Rural WASH in Schools Programme in Sierra Leone

Baseline Study Report

Ministry of Education, Science and Technology
Ministry of Health and Sanitation
Government of Sierra Leone

unicef

nestbuilders international
Rural WASH in Schools Programme in Sierra Leone

Baseline Study Report

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- Movement Towards Peace and Development Agency (MoPADA) – Pujehun
- Cotton Tree Foundation (CTF) – Tonkolili and Bombali
- Society for Democratic Initiative (SDI) – Port Loko
- Mobek Agricultural Programmes (MAP) – Port Loko

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Acronyms and Abbreviations

CLTS  Community-led Total Sanitation
DEO   District Education Officer
EMIS  National Education Monitoring and Information System
FGD   Focus group discussion
JMP   WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation
MEST  Ministry of Education, Science and Technology
MoHS  Ministry of Health and Sanitation
OD    Open defecation
PPS   Probability-proportional-to-size (sampling)
SHC   School Health Club
SLTS  School-led Total Sanitation
SMC   School Management Committee
SSHE  School Sanitation and Hygiene Education
WASH  Water, Sanitation and Hygiene
1. Introduction

Safe and child-friendly water, sanitation and hygiene (WASH) in schools improves health, boosts educational achievement, promotes gender equity and has a positive impact on communities. However, most schools in developing countries lack even basic water and sanitation facilities, and hygiene education programmes are often inadequate. Together with its partners, UNICEF is helping to address these gaps through a stronger emphasis on WASH in Schools advocacy and programming.

A key part of this effort is the “Call to Action for WASH in School” campaign, a joint initiative involving a number of stakeholders. The Call to Action campaign incorporates six key action points, one of which calls for improved monitoring of WASH in Schools programmes. To this end, NestBuilders International (NBI), an international development research consulting firm, was contracted by UNICEF Sierra Leone to carry out a baseline study to collect information on the WASH situation in schools across six districts in Sierra Leone. Research activities were carried out from 19 March to 22 June 2012.

1.1. Overview of UNICEF’s WASH in Schools Programme

Water, Sanitation and Hygiene (WASH) in Sierra Leone

On a global scale, Sierra Leone finds itself on the lowest rungs of health and socio-economic indicators. Following a devastating 11-year civil war, the country has made great strides towards improvements in the living conditions and safety of its inhabitants. However, policy, social, institutional and financial challenges continue to plague the water and sanitation sector.

With a population of roughly 5.8 million, the provision of water and sanitation throughout Sierra Leone is grossly deficient. Poor hygiene and environmental practices, coupled with population growth, poor environmental conditions and the destruction of water and sanitation infrastructure during the civil conflict pose considerable threats to all Sierra Leoneans, particularly children.

In a country where diarrhea and other water and hygiene related illnesses are a serious threat, the need for intervention is acute - especially in the realm of increasing access to improved water and sanitation facilities throughout communities and schools. In fact, providing adequate levels of water supply, sanitation and hygiene in schools is of direct relevance to the United Nations Millennium Development Goals (MDGs) for achieving universal primary education, promoting gender equality and reducing child mortality. It is also supportive of other goals, especially those on major diseases and infant mortality.

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Providing adequate levels of water supply, sanitation and hygiene in schools is of direct relevance to the United Nations Millennium Development Goals for achieving universal primary education, promoting gender equality and reducing child mortality.

The WASH conditions in schools throughout Sierra Leone have been found to vary from inappropriate and inadequate to the outright lack of latrines and safe water for drinking and hygiene. According to StatWASH 2010 data, where data on 4,212 primary schools in 13 districts is available, only 22.9% of primary schools have access to and use of functional safe drinking water and one in four schools have access to functional sanitation facilities in the school premises. Further, earlier research found that current handwashing practices among pupils are very low. Only 2.6% of students were observed to wash their hands with soap after using the toilet in schools; and only 1.5% of pupils were observed to wash their hands with soap before eating.\(^1\)

**UNICEF’s Support for Rural WASH in Schools Programme in Sierra Leone**

Since 2008 UNICEF Sierra Leone has been implementing the WASH in Schools programme in approximately 250 primary schools across the six districts of Bombali, Kenema, Moyamba, Port Loko, Pujehun and Tonkolili. The programme aims to improve education and health for schoolchildren through child friendly WASH facilities, and increased knowledge and practice of good hygiene behaviors through School Sanitation and Hygiene Education (SSHE) and School-led Total Sanitation (SLTS).

Overall, the WASH in Schools programme is designed to contribute to the reduction of child morbidity and mortality in water and sanitation related diseases and to the improvement of school enrolment and retention, especially among girls. Given the high vulnerability of children to diarrheal disease, their greater receptivity to behavior change and their propensity for development of lifelong behaviors, targeting primary school children is believed to be one of the most effective and efficient ways to disseminate messages and transform behaviors.\(^2\)

### 1.2. Baseline Study Objectives

Currently, the WASH in Schools programme is at a transitional stage from development to scale-up. Over the next three years the programme will be scaled up to cover 2,000 schools – achieving 100% coverage across 6 districts. In view of the emerging significance of measuring impacts of interventions, the baseline study is an integral component of the programme’s monitoring and evaluation (M&E) processes as it will form the basis for decision-making and measuring future impacts and outcomes. More specifically, the immediate objective of the baseline study exercise is to:

- Identify current levels of access to water, sanitation, and hygiene facilities (including essential hygiene practices)
- Determine behaviors of pupils in sanitation and hygiene practices
- Identify the health and educational status of pupil beneficiaries

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\(^2\) For more information on the evidence base see “Raising Clean Hands: Advancing Learning, Health and Participation through WASH in Schools”. UNICEF New York, 2010
With the above objectives in mind, the baseline study allows UNICEF Sierra Leone and all relevant stakeholders the opportunity to:

1. gain a better understanding of the initial WASH situation of schools in the targeted districts – this information can then be used to adapt and plan necessary interventions;
2. obtain baseline data for comparing the expected results against achieved results in order to measure the impact of the programme on children’s health and school performances; and
3. test the WASH in Schools monitoring and evaluation system to highlight and rectify any gaps.

### 2. Methodology

#### 2.1. WASH in Schools Monitoring and Evaluation Framework

In establishing the monitoring and evaluation (M&E) system for the WASH in Schools programme, UNICEF Sierra Leone adapted the logical framework which was developed by the Dubai Cares Initiative in Mali (one of UNICEF’s partners in the “Call to Action for WASH in Schools” campaign). In consultation with UNICEF, NBI consultants carefully reviewed the logframe and adapted it to the national context, in addition to making a number of revisions (most notable, the addition of menstrual hygiene management at the output level).

