.

Table 26: Average number of toilets in HCF

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Number of Flush / pour-flush toilets	1.3	0	1.3	0.75	2.5	0	1	2	2

Survey also assessed if the toilets were located within or outside of the HCF grounds, results showed that most of the toilets were located outside the building of HCF but within the grounds of the facility (45 per cent), followed by 15 per cent that had toilets; some located inside the facility building and some located

outside the facility but within the grounds of facility. Only 5 per cent of the HCFs had toilets inside the facility.

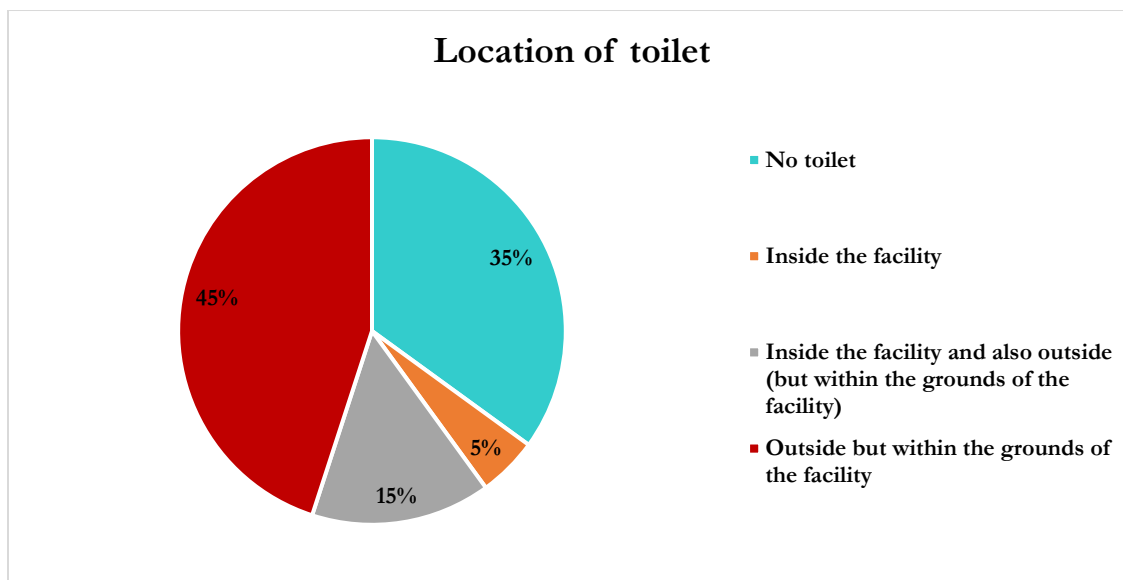


Figure 20: Location of toilet

4.4.2 Functionality and Usability of toilets

The baseline observed the toilets in each HCF to assess if those were usable.

To be considered usable, a toilet should be accessible, functional and should provide sufficient privacy for users. In a functional toilet the hole or pit should not be blocked, water should be available for flush/pour flush toilets, and there should be no cracks, or leaks in the toilet structure. In order to provide sufficient privacy, the toilet stall should have walls without major holes, and a door which is unlocked when not in use (or for which a key is available at any time) and which can be locked from the inside during use.

Findings showed that on average there were 1.3 existing toilets and 1 toilet that met the aforementioned criteria of being usable.

Table 27: Average of existing toilets versus useable toilets

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Total existing	1.3	0.0	1.3	0.8	2.5	0.0	1.0	2.0	2.0
Useable toilets	1.0	0.0	0.5	0.8	2.5	0.0	0.7	1.7	1.0

Table 28: Existing and usable number of toilets

	Existing toilets				Usable toilets			
	Mean	Sum	Maximum	Minimum	Mean	Sum	Maximum	Minimum
Bara	0	0	0	0	0	0	0	0
Dhanusa	1	5	3	0	1	2	1	0
Mohattari	1	3	2	0	1	3	2	0
Parsa	3	5	3	2	3	5	3	2
Rautahat	0	0	0	0	0	0	0	0
Saptari	1	3	2	0	1	2	1	0
Sarlahi	2	6	3	1	2	5	3	1
Siraha	2	4	2	2	1	2	2	0

As per the aforementioned definition of toilets being 'usable', 60 per cent of the HCFs had at least one toilet irrespective of it being dedicated for male, female, or staff that was usable in the HCF. 40 per cent HCF did not have at least one usable toilet, 35 per cent had one toilet that was usable, 15 per cent had two toilets, and 10 per cent had three toilets that was usable.

Table 29: At least one usable toilet in HCF

Male/ Female/ Common/ Or Staff	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
No toilet	40%	100%	50%	50%	0%	100%	33.3%	0%	50%
One toilet	35%	0%	50%	25%	0%	0%	66.7%	66.7%	0%
Two toilets	15%	0%	0%	25%	50%	0%	0%	0%	50%
Three toilets	10%	0%	0%	0%	50%	0%	0%	33.3%	0%

The survey also attempted to see if there were any toilets in these HCFs that catered to the specific needs of women for menstruation. Study showed that 20 per cent of the HCF had separate toilets for girls and women, 45 per cent did not have a separate toilet for girls, and 35 per cent did not have toilets at all.

Table 30: Separate toilets for girls and women

	Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Yes, separate toilet for girls	20%	0%	25%	25%	50%	0.0%	33.3%	0%	0%
No girls toilet	45%	0%	25%	25%	50%	0%	33.3%	100%	100%
No toilet	35%	100%	50%	50%	0%	100%	33.3%	0%	0%

It was found that there were no toilets that was designated for women and girls having:

- Waste bin with lid is provided within the cubicle (for disposal of menstrual hygiene materials)
- Private space is available for washing
- Water and soap available in the private space for washing

Moreover, there were not a single toilet that was accessible to people with limited mobility.