The monitoring and evaluation indicators are grouped into 3 categories: outputs, outcomes and impacts.

![Figure 1: WASH in Schools monitoring and evaluation framework](image)

**Outputs**
- Monitoring of existing facilities: water points, latrines, hygiene materials, hygiene education classes

**Outcomes**
- Monitoring the improvements in hygiene practices at school and the sustainable management of facilities

**Impacts**
- Measuring impact of the programme on school performance and diarrhea-related morbidity

#### 2.2. Data Collection Tools and Strategies

A combination of qualitative and quantitative methodologies were employed to address the research objectives of the baseline study. As previously mentioned, this research built on the M&E system developed by the Dubai Cares Initiative in Mali, therefore similar data collection methods were applied; however the tools were modified and adapted to the Sierra Leonean context. The
outcomes of this approach allow UNICEF Sierra Leone to contribute to the strengthening of the M&E systems, techniques and data collection tools used by its ‘Call to Action’ partners.

Table 1 highlights the mix of data collection tools that were developed, as well as the related target groups and sample sizes. All data collection tools were pre-tested and findings were used to amend and finalize the data collection tools.

### Table 1: Baseline study data collection methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Observations of School Facilities</td>
<td>Direct observation of the latrines, water points and hygiene materials in the school yard using a structured checklist</td>
<td>285 sample schools</td>
</tr>
<tr>
<td>Semi-Structured Interview with Head teacher, Hygiene/Health Teacher</td>
<td>Data on the schools WASH facilities, practices and approach to water, sanitation and hygiene management at the school was collected from the head teacher , or the most relevant informant (e.g. hygiene/health teacher)</td>
<td>One head teacher/health teacher at each of the 285 sampled schools</td>
</tr>
<tr>
<td>Structured Observation of Children’s Handwashing Behaviour</td>
<td>Using a simple checklist, researchers strategically observed the handwashing behavior of children during break-time or lunch time *Observations only carried out at schools with handwashing facilities with soap and water</td>
<td>790 observations were made: • 381 observation after defecation • 409 observations before eating</td>
</tr>
<tr>
<td>Individual Structured Interviews with School children</td>
<td>10% of children per school were selected at random from the school register of all classes. Information was collected on indicators pertaining to absenteeism, diarrhea-related morbidity and WASH knowledge. Data was also collected on menstrual hygiene management from girls above the age of 9 who had attained menarche.</td>
<td>7,707 students interviewed</td>
</tr>
<tr>
<td>Focus Group Discussion (FGD) with Students</td>
<td>A focus group discussion guide was used to triangulate findings and to gain a deeper understanding of WASH practices, access and knowledge. Older girls who have attained menarche were specifically targeted to gain insight into menstrual hygiene management practices, knowledge and attitudes. 4 different groups were targeted: boys, girls, younger children and older girls.</td>
<td>808 FGD participants: • 159 boys (class 1-6) • 298 girls (class 1-6) • 149 younger children (class 1 -2) • 202 older girls (who had attained menarche)</td>
</tr>
<tr>
<td>Document Review</td>
<td>Document review of the number of school children (enrollment) and their school performances (pass rates). Attendance records were also reviewed to gather data on student absenteeism.</td>
<td>Sourced from the school head teacher</td>
</tr>
</tbody>
</table>

### 2.3. Sampling Strategy

The sample size for the baseline study was made up of 10% of the total number of schools in each of the 6 targeted districts.
### Table 2: Total number of schools sampled, by district

<table>
<thead>
<tr>
<th>District</th>
<th>Number of schools</th>
<th>10% Sampled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>510</td>
<td>51</td>
</tr>
<tr>
<td>Kenema</td>
<td>610</td>
<td>60</td>
</tr>
<tr>
<td>Moyamba</td>
<td>466</td>
<td>46</td>
</tr>
<tr>
<td>Port Loko</td>
<td>506</td>
<td>51</td>
</tr>
<tr>
<td>Pujehun</td>
<td>266</td>
<td>27</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>499</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,857</strong></td>
<td><strong>285</strong></td>
</tr>
</tbody>
</table>

School population data from the National Education Monitoring and Information System (EMIS) was used to sample schools according to systematic sampling with *probability-proportional-to-size (PPS)*. Data on school enrollment from the EMIS was used as the measure of size. By using a probability proportional to size selection, an implicit stratification and proportional allocation was achieved. In total, 285 schools containing 77,045 students were sampled for the baseline study.

### 2.4. Data Collection Approach

**Training of Field Staff**

Prior to data collection, all field enumerators and supervisors participated in a 5-day residential training workshop in Kenema city. The workshop focused on the study background, sampling procedures, interviewing techniques and familiarization with the data collection tools. The last two days of the training workshop included field exercises in two nearby primary schools. During the field testing, enumerators practiced administering the data collection tools under the supervision of field supervisors with oversight from NBI’s lead consultants.

Following each pre-test, a debriefing session was conducted with the field team to check for understanding of questions and procedures for conducting data collection.

**Fieldwork**

The study was conducted over a three-week period from May 1st to May 25th, 2012. The study team was divided into six teams, each composed of 1 supervisor and anywhere from 3 to 6 enumerators. Each team was assigned to one district. While enumerators were primarily responsible for administering the data collection tools, supervisors conducted various quality control measures throughout the field exercise. Additional supervisory visits were made by the lead consultants to ensure that the field staff were performing according to the field quality control protocols.

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³ Probability proportional to size (PPS) is a sampling technique used for surveys in which the probability of selecting a sampling unit (in this case a school) is proportional to the size of its population. It gives a probability (i.e., random, representative) sample. It is most useful when the sampling units vary considerably in size because it assures that those in larger sites have the same probability of getting into the sample as those in smaller sites, and vice versa.
Monitoring Partners of UNICEF’s WASH Programme provided logistical support throughout the data collection exercise. In addition to providing transportation to the surveyed schools, these partners were integral in orienting the field staff to their operational areas.

2.5. Data Entry and Analysis

Data Entry
Quantitative data was entered into a computer database using SPSS. The same software package was used for data analysis. The database was prepared by NBI’s Research Manager and 10 skilled data entry clerks entered quantitative data from the observation of school facilities, head teacher interview, structured observation checklist and student interview questionnaire over a 10 day period.

All data was entered at NBI’s head office in Freetown, supervised by the Research Manager. Following data entry, thorough data cleaning was conducted in SPSS and a file of cleaned data was prepared for analysis.

Data Analysis
Various statistical models, tests, and techniques were carried out during data analysis to meet the parameters of the baseline indicators. Results are presented in the form of descriptive statistics, cross-tabulations and charts in report format. Where relevant, data has been disaggregated by sex, age and/or district.

All focus group discussion (FGD) notes were transcribed and prepared for analysis. Qualitative data was analyzed manually using thematic analysis techniques. Narratives of the data were conceptualized into meaningful themes and analyzed along quantitative data to ensure triangulation of findings.

2.6. Coordination with Key Stakeholders

The Government of Sierra Leone (GoSL) was involved at each stage of the baseline study. From the outset, the baseline study tools, methodology and sampling were developed in consultation with, and approved by line ministries - most notably the Ministry of Education, Science and Technology (MEST), the Ministry of Health and Sanitation (MoHS) and Statistics Sierra Leone. The results of the baseline study were also presented to all relevant stakeholders at a national validation workshop held on June 25th, 2012.

In order to ensure the sustainability of the monitoring system, a version of the questionnaire including the direct observation of school facilities, semi-structured interview with head teacher and document review was developed and disseminated to all implementing partners (IPs), district and national level government ministries and departments for use in annual data collection. Staff members were trained on the general methodology and data collection tool in a three-day training workshop. Following the training, IPs conducted an annual data collection exercise at targeted schools across the 6 districts.4

4 The annual data collection focused on a select number of indicators for monitoring and evaluation purposes. For more information on this process see: NBI (2012). “Supervisory Report: WASH in Schools Programme Implementing Partners Annual Data Collection”. Available from UNICEF Sierra Leone.
This approach serves to strengthen the accountability and ownership of the WASH in Schools programme M&E system. It also provides frontline staff members with the opportunity to develop their survey and evaluation skills. Finally, it enables the sustainability of the programme’s M&E system.

2.7. Limitations

- Some of the schools which were selected for the study were found to no longer exist only after field researcher had travelled to the community. In these cases, the closest primary school was sampled.
- Record management at schools made it difficult to collect all required data for the document review. At some schools, data on enrollment figures, attendance, exam success rates and pass rates did not exists.
- Data collection took place during the start of the farming season, after major exams and at a time of traditional holidays. Therefore in some surveyed schools a high proportion of students were absent during the data collection exercise.
3. Results

3.1. General Characteristics of Surveyed Schools

General Characteristics
A total of 285 primary schools were visited during baseline field work, the overwhelming majority of which (95.1%) were government assisted schools. Almost all of the sampled schools (97.2%) were single shift schools with only 0.7% reporting to be parallel shifts. The majority of schools were mixed (boys and girls) schools (98.2%) with a very small proportion of all boys (0.7%) and all girls (1.1%) schools. Few sampled schools were located on compounds that were shared with other schools (4.9%), and even fewer had boarding facilities (0.7%).

Figure 2: General characteristics of sampled schools

Population
The average student population of schools surveyed was 275; with an average of 140 boys and 137 girls. Overall, the largest school surveyed was located in Kenema City with a total student population of 1460 students (to accommodate the large student body, the school operates according to a double shift system).

A significant number of schools reported having students with disabilities (41.1%); the average being three students per school having a disability.

The average ratio of children to teachers was 40:1. However, the range of student-to-teacher ratios varied drastically: the highest ratio was 143:1 in Biriwa chiefdom in Bombali district, while the lowest was 5:1 in Koya chiefdom in Port Loko district.

Gender Parity Index
The Gender Parity Index (GPI) is a socio-economic index designed to measure the relative access to education of males and females. The GPI measures the ratio of boys to girls enrolled in school. For
the baseline study, the GPI was calculated by using the average girls/boys ratio per school, which in turn was based on the population of each school at the start of the 2010-2011 school year.

Table 3: Gender Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender Parity Index (currently enrolled 2011-2012 school year)</td>
<td>0.98</td>
</tr>
<tr>
<td>Average Boy to Girl Ratio (still in school at the end of the 2010-2011 school year)</td>
<td>1:0.99</td>
</tr>
<tr>
<td>Relative variation of Girls Enrollment (2010 – 2011 school year)</td>
<td>1.70</td>
</tr>
</tbody>
</table>

The GPI among surveyed schools was 0.98 – indicating that, on average there are slightly more boys than girls enrolled. However, it should be noted that the GPI is nearing 1.0, which suggests a limited gender disparity. Individual GPI scores were found to differ significantly across the sampled schools; ranging from 0.31 to 2.38. Interestingly, both Kenema and Moyamba districts were found to have, on average more girls enrolled than boys.

3.2. Latrine: Access, Status and Use

Access to Latrine Facilities

Over one-third (35.1%) of the schools surveyed did not have access to latrine facilities. The districts with the highest percentages of latrine facilities available were: Port Loko (70.6%), Bombali (66.7%) and Tonkolili (64.0%). Of particular concern is Pujehun district where approximately 5 out of 10 schools surveyed had no latrine (55.6%).

Figure 4: Access to latrine facilities, by district
However, latrine access is not enough to ensure child-friendly facilities. The latrine should also be improved in order to ensure safe disposal of excreta and minimize the risk that individuals could come into direct contact with human excreta. **Among those schools with sanitation facilities available, approximately 9 out of 10 (89.7%) had at least one improved latrine available.** The most common facilities were a pit latrine with slab (51.4%), followed by VIP latrines (42.3%). There were very few flush/pour-flush and open pit latrines in use among surveyed schools.

**Figure 5: Type of latrines available at schools**

<table>
<thead>
<tr>
<th>Latrine Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pit latrine with slab</td>
<td>51.4%</td>
</tr>
<tr>
<td>VIP</td>
<td>42.3%</td>
</tr>
<tr>
<td>Pit latrine w/o slab</td>
<td>7.2%</td>
</tr>
<tr>
<td>Flush/ Pour-flush</td>
<td>2.8%</td>
</tr>
<tr>
<td>Hanging toilet</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

**Overall, 6 in 10 (60.1%) school latrine facilities were not separated by sex (i.e. boys and girls latrines separated from each other by distance).** The districts with the lowest number of separate latrines were Port Loko and Moyamba where respectively 80% and 71.4% of the latrines were not separated by sex.

When existing latrines are evaluated in light of both their type and separation by sex, we see that only **34.1% of all surveyed schools with latrine facilities available have at least one improved latrine facility which is separated for boys and girls.** However, regional differences do exist with Kenema, Moyamba and Port Loko districts having the lowest number of latrines which meet this standard.