The toilets that would meet the criteria of catering to people with limited mobility would include: access via a clear path without stairs or steps, handrails attached to either the floor or sidewalls for support, enough space inside for a wheelchair user to enter, turn, close the door and park by the toilet, door wide enough for a wheelchair (at least 80 cm) and opens outward with minimal or no difference in door height between outside and inside, door handle and seat within reach of people using wheelchairs or crutches/sticks

Concerning the open defecation status, the tools did not capture the aspect of outpatients making use of the toilet, or evidence of open defecation in and around the facility grounds.

4.4.3 Presence and location of handwashing facility

Availability of handwashing was assessed near the toilet facility, as well as at the point of care.

Points of care are any location in the outpatient setting where care or treatment is delivered (i.e. consultation/exam rooms).

Handwashing Facility in or near toilets

As mentioned earlier, there were 65 per cent of the HCFs with at least one toilet. In 76.9 per cent of the HCFs with toilet, there was a presence of handwashing facility.

Table 31: Presence of handwashing facility near toilets

	No toilet		There is toilet	
	Count	%	Count	%
No presence of handwashing facility	7	100.0%	3	23.1%
Presence of handwashing facility	0	0.0%	10	76.9%

None of the HCFs visited had a place of handwashing available within 5 meters of toilet. Only three out of 20 (15 per cent) was available to the outpatients, while the remaining was only accessible to staff. Half

of the handwashing facilities had provision of water, while only 10 per cent had provision of soap. There were no HCFs with gel hand sanitizers.

Table 32: Handwashing facilities near toilet

	Place of handwashing	Available to outpatients	Availability of water	Availability of soap	Availability of gel hand sanitizer
Count	10	3	10	2	0
%	50%	15%	50%	10%	0%

The baseline indicators attempts to capture the number of HCFs with handwashing facilities within 5 meters of the toilet, availability of water and soap/ or sanitizer. It was found that there were no handwashing facilities that met the criteria.

Handwashing facilities near point of care

Furthermore, survey attempted to capture the availability of handwashing facility for the outpatient at the point of care, that had a provision of water, and soap/ or sanitizer. Findings showed that 70 per cent of the HCFs had handwashing facilities at point of care as opposed to 50 per cent near toilets.

Table 33: Availability of handwashing facility near POC

	Total	Bara	Dhanusa	Mahottari	Parsa	Parsa	Saptari	Sarlahi	Siraha
Availability of handwashing facility	70%	0%	100%	50%	50%	0%	100%	67%	100%
No handwashing facility at POC	30%	100%	0%	50%	50%	100%	0%	33%	0%

None of these handwashing facilities were available to the outpatients and was used only by the staff. There was provision of water in 70 per cent of the handwashing facilities at POC, and soap in 40 per cent of handwashing facility in POC.

Table 34: Handwashing facilities near POC

	Place of handwashing	Available to outpatients	Availability of water	Availability of soap	Availability of gel hand sanitizer
Count	14	0	14	8	1
%	70%	0%	70%	40%	5%

4.4.4 Management of solid waste

The survey attempted to understand the management of waste, and sharp objects in the HCFs. In regards to the segregation of waste in HCFs, it was found that in 75 per cent of the HCFs, sharp objects had a separate bin. Similarly, 65 per cent of the HCFs had a separate bin for infectious waste. Only 30 per cent of the HCFs had bins color coded, and one fourth HCFs had separate bin for non-infectious general waste. There were one fourth of the HCFs without any waste bins. The details of district disaggregated data is presented in Annex.

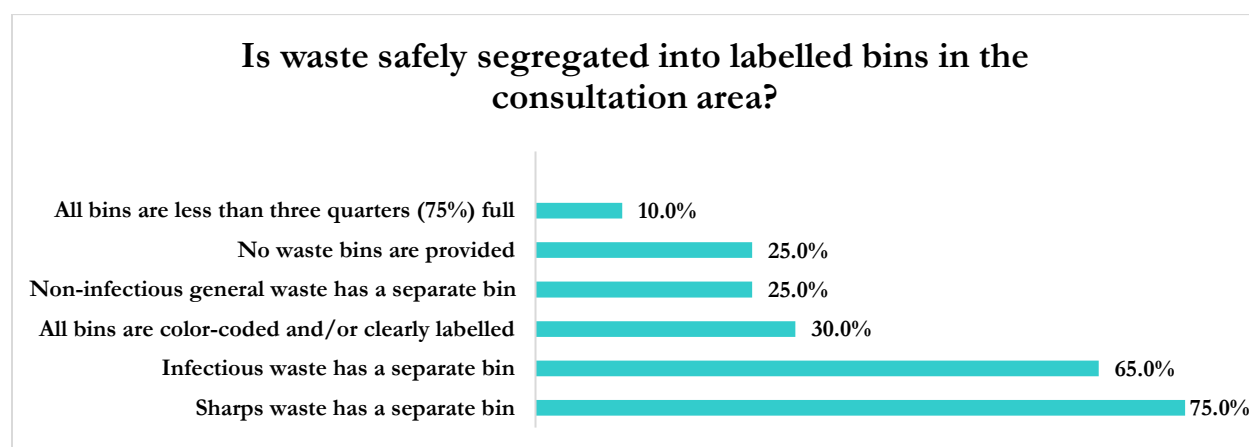


Figure 21: Segregation of waste

Table 35: Segregation of wastes as per districts

	Total	Bara	Dhanusa	Mahottari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
Sharps waste has a separate bin	75%	0%	100%	75%	50%	0%	100%	67%	100%
Infectious waste has a separate bin	65%	0%	100%	25%	50%	0%	100%	67%	100%
Non-infectious general waste has a separate bin	25%	0%	75%	0%	0%	0%	33%	33%	0%
All bins are color-coded and/or clearly labelled	30%	0%	25%	75%	50%	0%	0%	33%	0%
All bins are less than three quarters (75%) full	10%	0%	0%	25%	50%	0%	0%	0%	0%
No waste bins are provided	25%	100%	0%	25%	50%	100%	0%	33%	0%