**Figure 6: Schools with at least one improved latrine that is separated by sex, by district**

<table>
<thead>
<tr>
<th>District</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>55.9%</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>40.6%</td>
</tr>
<tr>
<td>Pujehun</td>
<td>40.0%</td>
</tr>
<tr>
<td>Kenema</td>
<td>28.9%</td>
</tr>
<tr>
<td>Moyamba</td>
<td>26.7%</td>
</tr>
<tr>
<td>Port Loko</td>
<td>16.7%</td>
</tr>
<tr>
<td>Total</td>
<td>34.1%</td>
</tr>
</tbody>
</table>

5 According to WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, improved sanitation facilities include a flush/pour-flush latrine, a ventilated improved pit (VIP) latrine, pit latrine with slab, or composting toilets. Open pits, hanging latrines and buckets are considered to be unimproved sanitation facilities. See World Health Organization and UNICEF (2006). “Core Questions on Drinking-water and Sanitation for Household Surveys.” WHO Library Cataloguing-in-Publication Data.

6 That is, the latrine facility is improved (e.g. a flush/pour-flush latrine, a ventilated improved pit (VIP) latrine, pit latrine with slab, or composting toilets) and separated by sex.
The functionality of existing latrine facilities were assessed to determine if the latrines were in good and usable condition. **On average, of the five types of latrines available, 87.1% were deemed functional and only 12.7% were considered partially functional.** Only one pit latrine with slab was observed to be completely non-functional.\(^7\)

In order to assess whether the existing latrines provide sufficient access for students, the average ratio of students to drop holes was tabulated. **In schools with latrine facilities available, the average ratio of student-to-drop hole was 107:1.** The Ministry of Education, Science and Technology (MEST) recommend a student-to-drop hole ratio of no more than 45:1 in the ‘Child Friendly WASH Facilities Standard (2011)’. The average student-to-drop hole ratio found across the sampled schools is over twice the amount that is recommended. This suggests that the average number of latrines currently available across the sampled schools is highly insufficient. **In fact, 82.9% of schools exceed the MEST standard.** In 17.7% of schools, the ratio is twice as high as the recommend standard and three times as high in 1 in 5 schools.

**Table 4: Children to drop hole ratio**

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Total surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average ratio</td>
<td>107</td>
</tr>
<tr>
<td>Max ratio</td>
<td>730</td>
</tr>
<tr>
<td>Minimum ratio</td>
<td>16</td>
</tr>
<tr>
<td>Ratio &lt;45</td>
<td>17.1%</td>
</tr>
<tr>
<td>Ratio &gt;90</td>
<td>17.7%</td>
</tr>
<tr>
<td>Ratio &gt;135</td>
<td>22.9%</td>
</tr>
</tbody>
</table>

The largest ratio observed was 730 students to one drop hole in Kenema City. By district, Kenema had the highest average student-to-drop hole ratio with 179 students per one drop hole, followed by Bombali (112:1). On the other hand, Port Loko (76:1) and Moyamba (78:1) were found to have the lowest student-to-drop hole ratio.

**Table 5: Children to drop hole ratio, by district**

<table>
<thead>
<tr>
<th>District</th>
<th>Children to drop hole ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenema</td>
<td>179:1</td>
</tr>
<tr>
<td>Bombali</td>
<td>112:1</td>
</tr>
<tr>
<td>Pujehun</td>
<td>90:1</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>89:1</td>
</tr>
<tr>
<td>Moyamba</td>
<td>78:1</td>
</tr>
<tr>
<td>Port Loko</td>
<td>76:1</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td><strong>107:1</strong></td>
</tr>
</tbody>
</table>

Further analysis was conducted to better understand the impact of student population on the number of drop holes available with the assumption that as the school population increases, so too should the number of drop holes available. The graph below suggests that the number of latrines

---

\(^7\) A functional latrine was defined as a toilet facility which is not physically broken and can be used. Partially functional was defined as a toilet facility which can be used, but there are some problems (e.g. roof/walls/slab deteriorating). Lastly, non-functional was defined as a toilet facility that exists, but is so badly damaged it’s no longer possible to use (roof/walls/slab broken).
does not necessarily depend on the population of the school; on the contrary, the higher the school population, the more the ratio of children per drop hole increases instead of decreasing.

Figure 7: Association between the children-to-drop hole ratio and school size

Access to Latrine Facilities that meet Set Standards

According to the MEST overall standards for ‘Child Friendly WASH Facilities’ (2011) a minimum set of standards have been developed to evaluate school latrine facilities. To be considered up to standard, school latrines should be improved (according to JMP standards\(^8\)), physically separated by sex, functioning and have a student-to-drop hole ratio that is no more than 45:1. Taking this set of minimum standards into account, only 13 out of the 285 (4.6%) surveyed schools have access to a sanitation facility that is ‘up to standard’. Of particular concern is the observation that not one latrine in Moyamba district was evaluated to be ‘up to standard’.

Table 6: Summary of access to latrine facilities, by district

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one latrine</td>
<td>66.7%</td>
<td>63.3%</td>
<td>65.2%</td>
<td>70.6%</td>
<td>55.6%</td>
<td>64.0%</td>
<td>64.9%</td>
</tr>
<tr>
<td>At least one improved latrine(^9)</td>
<td>100.0%</td>
<td>81.6%</td>
<td>90.0%</td>
<td>97.2%</td>
<td>93.3%</td>
<td>78.1%</td>
<td>89.7%</td>
</tr>
<tr>
<td>Improved and separate girls/boys latrines(^10)</td>
<td>55.9%</td>
<td>28.9%</td>
<td>26.7%</td>
<td>16.7%</td>
<td>40.0%</td>
<td>40.6%</td>
<td>34.1%</td>
</tr>
<tr>
<td>Latrines ‘up to standard’(^11)</td>
<td>9.8%</td>
<td>3.3%</td>
<td>0.0%</td>
<td>3.9%</td>
<td>4.0%</td>
<td>6.0%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

\(^8\) This includes: pour-flush, VIP latrine, pit latrine with slab and composting latrine. See WHO/UNICEF (2006)

\(^9\) Calculated as a percentage of all schools with access to at least one latrine.

\(^10\) Calculated as a percentage of all schools with access to at least one latrine.

\(^11\) Calculated as a percentage of all surveyed schools.
Latrine Accessibility
Latrine facilities were observed to assess how accessible they were to all students during the school day. Findings suggest that while less than 2 out of 10 school latrines were observed to be locked during the school hours, there were issues of accessibility for younger and disabled students. For instance, less than half (46.7%) of the surveyed schools had latrines which were easily accessible for younger pupils (e.g. drop hole is smaller; door handle is lower, etc.); and less than one-fifth of latrines were deemed to be accessible to students with disabilities (e.g. latrine has level or ramped access and a wide door).

Table 7: Accessibility of latrines

<table>
<thead>
<tr>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilets facilities locked during school hours</td>
<td>17.4%</td>
</tr>
<tr>
<td>Toilets assessable to pupils with disabilities</td>
<td></td>
</tr>
<tr>
<td>Male pupils with disabilities</td>
<td>14.6%</td>
</tr>
<tr>
<td>Female pupils with disabilities</td>
<td>15.1%</td>
</tr>
<tr>
<td>Toilet facilities designed for younger children</td>
<td>46.7%</td>
</tr>
</tbody>
</table>

Status of Latrines
Field researchers conducted thorough observations of all school latrines using a pre-defined checklist. The status of latrine superstructures was found to be less than desirable across the surveyed schools. The most common problems observed included: 83.0% of pit latrines were not covered; 55.4% did not have toilet compartments that were lockable from inside; 41.5% had cracks in the latrine superstructure; and 38.8% did not have doors that could be opened and closed easily.

Maintenance and Cleanliness of Latrines
In addition to the problems highlighted above, the most common problems observed at school latrines were bad smell, lack of anal cleansing materials and poor cleanliness. These particular issues are caused by poor and irregular upkeep and cleaning of the facilities. Two-thirds (66.8%) of the school latrines visited did not have anal cleansing materials available for pupils. Not surprisingly, field researchers noted that the majority of facilities had
visible excreta on the latrine floor/wall/seat (65.8%) and puddles of urine on the latrine floor (73.9%). Where anal cleansing waste was visible on the latrine floor (63.0%), it was often in the form of notebook papers and leaves which were left on the latrine floor. The lack of maintenance and care of the latrines was clearly noted in over half (57.6%) of the latrines visited which were observed to have a strong and offensive smell around the latrine which would prevent its use.

Figure 9: Observed cleanliness of latrines

The unhygienic status of latrines is not surprising when put into context of the reported cleaning routines of the surveyed schools. Based on the accounts of school head teachers, only 12.0% of schools carry out regular cleaning of school latrines every day. Rather, latrines are most often cleaned once a week (48%). Further, nearly 1 in 5 (15.6%) head teachers reported that the school latrines are ‘very rarely’ cleaned. In the majority of schools (90.5%), pupils are delegated to clean the school latrines and often the task is assigned to older students or as a form of punishment. According to a focus group discussion (FGD) participant: “we the pupils clean the toilets. The teachers determine who cleans the toilets, both boys and girls from classes 3-6. Sometimes if you are late, you will clean the toilet as a form of punishment” (Girls’ FGD, Port Loko district).

Figure 10: Latrine cleaning frequency and duties

It is worthwhile to note that nearly all of the schools surveyed lack the appropriate cleaning products and hygiene materials, such as brooms, brushes, buckets and soap to adequately clean the latrine facilities (see section 3.5 on Hygiene Materials). This raises concerns as to how schools are currently cleaning their latrines in the absence of these materials. From the observations of cleanliness noted above, it could be deduced that many latrines are not properly cleaned.
FGDs with students suggest that latrines are most often cleaned with what is available. Many students did not report using soap to clean the latrines. In some cases where the materials do not exist at the school, students reported using their family’s own hygiene materials. For instance, according to a girl FGD participant in Port Loko “every Friday we sweep the toilet and scrub it with water after school, we go and fetch water using our parents kettles and then scrub the toilet in turns”.

**Use of Latrines and Open Defecation**

The foregoing discussion has highlighted that many of the school latrines had a variety of problems which indicated a lack of maintenance and upkeep. Issues such as a lack of covers for latrine drop holes, visible cracks in the superstructure, lack of roofs and locking doors, plus strong offensive smells and generally unhygienic latrines can deter children from using the school latrine – and may have the effect of promoting the practice of open defecation.

**Field researchers observed visible traces of open defecation (OD) at 4 in 10 (40.4%) of the surveyed schools.** Comparatively, the percentage of head teachers who stated pupils practice open defecation was marginally higher at 43.6%. The two districts with the highest reported observation of visible traces of open defecation were Pujehun (70.4%) and Kenema (51.7%). These two districts have shockingly high rates of open defecation in comparison to the other four districts whose percentages are between 26 – 35%. It is important to note that schools in Pujehun and Kenema districts were observed to also have the lowest access to latrines at 55.6% and 63.3% respectively which may be impacting the higher than average OD rates.

**Figure 11: Observation of open defecation, by district**

![Bar chart showing open defecation rates by district](chart)

In order to understand the factors that lead pupils to openly defecate, a number of relevant indicators were queried to test for an association with the presence of open defecation. The data suggests that there are three main factors that may contribute to the practice of OD, namely: (1) the lack of latrines, (2) the existence of strong, offensive smells emanating from the latrine and (3) the lack of privacy due to latrines not having doors that can open and close properly.

12 Other factors such as the separation of latrine facilities by sex, the existence of hygiene education, ratio of students to drop hole and the availability of anal cleansing material were not found to have a statistically significant association with observed open defecation rates.
It is logically deduced that a lack of latrines leads to high rates of open defecation and this was found to be true in the schools surveyed. Whereas the overall average of OD was observed to be 56.0% across schools without latrines, the rate of OD decreased considerably to 31.9% in schools where there were latrines available (regardless of their type and status).

The hygienic state of latrines and the existence of a superstructure which ensures privacy were also found to have a statistically significant association to the observed rate of OD. Namely, there was a 24.6% decrease in the observed OD rate at school latrines without an offensive smell, and a further 18.6% in schools where the latrines have doors that can be opened and closed properly.

**Figure 12: Observed rate of open defecation, by contributing factor**

<table>
<thead>
<tr>
<th>Existence of latrines</th>
<th>Hygiene</th>
<th>Privacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No latrines</td>
<td>Offensive smell</td>
<td>No doors</td>
</tr>
<tr>
<td></td>
<td>No smell</td>
<td>Latrine has doors</td>
</tr>
<tr>
<td>56.0%</td>
<td>42.7%</td>
<td>43.2%</td>
</tr>
<tr>
<td>31.9%</td>
<td>18.1%</td>
<td>24.6%</td>
</tr>
</tbody>
</table>

Deeper insight on these associations was sought from students through focus group discussions (FGDs). More specifically students were asked to discuss the sanitation facilities accessible to them and to comment on their likes and dislikes. The condition of toilets provided within school facilities varied in children’s reports, with a very small proportion of FGD participants reporting satisfaction with clean, private toilets.