80 per cent of the HCFs practiced open burning to deal with infectious wastes, while only 10 per cent buried the waste. Similarly, in case of dealing with sharp waste, again 70 per cent practiced open burning, while 25 per cent used autoclave. None of the HCFs reported that they maintained waste records.



Figure 22: HCFs dealing with infectious waste and sharp needles

Overall HCF Indicators Result

PROPORTION OF HEALTH CARE FACILITIES HAVING FUNCTIONAL HANDWASHING STATIONS NEAR POINTS OF CARE & TOILETS

Definition:

- Functional handwashing stations (available to outpatients, with water and soap/gel hand sanitizer) are located within 5 meters of: 0%
- Toilets
- Points of care

PROPORTION OF HEALTH CARE FACILITIES WITH BASIC SANITATION/TOILETS

Definition:

- At least one improved toilet is usable, accessible, functional, private, and clean 0%
- At least one usable improved toilet is designated for women and girls and provides a bin for menstrual hygiene materials, private space for washing with water and soap available
- At least one usable improved toilet meets the needs of people with reduced mobility

PROPORTION OF HEALTH CARE FACILITIES THAT USE AN IMPROVED WATER SUPPLY LOCATED ON PREMISES

Definition:

- At least one improved water supply with water available (piped inside/outside building, tubewell, borehole, protected dug well/spring, rainwater, tanker truck) 85%
- Located on premises

**CHAPTER 5: COMMUNITY,
SCHOOL, AND HEALTH FACILITY
WATER SUPPLY**

5.1 COMMUNITY WATER QUALITY TESTING

A total of 17 communities from 12 municipalities/rural municipalities across Province 2 were selected for water quality testing. From each of the communities, using a systematic interval, five households were selected for water testing. None of these communities had an existing water user committee. In Mahottari, in Paswan Tole, only communal water source was available, hence, data for individual household main water source is missing. Below are highlighted the number of communities selected for the water quality testing sampling where water was tested for presence of arsenic and e-coli.

Table 36 Selected Communities for Water Testing

Total	Bara	Dhanusa	Mohattari	Parsa	Rautahat	Saptari	Sarlahi	Siraha
17	3	2	2	2	2	2	3	1

Sample from the source as well as object shows that apart from 7.2 per cent of the houses from the community, all had presence of E. Coli with 75.9 per cent accuracy. Arsenal was present on more than half the proportion of households in the community. The table below presents the presence of E.Coli and arsenic in water collected from source and in object is presented below:

Table 37: Presence of E. Coli in water collected from source and object in the community

	E. Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	12	38	45	77	166
% age	7.2%	22.9%	27.1%	46.4%	

Table 38: Presence of arsenic in water collected from source and object in the community

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	67	42	12	0	30ppb
% age	40.4%	25.3%	7.2%	0.0%	

5.1.1 Community water testing results

Main Source at household

Results from across 81 households from the 17 sampled communities showed that the minimal level of arsenic was found in 42 per cent of the households in the community. 33.3 per cent had arsenic level of 0-10 ppb, while, 8.6 per cent had arsenic level of 11-50 ppb. Tubewell was the main source of drinking water among all households. The highest arsenic ppb (30 ppb) was reported in one household in Jagarnathpur of Parsa.

Table 39: Presence of arsenic in water collected from source in the community

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	47	27	7	0	30ppb
% age	58.0%	33.3%	8.6%	0.0%	

E-coli count was detected in 88.9 per cent of the sampled main sources. In almost half of the sampled sources (45.7%), e-coli count was reported at the highest count of 101. The colony count test was 67.9 per cent accurate. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. The details of the water testing results from the households of 17 communities are presented in table below:

Table 40: Presence of E.Coli in water collected from source in the community

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	9	19	22	37	81
% age	11.11%	23.46%	27.16%	45.68%	

Table 41: Water testing results in sampled households from selected communities

HH	District	Municipality	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	Bara	Kalaiya	Kati Parsa	20	101	Black
2				10	101	Black
3				10	101	Black
4				20	101	Black
5				10	101	Black
6			0	101	Black	
7			20	101	Black	
8		Dhanuk Dalit		0	40	Other
9				10	15	Other
10				10	101	Black
11		Mahagadimai	Inarwa	10	101	Black
12				0	101	Other
13				0	101	Black
14				20	29	Other
15				0	101	Black
16	Dhanusha	Kshireswor	Kadmahi Mushari	0	101	Black
17				0	1	Black
18				0	0	Other
19				0	0	Other
20				0	0	Other
21			Hanspur		0	101
22		0			2	Black