Common issues were a lack of privacy, dirty facilities, lack of anal cleansing material, water and handwashing facilities near the latrine, presence of flies and cockroaches and shallow drop holes with visible feces. A number of students also voiced concern over drop holes that were too big for small children to use without fear. As a result of these issues, even where facilities were reported as available, children said they often chose to openly defecate in the bush rather than make use of the facilities on the school property.

Interestingly, when asked what they liked and disliked about the school latrines, the perceptions of boys, girls and younger children did not significantly differ. For instance, issues of cleanliness, privacy, presence of flies and a lack of anal cleansing material and water were discussed by all groups as
elements they dislike about the school’s sanitation facilities. Perhaps most surprisingly was the finding that both older boys and girls reported that the lack of privacy (most often in the form of a missing door) made them reluctant to use facilities for fear of being seen by pupils of the opposite sex. This suggests that lack of privacy is not only a barrier for girls, but boys as well.

As mentioned above, children of both sexes and all age groups routinely chose to defecate in the bush even where facilities were available to them. Findings from the FGDs suggest that the most common reason for making this choice for older boys and girls alike was shame, either because of a lack of privacy in mixed sex schools, or because of a fear of being seen, heard or caught short when diarrheal. One child, discussing the privacy available to him said, “that is one of the major problems we have in our school, for the little children they can use [the latrine], but for the older children we are not using it because there is no privacy such as a door, roof. Once I was using the latrine and a girl in class 6 met me and I was ashamed. From then, I never used the toilet again. That is why most of [us] use the bush” (Boys’ FGD, Port Loko).

On the other hand, the most common issues reported by younger children which might encourage open defecation were large drop holes and lack of light in the school latrines. Interestingly, a decrepit superstructure where there is no roof or functioning door was seen as desirable by many younger students who appreciated the light provided. According to one student “there is enough light inside the toilet, because the toilet doors are not functional” (Younger children FGD, Moyamba district).

Several children (both from schools with and without on-site toilet facilities) expressed fear at using the bush for defecation, with one girl from an FGD in Port Loko (whose school had no toilet facility) saying “I like nothing about the toilet and I dislike everything about it because it is in the bush and no one knows what will happen one day. We can come in contact with deadly animals like snakes”. Moreover, a FGD of girls in Kenema (who reported having no toilet facility at their school) indicated that the teachers at their school had told the older children to defecate in the bush while urging younger children to defecate inside the school compound – suggesting they also had concerns about safety aspects of open defecation in the bush.

**Reported Sanitation Practices**

In order to get a better understand of the barriers to using the school latrines, a number of questions were posed in one-on-one interviews with boys, girls and younger students.

In schools where there are sanitation facilities, 9 out of 10 students (94.3%) stated that they normally defecate in the school latrines when they are at school, although 4.5% admitted they defecate in the bush, a nearby stream or behind the school buildings. A further 1.2% of students reported that they normally go home to defecate or go to a nearby house. Of the students who
reported using the school latrines, the majority (90.6%) reportedly use it every time they need to defecate.

While the reported sanitation practices of both boys and girls were similar, there were noted differences in the place of defecation for different age groups. Whereas the majority of both younger and older children reported using the school toilet, children under the age of 9 were twice as likely to report practising open defecation. As noted above, this may be due to the issues younger children encounter when using the school latrine – namely larger drop holes and lack of adequate light.

Figure 13: Students reported place of defecation while at school

![Bar chart showing place of defecation]

Students who reported that they do not use the school latrine, or only use it some of the time, were asked to provide reasons for not using the latrine. Among this group, the majority reported that the latrines were too dirty (50.8%) and too smelly (46.2%).

This data supports the aforementioned research findings suggesting the factors which encourage students to practice open defecation; namely that the hygiene and cleanliness of the latrine facilities largely affects the pupils’ usage of the toilets and their hygiene behaviour.

Figure 14: Reported reasons why pupils do not use school latrines

![Bar chart showing reasons for not using latrines]

While the reported reasons for not using the school latrine were constant across both sex and age groups, there were interesting variations noted between age groups. For instance, over 30% more older students over the age of 10 reported that they do not use the latrine because it is too dirty (59.8%), too smelly (53.8%) and not private enough (13.6%) compared to students under the age of 9 (41.0%, 38.1% and 8.2% respectively). Therefore, it could be deduced that the hygiene and privacy
of latrines has a greater impact on older student’s decision not to use the latrine relative to younger students. There were also noted differences with a greater proportion of younger children reporting that the large drop holes, distance to the latrine, and the lack of light inside of the latrine were reasons for not using the latrines.

**Figure 15: Reported reasons for not using the school latrine**

![Graph showing reasons for not using the latrine]

When pupils were asked where they normally defecate when at home, 88.2% of said they use a toilet when at home. **Overall, nearly 3 out of 4 students (72.4%) interviewed reported they use a toilet when at school and at home.**

There were noted variations in the sanitation practices of students across the surveyed districts. While there were no consistent patterns in the findings, we see that for all measures, there were districts that fell well below and above the average.

**Table 8: Summary of student sanitation practice indicators, by district**

<table>
<thead>
<tr>
<th></th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>School children that reported using a toilet at school</td>
<td>86.3%</td>
<td>84.3%</td>
<td>71.8%</td>
<td>77.4%</td>
<td>67.1%</td>
<td>68.3%</td>
<td><strong>77.9%</strong></td>
</tr>
<tr>
<td>School children that reported using a toilet at home</td>
<td>97.2%</td>
<td>94.0%</td>
<td>72.3%</td>
<td>82.1%</td>
<td>92.1%</td>
<td>83.5%</td>
<td><strong>88.2%</strong></td>
</tr>
<tr>
<td>Schoolchildren that reported using a toilet both at home and school</td>
<td>84.9%</td>
<td>82.4%</td>
<td>54.9%</td>
<td>69.2%</td>
<td>65.3%</td>
<td>61.1%</td>
<td><strong>72.4%</strong></td>
</tr>
</tbody>
</table>

**Access to Urinals**

A total of 72 (26.1%) out of the 285 sampled schools were observed to have a urinal facility available to students. Among these schools 91% had traditional urinals made of local materials and a further 58.3% were observed to have individual urinal units.
3.3. Water Points: Access, Functionality and Technical Status

Water Points Inside School Compound

In evaluating school access to water points, the survey began by assessing those schools with water points within their compound. **Less than half (43.5%) of the surveyed schools were found to have water points within the school compound.** Among these, the majority of water points were protected dug wells (77.4%).