23				0	16	Black
24				0	2	Black
25				0	101	Black
26	Mahottari	Matihani	Kathbiniya	0	101	Black
27		Loharpatti	Pasman tole	0	101	Black
28				0	101	Black
29				0	101	Black
30				0	101	Black
31				0	101	Black
32	Parsa	Jagarnathpur	Pipardadi	20	101	Black
33				10	101	Black
34				30	30	Other
35				5	101	Black
36				5	30	Other
37		Bindwasni	Thulo Jhauwa	5	101	Black
38				0	101	Black
39				5	40	Other
40				10	50	Other
41				5	101	Black
42				Rautahat	Gaur	Musar Tole
43	0	12	Other			
44	5	12	Other			
45	5	18	Black			
46	0	4	Other			
47	Ishnath	Jathara	0		25	Black
48			0		57	Black
49			0		32	Black
50			0		101	Black
51			0		18	Other
52	Saptari	Kanchanrup	Sada tole	0	1	Other
53				0	2	Black
54				0	2	Black
55				0	1	Other
56				0	2	Black
57		Sardar & Ram tole	0	3	Black	
58			0	5	Black	
59			0	0	Other	
60			0	0	Other	
61			0	0	Other	
62	Sarlahi	Haripur	Chitaing tole	5	0	Other
63				5	101	Black
64				5	80	Black
65				5	60	Other
66				5	0	Other
67		Chakkarghata	Dhanak tole	5	3	Other
68				0	2	Other
69				5	101	Black
70				10	101	Black

71				0	80	Black
72			Ram tole	10	101	Black
73				10	101	Black
74				20	101	Black
75				0	101	Black
76				5	60	Black
77	Siraha	Naraha	Musahari Devipuri	0	0	Other
78				0	17	Black
79				0	13	Black
80				0	101	Black
81				0	101	Black

Drinking object at household

All 85 targeted households from the 17 communities had water quality test performed from drinking object such as bottle or glass. In 23.5 per cent of the households, no arsenic was detected. In 17.6 per cent low arsenic within the range of 0-10 ppb was detected. The highest were which was 20 ppb was observed in Kalaiya and Mahagadimai of Bara, Jagarnathpur of Parsa, and Ram Tole in Chakkarghata of Sarlahi. Tubewell were observed across all the households as main source of drinking water.

Table 42: Presence of arsenic in water collected from object in the community

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	20	15	5	0	20 ppb
% age	23.5%	17.6%	5.9%	0.0%	

E. Coli colony count was detected at 96.5 per cent of the sampled households with 83.5 per cent accuracy. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. Similar to the source tested, almost half (47 per cent) had the highest count of e-coli at 101.

Table 43: Presence of E.Coli in water collected from object in the community

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	3	19	23	40	85
% age	3.5%	22.4%	27.1%	47.1%	

Table 44: Water testing results in sampled households (from object) from selected communities

HH	District	Municipality	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	Bara	Kalaiya	Kati Parsa	20	101	Black
2				10	101	Black
3				5	101	Black

4				20	101	Black
5				10	101	Black
6			Dhanuk Dalit	0	101	Black
7				20	101	Black
8				0	35	Other
9				10	101	Black
10				10	101	Black
11		Mahagadimai	Inarwa	10	101	Black
12				0	101	Other
13				0	101	Black
14				20	40	Other
15				0	101	Black
16	Dhanusha	Kshireswor	Kadmahi Mushari	0	101	Black
17				0	3	Black
18				0	5	Black
19				0	15	Black
20				0	0	Other
21			0	101	Black	
22			0	4	Black	
23			0	51	Black	
24			0	64	Black	
25			0	9	Black	
26	Mahottari	Matihani	Kathbiniya	0	32	Black
27				0	101	Black
28				0	101	Black
29				0	48	Black
30				0	101	Black
31		Loharpatti	Pasman tole	0	101	Black
32				0	7	Other
33				0	101	Black
34				0	8	Other
35				0	101	Black
36	Parsa	Jagarnathpur	Pipardadi	20	101	Black
37				10	101	Black
38				30	40	Other
39				5	101	Black
40				5	30	Other
41		Bindwasni	Thulo Jhauwa	5	101	Black
42				0	101	Black
43				5	45	Other
44				10	50	Other

45				5	101	Black
46	Rautahat	Gaur	Musar Tole	10	65	Black
47				0	12	Other
48				5	10	Black
49				5	15	Black
50				0	4	Other
51		Ishnath	Jathara	0	2	Other
52				0	14	Black
53				0	22	Black
54				0	2	Other
55				0	101	Black
56	Saptari	Kanchanrup	Sada Tole	0	8	Black
57				0	101	Black
58				0	10	Black
59				0	5	Black
60				0	14	Black
61			Sardar & Ram Tole	0	101	Black
62				0	19	Black
63				0	26	Black
64				0	1	Black
65				0	101	Black
66	Sarlahi	Haripur	Chitaing tole	5	0	Other
67				5	101	Black
68				5	80	Black
69				5	50	Black
70				5	0	Other
71		Chakkarghata	Dhanak tole	5	1	Other
72				0	2	Black
73				5	101	Black
74				10	101	Black
75				0	80	Black
76			Ram tole	10	101	Black
77				10	101	Black
78				20	101	Black
79				0	101	Black
80				5	60	Black
81	Siraha	Naraha	Musahari Devipuri	0	101	Black
82				0	101	Black
83				0	9	Black
84				0	7	Black
85				0	5	Black

5.2 SCHOOL WATER QUALITY TESTING

A total of 52 schools were visited for the study. The schools that were not captured for the water quality testing were due to unavailability of water or a water source. In some schools, where it was reported that students and other school members drank from the nearby community or self-brought by students from home, a random close-by household from the school was sampled. E-coli and arsenic test were conducted at both main source and from drinking object. In the case there was no drinking object like bottle, glass, and where water was consumed directly from source, water was obtained from the hand of the students for testing. Sample from the source as well as object from schools shows that apart from 8.6 per cent of the schools, 91.4 per cent of water from schools had presence of E. Coli with 79.5 per cent accuracy. Arsenic was present on 41.9 per cent of the sampled water collected from school. The table below presents the presence of E.Coli and Arsenic at source and object of schools.

Table 45: Presence of E.Coli at source and in object of schools

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	8	13	37	35	93
% age	8.6%	14.0%	39.8%	37.6%	

Table 46: Presence of Arsenic at source and in object of school

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	54	36	3	0	40ppb
% age	58.1%	38.7%	3.2%	0.0%	

5.2.1 School water testing results

Main source at school

More than half the schools (58.7 per cent) were not found to have arsenic. In 39.1 per cent the level of arsenic found was 0-10, while only 2.2 per cent had arsenic count of 11-50 ppb. The highest arsenic ppb was found to be 40 ppb in Shree Gyan Jyoti School in Bara. In Parsa, seven out of the nine sampled schools showed presence of arsenic and in all sampled schools of Rautahat, arsenic was observed ranging from 5-10 ppb.

Table 47: Presence of arsenic at source in schools

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	27	18	1	0	40 ppb
% age	58.7%	39.1%	2.2%	0.0%	

84.8 per cent (n=39) of the sampled schools were found to have E.Coli with accuracy of 82.6 per cent. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. Test showed that 36.9 per cent had colony count of more than 100, while 39.1 per cent had colony count of 11-100. The details of the water test from the main source in sampled schools is presented in table below:

Table 48: E.Coli count in source of schools

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	7	4	18	17	46
% age	15.22%	8.70%	39.13%	36.96%	

Table 49: Water testing in main source in schools

SN	School	District	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	Shree Gyan Jyoti S	Bara	Kati Parsa	40	101	Black
2	Nepal Rastriya HSS		Dhanuk Dalit	0	101	Black
3	Hamsha Bahini BS		Pipariya	0	101	Black
4	Nepal Rastriya BS		Dhawa Tole	10	15	Other
5	Nepal Rastriya PS		Ganganagar	0	35	Other
6	Nepal Rastriya PS		Jhawani	0	101	Black
7	Shree Ram Kabir PS		Murki	10	101	Black
8	Nepal Rastriya Umesh Nilam BS		Pathara	10	101	Black
9	Shree ram Janaki PS		Inarwa	0	15	Other
10	Shree Nepal rastriya BS		Chaudhari Tole	0	25	Other
11	Shree sankhar BS	Dhanus ha	Paswan tole	0	29	Black
12	Shree Rastriya PS		Sada tole	0	0	Other
13	Shree Rastriya PS		Mushari Tole	0	8	Black
14	Shree Madyamik S		Deuri	0	22	Black
15	Shree bhumika		Kap Tole	0	12	Black
16	Shree Rastriya PS		Katwa tole	0	0	Other
17	Nepal Rastriya PS	Mahotta ri	Kathbiniya	0	0	Other
18	Berukhi		Pasman	0	101	Black
19	Mahila BS		Jaleswor Paschim	0	15	Black
20	Nepal Rastriya PS		Domdusadha	0	8	Black
21	Nepal Rastriya BS		Ajarmapati	0	5	Black
22	Shree Radha Krishna Nepal Rastriya PS	Parsa	Satnariya	5	65	Other
23	Shree kali prasad lakhe SS		Langadi	10	101	Black
24	Shree Nepal Rastriya PS (1st)		Hariharpur	5	101	Black
25	Bhramhadevi PS		Kohadi	0	95	Black
26	Bahahi Baal Niketan BS		Kohadi	5	101	Black
27	Shree Nepal Rastriya BS		Basdilwa	0	90	Black

28	Shree Bhagawati Nepal Rastriya S		Gardaul	10	101	Black
29	Shree Ram SS		Thulo Jhauwa	5	101	Black
30	Koilavar BS		Manawa Brahmachari Tari	5	101	Black
31	Primary school	Rauthahut	Mahawadpur	10	35	Other
32	Shree Madyamik S		Gurali	5	101	Black
33	Shree PS		Damariya	5	32	Black
34	Shree BS		Jathora	5	101	Black
35	Shree Rastriya BS	Saptari	Sada tole	0	0	Other
36	Shree Rastriya BS		Sardar & Ram Tole	0	3	Black
37	Public MB		launiya	0	101	Black
38	Shree Umeshwor BS		Launiya	0	101	Black
39	Rastriya PS		yadav Tole	0	0	Other
40	Janata Rastriya Girls S		Mahari tole	0	53	Black
41	Shree Nepal Rastriya PS		Sada tole	0	17	Black
42	Shree Devi J. SS	Sarlahi	Majhi Tole	5	30	Black
43	Laxmi Nath PS		Chitaing	5	0	Other
44	Shree Ram Janaki S		ram tole	10	30	Other
45	Janata SS		Dhanuk tole	5	18	Other
46	Shree Adharvhut S	Siraha	Musahari Devipur	0	0	Other

Drinking object at school

In 47 schools water quality test was performed from drinking objects. Results showed that 57.4 per cent of water collected from object did not have arsenic, while remaining the 42.6 per cent had minimal level of arsenic present. 38.3 per cent had arsenic level of 0-10. Similarly aligning with the results from the main source result, Shree Gyan Jyoti School in Bara reported to have the highest arsenic at 40 ppb. In all sampled school of Rautahat, arsenic was present, though it was again at minimal level.