![Figure 16: Types of water points inside school compounds](chart)

While less than half of the surveyed schools had a water point within their compound, **at the time of the survey half (50.4%) of the water points located within the school compound were non-functional.** Most notably, approximately 50% of the observed borehole and protected dug wells within the school compound were non-functional – the most common problem being a broken handpump. Comparatively, the unprotected water sources available inside school compounds, such as open wells and springs, were found to all be functioning.

![Figure 17: Functional and Non-Functional Water points inside School Compounds](chart)

Main Water Source for Schools

Nearly 8 in 10 (83.9%) surveyed schools had access to a source of water (this included schools that accessed water points located both inside and outside of the school compound). The most common source of water was a protected dug well (35.8%), followed by surface water (21.8%). **Overall, half**

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13 To be considered functional, a water point must provide water on the day of the survey.
(50.2%) of the surveyed schools were found to rely on unimproved sources of water. The majority (89.1%) of main water sources were functional on the day of the survey; however, over half of the non-functioning water points (54.2%) were reportedly non-operational for over a month.

Figure 18: Main sources of water, by type

Access to water points varied significantly across the surveyed districts. Whereas all schools in Tonkolili district had access to water, 3 in 10 schools in Kenema district had no access to a water point for the schools WASH needs.

Figure 19: Percentage of schools without access to water, by district

As the second most common source of water for surveyed schools, the data was queried further to better understand the geographic distribution of schools relying on surface water. The proportion of schools relying on surface water at the district level varies significantly across the targeted districts. Whereas 8.3% of targeted schools in Kenema district rely on surface water, over three-quarters of all surveyed schools in Moyamba (37.0%) and Tonkolili (34.0%) districts rely on surface water as their main source of water for the schools WASH needs.

An unimproved drinking-water source is defined as one that, by nature of its construction or through active intervention, is likely to be unprotected from outside contamination, in particular from contamination with fecal matter. According to WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, unimproved water sources include unprotected dug well, unprotected spring, cart with drum, tanker-truck, surface water. Water sources which are considered to be “improved” include: piped water, public tap, borehole, protected dug well, protected spring and rainwater collection.
Relying on surface water as the main water source not only raises concerns about the quality of the water, but also the availability. According to students, there are often shortages of water due to the distance that must be travelled to collect surface water from the source. One student reported that “there are times water is not available because the distance from the school to the stream is a little long, and it takes time to go and fetch water from the stream and back to the school” (Boys’ FGD, Moyamba district). In some instances, students reported that their parents send them to school with water as they do not want them to drink the surface water provided at school: “some of us do bring water along with us when we are coming to school because some people dislike the water from the stream so they give their children water that they can use when they are at school” (Boys’ FGD, Kenema district).

**Figure 20: Proportion of schools relying on surface water as the main source of water, by district**

![Proportion of schools relying on surface water as the main source of water, by district](image)

Seeing as **16.1% of schools did not have access to a main source of water**, greater insight was sought from pupils themselves on how they manage this situation. FGDs revealed that in schools where there is no access to water students most often bring water from home in individual drinking containers or travel home during lunch breaks to drink water. As pointed out by a student in Port Loko: “Some bring their water from home while others go home to drink during lunch hours. Only a few bring water but majority go home to drink”.

According to some students they often go the whole day without water as they do not own a container to bring water to school; while others voiced concern over the long distances which make it difficult for them to bring water or travel home to drink water over break times. According to one female student in Port Loko, “I do not bring water from home because I do not take containers to school and the distance from my school to my home is too far. I walk a mile to go to school so it is not easy to take water from school to my home.” Another male student from Kenema stated that “I don’t like going home for drinking for it is a far distance and we can only get home during break/lunch.”

**Location of Main Water Source**

Approximately two-thirds (64.4%) of the surveyed schools collect water from a main source which is located outside of the school compound and shared with the larger community. Very few schools rely on a water source that is located inside the school compound and used exclusively by the school (10.5%). As the majority of schools must travel outside of the school compound to collect water, head teachers were asked how long it usually takes to walk to the source, collect water and
return to the school. While the average time reported was 28 minutes, one-quarter (25.4%) of schools must travel over 30 minutes to collect water; with the maximum reported time was 2 hours by a school in Bombali district. According to FGD participants it is most often the female students who are responsible for collecting water in the morning before classes begin: “there is a set time for us to collect water. We always collect drinking water when we come to school in the morning before devotion starts and after devotion no one is allowed to go out of the school to collect water” (Girls’ FGD, Port Loko district).

**Figure 21: Location of school’s main water point**

When head teachers were asked if the school’s main water point provides enough water to meet the needs of the school (approximately 1 gallon per person); only half (50%) reported yes, while 6.7% were unsure. **Therefore close to 4 in 10 (43.3%) schools with access to a main water source still do not have enough water to meet the schools needs.** This often leads to pupils bringing their own water from home. According to one student in Kenema district, “we usually come with drinking water to school from home…the drinking water is always finished before lunch”.

**Access to a Water Point that meets Set Standards**

According to the MEST overall standards for ‘Child Friendly WASH Facilities’ a minimum set of standards have been developed to evaluate school’s access to water points. To be considered ‘up to standard’, water points should be an improved source (according to JMP standards\(^{15}\)) that is functioning and provides enough water to meet the schools needs (i.e. 1 gallon per person per day). **Only 1 in 5 surveyed schools (20%) were assessed to have access to a water point that is ‘up to standard’.** Pujehun district (33.3%) had the highest percentage of up to standard water points, while Bombali (11.8%) and Port Loko (9.8%) districts had the lowest. When the standard is raised to include only those water points which are located inside the school compound, only 27 schools (9.5%) out of the 285 surveyed met the raised set standards.