Table 50: Presence of arsenic in water collected from object at school

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	27	18	2	0	40 ppb
% age	57.4%	38.3%	4.3%	0.0%	

Barring Laxmi Nath Primary School in Sarlahi, all the other schools had e-coli present. The PA vial showed that three fourth (74.5%) of the schools had presence of e-coli with the accuracy of 76.5 per cent. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. In 38.3 per cent of the schools, e-coli colony count was observed at 101. In only three schools (5.7%), Janata School in Sarlahi, Bhagawati Nepal Rastriya School in Parsa, and Shree Madhyamik School in Rautahat had reported to have filtration. During observation, it was revealed that the filtration had not been effectively utilized at the schools, hence the result still showing presence of e-coli and arsenic.

Table 51: Presence of E. Coli in water collected from object at school

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	1	9	19	18	47
% age	2.1%	19.1%	40.4%	38.3%	

Table 52: Water testing in drinking object in schools

SN	School	District	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	Shree Gyan Jyoti S	Bara	Kati Parsa	40	101	Black
2	Nepal Rastriya HSS		Dhanuk Dalit	0	101	Black
3	Hamsha Bahini BS		Pipariya	0	101	Other
4	Nepal Rastriya BS		Dhawa Tole	10	20	Other
5	Nepal Rastriya PS		Ganganagar	0	40	Black
6	Nepal Rastriya PS		Jhawani	0	101	Black
7	Shree Ram Kabir PS		Murki	10	101	Black
8	Nepal Rastriya Umesh Nilam BS		Pathara	20	101	Black
9	Shree ram Janaki PS		Inarwa	0	22	Other
10	Shree Nepal rastriya BS		Chaudhari Tole	0	28	Other
11	shree Sankhar BS	Dhanus ha	Paswan tole	0	41	Black
12	Shree Rastriya PS		Sada tole	0	45	Black
13	Shree Rastriya PS		Mushari Tole	0	19	Black
14	Shree Madyamik S		Deuri	0	101	Black
15	Shree bhumika		Kap Tole	0	14	Black
16	Shree Rastriya PS		Katwa tole	0	9	Black
17	Nepal Rastriya PS	Mahotta ri	Kathbiniya	0	3	Black
18	Berukhi		Pasman	0	18	Black
19	Mahila BS		Jaleswor Paschim	0	8	Black
20	Nepal Rastriya PS		Domdusadha	0	3	Black
21	Nepal Rastriya BS		Ajarmapati	0	2	Black
22	Shree Radha Krishna Nepal Rastriya PS	Parsa	Satnariya	5	60	Black
23	Shree kali prasad lakhe SS		Langadi	10	101	Black
24	Shree Nepal Rastriya PS (1st)		Hariharpur	5	101	Black
25	Bhramhadevi PS		Kohadi	0	80	Other
26	Bahahi Baal Niketan BS		Kohadi	5	101	Black
27	Shree Nepal Rastriya BS		Basdilwa	0	80	Black
28	Shree Bhagawati Nepal Rastriya S		Gardaul	10	101	Black
29	Shree Ram SS		Thulo Jhauwa	5	101	Black
30	Koilavar BS		Manawa Brahmachari Tari	5	101	Black

31	Primary school	Rautahat	Mahawadpur	10	35	Other
32	Shree M. v		Gurali	5	101	Black
33	Shree PS		Damariya	5	30	Other
34	Shree BS		Jathora	5	101	Black
35	Chandiya Shree PS		Chandiya	5	20	Other
36	Shree Rastriya BS	Saptari	Sada tole	0	101	Black
37	Shree Rastriya BS		Sardar & Ram Tole	0	5	Black
38	Public MB		launiya	0	12	Black
39	Shree Umeshwor BS		launiya	0	101	Black
40	Rastriya PS		yadav Tole	0	6	Black
41	Janata Rastriya Girls S		Mahari tole	0	6	Black
42	Shree Nepal Rastriya PS		Sada tole	0	101	Black
43	Shree Devi J. SS	Sarlahi	Majhi Tole	5	25	Other
44	Laxmi Nath PS		Chitaing	5	0	Other
45	Shree Ram Janaki S		ram tole	10	25	Other
46	Janata SS		Dhanuk tole	5	8	Other
47	Shree Adharvhut S	Siraha	Musahari Devipur	0	28	Black

5.3 HEALTH CARE FACILITY WATER QUALITY TESTING

20 health facilities were visited for water testing. One health facility could not be captured in the test as it did not have any water source. Sample from the source as well as object from health facility shows that apart from 75 per cent water collected from health facility had presence of E. Coli with 75 per cent accuracy. Arsenal was present on 19.8 per cent of the sampled water collected from school. The details of the results on E.Coli test and arsenic test of the water collected from source and in object is presented in table below:

Table 53: Presence of E.Coli in water collected from source and object at health facility

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	9	9	13	5	36
% age	25.0%	25.0%	36.1%	13.9%	

Table 54: Presence of arsenic in water collected from source and object at health facility

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	29	4	3	0	20ppb
% age	80.6%	11.1%	8.3%	0.0%	

5.3.1 Health care facility water testing results

Main source at health care facility

From the 20 selected health facility for the study, 19 were tested for water quality. Arsenic was found in less than one fourth (21%) of the facilities. The highest arsenic ppb was observed in City health post in Parsa Kati community of Bara at 20 ppb.

Table 55: Presence of arsenic in water collected from source at health facility

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	15	3	1	0	20 ppb
% age	78.9%	15.8%	5.3%	0.0%	

In almost three fourth (73.7%) of the facilities, e-coli count was present with 78.9 per cent accuracy. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. Maximum (101 count) e-coli presence was found in 15.8 per cent of the health facilities including, Tulsipur health post, Siraha, Digampur health post, Dhanusha, and City health post, Bara.

Table 56: Presence of E.Coli in water collected from source at health facility

	E. Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	5	5	6	3	19
% age	26.32%	26.32%	31.58%	15.79%	

Table 57: Water test results in main source in HCF

SN	Health Post	District	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	City HP	Bara	Parsa Kati	20	101	Black
2	Aurhi Sub HP	Dhanusha	Kap Tole	0	81	Black
3	Digambarpur HP		Ikshapur	0	101	Black
4	Hariharpur HP		Hariharpur	0	5	Black
5	Kishannagar HP		Kishannagar	0	3	Black
6	Dhirapur HP	Mahottari	Thulo Dhirapur	0	8	Black
7	Majaori Bisanpur HP		Bisanpur	0	15	Black
8	Bhatauliya HP		Ekdara	0	0	Other
9	Langadi HP	Parsa	Dhobini	10	45	Other
10	Jhauwaghuti HP		Thulo Jauwa	0	20	Other
11	Saraha HP	Rautahat	Mahamadpur	0	32	Other
12	Jagatpur HP	Saptari	Sada Tole	0	5	Black
13	Dharampur HP		Sardar/Ram Tole	0	0	Other
14	Dumri Shivasthan Sub HP		Muslim Tole	0	3	Black
15	Padariya HP	Sarlahi	Dhanuk Tole	0	20	Other
16	Khoriya HP		Ram Tole	10	0	Other
17	City HP		Yadav Tole	10	0	Other
18	Tulsipur HP	Siraha	Tulsipur Chamar	0	101	Black
19	Devipur HP		Musahari Devipur	0	0	Other

Drinking object at health care facility

In three health facilities (17.6 per cent), water tested from drinking object contained arsenic. Arsenic was detected in City health post, Bara, Langadi health post, Parsa, and Khoriya health post, Sarlahi. In Bara and Parsa, arsenic was detected highest at 20 ppb.

Table 58: Presence of arsenic in water collected from source at health facility

	Arsenic level (ppb)				Maximum level (ppb)
	0	0-10	11-50	>50 ppb	
Number	14	1	2	0	20 ppb
% age	82.4%	5.9%	11.8%	0.0%	

In over three fourth (76.5%), e-coli was reported with 70.5 per cent accuracy. The test was deemed accurate if the count was more than one in e-coli test and PA vial showed black, or if the count was zero and PA vial showed other color. 11.8 per cent of the health facilities including City health post, Bara and Majaori Bisanpur, Mahottari having the highest count of e-coli at 101. About 30 per cent (n=6) of the health facilities were observed to have filtration system. Once again, some facilities were observed to not have used them at all.

Table 59: Presence of E.Coli in water collected from object at health facility

	E.Coli Colony Count per 100 ml				Total Sample
	0	0-10	11-100	101-1000	
Number	4	4	7	2	17
% age	23.5%	23.5%	41.2%	11.8%	

Table 60: Water test results in drinking object in HCF

SN	Health Post	District	Community	Arsenic (ppb)	E-coli (count)	PA Vial
1	City HP	Bara	Parsa Kati	20	101	Black
2	Basahiya HP	Dhanusha	Sada Tole	0	31	Black
3	Aurhi Sub HP		Kap Tole	0	64	Black
4	Digambarpur HP		Ikshapur	0	7	Black
5	Hariharpur HP		Hariharpur	0	23	Black
6	Majaori Bisanpur HP	Mahottari	Bisanpur	0	101	Black
7	Bhatauliya HP		Ajarmarpati	0	5	Other
8	Langadi HP	Parsa	Dhobini	20	30	Other
9	Jhauwaghuti HP		Thulo Jauwa	0	20	Other
10	Sarahi HP	Rautahat	Mohandpur	0	30	Other
11	Dharampur HP	Saptari	Sardar/Ram Tole	0	0	Other
12	Dumri Shivasthan Sub HP		Muslim Tole	0	4	Black
13	Padariya HP	Sarlahi	Dhanuk Tole	0	20	Other
14	Khoriya HP		Ram Tole	10	0	Other
15	City HP		Yadav Tole	0	0	Other
16	Tulsipur HP	Siraha	Tulsipur Chamar	0	9	Black
17	Devipur HP		Musahari Devipur	0	0	Other



CHAPTER 6: CONCLUSION AND IMPLICATIONS

6.1 SUMMARY OF THE FINDINGS

Baseline status showed that 67 per cent of the toilets in schools were in usable that could be accessed by both male and female students. All the schools had improved flush toilet. The toilets were not completely accessible to students with disabilities as it lacked provisions that are required to cater to disabled students. In observation, animal faeces were observed more than that of human faeces. In assessing the usability and accessibility of toilets for all students, including students with disability, it was found that 35 out of 52 schools (67 per cent) were usable, but none were accessible to students with disabilities.

	Value for indicator	Numerator	Denominator
Total - Indicator 6a: Proportion of schools where toilets are used consistently by all children, including girls and students with disabilities	0%	0	52

Assessing the situation of open defecation in and around the school yard, it was found that 67 per cent of the schools were free from open defecation.

	Value for indicator	Numerator	Denominator
Total - Indicator 6b: Proportion of schools that are free of open defecation in and around the school yard	67%	35	52

Data shows that all the schools with access to water sources had improved sources for drinking water. Majority of the sampled schools (90.4 per cent) had water source for drinking purpose. There were 5 schools (9.6 per cent) that did not have a source of drinking water in their schools. Furthermore, there were only 11.5 per cent of the schools that had tested their water for quality. The rest were drinking water from the source without having the quality of water tested.

	Value for indicator	Numerator	Denominator
Total - Indicator 6c: Proportion of schools using an improved water facility	90%	47	52

In more than three fourth (86.5 per cent) of the schools, there was a facility present for handwashing. However it is to be noted that the same water source used for drinking purpose was used for handwashing purpose. All the handwashing facilities had provision of water, however there were only 13 per cent with provision of soap.

In assessing the functional handwashing station near toilet and point of care, it was found that in 76.9 per cent of the HCFs with toilet, there was a presence of handwashing facility. None of the HCFs visited had a place of handwashing available within 5 meters of toilet. Only three out of 20 (15 per cent) was available to the outpatients, while the remaining was only accessible to staff. Half of the handwashing facilities had provision of water, while only 10 per cent had provision of soap. There were no HCFs with gel hand sanitizers. Furthermore, survey attempted to capture the availability of handwashing facility for the outpatient at the point of care, that had a provision of water, and soap/ or sanitizer. Findings showed that 70 per cent of the HCFs had handwashing facilities at point of care as opposed to 50 per cent near toilets. None of these handwashing facilities were available to the outpatients and was used only by the staff.

There was provision of water in 70 per cent of the handwashing facilities at POC, and soap in 40 per cent of handwashing facility in POC.

	Value for this indicator	Numerator	Denominator
Total - Indicator 7a: functional hand hygiene stations near points of care and toilets	0%	0	20

In regards to management of solid wastes in HCF, it was found that three fourth of the HCFs had separate bin for sharp objects, while more than half had separate bin for infectious general waster. Most of the HCFs practiced open burning to deal with infectious waste and sharp waste.

65 per cent of the HCFs had flush pour toilets. The survey also attempted to see if there were any toilets in these HCFs that catered to the specific needs of women for menstruation. Study showed that 20 per cent of the HCF had separate toilets for girls and women, 45 per cent did not have a separate toilet for girls, and 35 per cent did not have toilets at all. It was found that there were no toilets that was designated for women and girls and there were not a single toilet that was accessible to people with limited mobility.

	Value for this indicator	Numerator	Denominator
Total - Indicator 7b: basic sanitation	0%	0	20

85 per cent of the HCF had improved water supply on premises of the health facility.

	Value for this indicator	Numerator	Denominator
Total - Indicator 7c: improved water supply located on premises	85%	17	20

6.2 CHALLENGES

Baseline study identified the following challenges at school and health care facilities:

- Water tests showed that significantly high proportion of sampled communities, schools, and health facilities were consuming water with E-Coli.
- Despite the presence of improved drinking water sources, water quality was not prioritized. Many schools and health facilities had not tested their water for quality.
- The drinking water was not treated before consuming, making the users susceptible to water-borne diseases
- The functioning of water sources and toilets has not been assured. There were many existing water sources and toilets that were lying idle.
- The percentage of functional toilets in school is not promising. More than 50 per cent of the schools lacked functional toilets. Moreover, there is not a single school that provisions service to students with limited mobility. The toilet-student ratio is very low.
- None of the HCFs had a toilet provision for girls and women, or people with disability.
- Open defecation is still a problem in almost one third of the schools.

- Very few schools and health care facilities had a person designated for carrying out activities related to WASH signaling low prioritization of the issue. Moreover, regular cleaning of toilets was not reported.
- Presence of soap is majorly lacking in almost all schools.
- HCFs have not provisioned handwashing facilities in the point of care that is available and accessible to the outpatients.

6.3 IMPLICATIONS

Water test results showed that disproportionate number of communities, schools, and HCFs were consuming water that had presence of E-Coli. The presence of E-Coli is more than three fourth in all these sampled sites signaling vulnerabilities among the people who are consuming water to water borne illness. Moreover, treating the water before drinking is almost missing. It is of utmost importance that the quality of water is treated before consumption.

The water consumed by the schools were not of good quality. Students were directly drinking water from the source without any treatment. Moreover, the quality of the water had not been tested. It is important to teach the school authorities about the importance of safe and clean drinking water, and the implications of bad quality water in health of the students and well as other who consume the water. Proper reinforcement and awareness, with a rigorous monitoring mechanism in place through management committees of school and HCFs.

Moreover, there were schools and HCFs that contained arsenic in drinking water which results in health implications. The communities and stakeholders using the current source that contains arsenic should be oriented that the source is not apt for drinking water, and they should be supported with another water source.

Despite the provision of improved toilets in schools and HCFs, there are no schools and HCFs that had toilets that were accessible to children/people with disability. Moreover, even majority of the schools denied facilities that would cater to the needs to menstrual hygiene management of the girls. It is important to support schools and HCFs in building toilets that are gender-friendly and disabled-friendly. There is still one third of the schools where human faeces was observed. Awareness at school level is imperative to work on open defecation free areas, especially schools that set an example to the students as well as parents.

It was noted that the same source of water used for drinking purpose was mostly used for handwashing purpose as well. Provision of water was not a major problem, but majority of these facilities lacked soap or alternative cleansing agent. There were no schools that practiced daily handwashing, moreover results from handwashing observations showed poor results as none of the students were using soap for handwashing. Handwashing facilities lacked soap, and proper handwashing practice was not followed at all. It is important that the school authorities closely observe the handwashing practice of children, and also organize activities that encourage handwashing among students.