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\(^{15}\) This includes: piped water, public tapstand, borehole, protected dug well, protected spring and rainwater collection. See WHO/UNICEF (2006)
Table 9: Summary of Access to Main Water Points, by district

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to a main water source</td>
<td>82.4%</td>
<td>70.0%</td>
<td>89.1%</td>
<td>76.5%</td>
<td>92.6%</td>
<td>100%</td>
<td>83.9%</td>
</tr>
<tr>
<td>Access to an improved water source</td>
<td>45.1%</td>
<td>48.3%</td>
<td>39.1%</td>
<td>54.9%</td>
<td>66.7%</td>
<td>52.0%</td>
<td>49.8%</td>
</tr>
<tr>
<td>Access to a functional water point</td>
<td>90.5%</td>
<td>85.7%</td>
<td>90.2%</td>
<td>74.4%</td>
<td>96.0%</td>
<td>98.0%</td>
<td>89.1%</td>
</tr>
<tr>
<td>Provide enough water per student and teacher (1 gallon/person/day)</td>
<td>26.2%</td>
<td>53.7%</td>
<td>68.3%</td>
<td>41.0%</td>
<td>60.0%</td>
<td>54.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Water point ‘up to standard’</td>
<td>11.8%</td>
<td>23.7%</td>
<td>21.7%</td>
<td>9.8%</td>
<td>33.3%</td>
<td>26.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Water point ‘up to standard’ and located inside school compound</td>
<td>3.9%</td>
<td>18.3%</td>
<td>8.7%</td>
<td>7.8%</td>
<td>3.7%</td>
<td>10.0%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

Figure 22: Access to a water point that is up to standard, by district

Water Availability
Sierra Leone has two main seasons during the year, dry and rainy, and thus water availability at the schools’ main water source can be impacted by the seasons. **However, nearly half (44.3%) of schools reported always having water available.** Of the schools where water is only available some of the time, the months with the least availability of water are in the later part of the dry season, including February (9.1%), March (6.4%), April (30.4%) and May (17%).

Figure 23: Months when water from the school’s main water source is not available
To better understand the day-to-day accessibility of water, other factors that might impact student’s access to water throughout the day were evaluated. A total of 4 in 10 head teachers reported that students cannot use the water point at anytime of the day. In the case of schools which rely on a water point outside of the school compound, the distance is often a barrier to allowing students to use it at any time of the day. In the case where the water point is located within the school compound, in many schools trips to the water point are restricted by teachers and head teachers who report students wasting water or damaging the water point as justification for prohibiting the use of the water point throughout the day. A further 29.1% of water points were found to be under lock and key at some point during the school day. Other reasons given by head teachers included the need to lock water wells to control the community’s over use of the water point. These actions serve to deter students from accessing water when they may need it, either for drinking or for hygienic purposes.

### Technical Status of Main Water Points

Field researchers conducted thorough observations of all school accessed water points. The majority of water points were found to be lacking many design standards meant to ensure the hygiene of the water. For instance, close to half of the water points had no soak away pit (48.1%) or a functional fence (46.1%). Furthermore, stagnant water within the apron and the absence of a drainage canal was found in 2 out of 10 school water points.¹⁶

#### Figure 24: Problems observed at water points

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No soak away pit</td>
<td>48.1%</td>
</tr>
<tr>
<td>No functional fence</td>
<td>46.1%</td>
</tr>
<tr>
<td>No functional soak away</td>
<td>42.5%</td>
</tr>
<tr>
<td>No drainage canal</td>
<td>26.2%</td>
</tr>
<tr>
<td>Has stagnant water within apron</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

The status of water wells and boreholes specifically, on the whole, were observed to be of a moderately poor quality. Over 20% of the observed water wells had non-functioning hand-pumps,

¹⁶ This data was collected on all school main water sources. In cases where an indicator was not applicable to a water source (e.g. surface water), data was not collected.
cracks in the apron, no well lining, no drainage canal and no soak away pit. The most common problems observed had to do with the lack of a soak away pit. Other problems included no well cover and cracks in the headwall.

**Figure 25: Problems observed at wells and boreholes**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No soak away pit</td>
<td>54.9%</td>
</tr>
<tr>
<td>No functional soak away pit</td>
<td>46.9%</td>
</tr>
<tr>
<td>Soak away pit NOT filled with stones</td>
<td>46.5%</td>
</tr>
<tr>
<td>No drainage canal</td>
<td>27.5%</td>
</tr>
<tr>
<td>No well lining</td>
<td>23.2%</td>
</tr>
<tr>
<td>Cracks on the apron</td>
<td>20.4%</td>
</tr>
<tr>
<td>Non-functioning handpump</td>
<td>19.0%</td>
</tr>
<tr>
<td>No manhole cover</td>
<td>18.3%</td>
</tr>
<tr>
<td>No well cover</td>
<td>17.5%</td>
</tr>
<tr>
<td>Crack in the headwall</td>
<td>14.7%</td>
</tr>
</tbody>
</table>

**Water Utilisation**

In order to understand how water is utilized in schools, head teachers were asked to state what water is used for in the school. The most commonly reported use of water at schools was for drinking (92.9%), followed by cooking/food preparation (56.5%). Notably, only 26.8% reported using water for handwashing purposes, and a further 30.1% mentioned water use for anal cleansing after defecation. This suggests that while the majority of schools do have access to water, pupils may not be using the water to support good hygiene behaviors.

**Figure 26: Main uses of water at schools**

- Drinking: 92.9%
- Cooking/food preparation: 56.5%
- Cleaning: 41.8%
- Anal cleansing: 30.1%
- Handwashing: 26.8%
- Laundry: 9.6%
- Flushing toilets: 2.9%

**Drinking Water Treatment and Handling**

Of the schools with access to water, just over half (57.1%) had drinking water provided at clearly marked points that are separate from the school’s main water supply. Of the 4 out of 10 schools that did not provide drinking water separate from the school’s main water supply, anecdotal evidence suggests that a lack of drinking buckets may be a contributing factor (in fact, Section 3.5 on hygiene materials supports this findings as only 51.0% of schools were found to have a drinking water bucket). This creates serious issues in terms of accessibility as one student in Kenema pointed out, “since the bucket was spoiled 1st term, there is no more drinking water in school”.

26
Based on information obtained from school head teachers, **45.9% of the drinking water supply in surveyed schools is not treated in any way to make it safe to drink.** Among those schools that did treat their drinking water, the most common method reported was chlorination (92.3%). However, when probed further about the frequency of water treatment, approximately one-third (38.5%) of the surveyed head teachers reported that it has been over 3 months since the last chlorination.

**Table 10: Summary of water treatment practices**

<table>
<thead>
<tr>
<th>Drinking Water</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>How water is treated</td>
<td></td>
</tr>
<tr>
<td>Chlorination</td>
<td>92.3%</td>
</tr>
<tr>
<td>Other</td>
<td>7.7%</td>
</tr>
<tr>
<td>If use chlorination, when was the last time water was chlorinated</td>
<td></td>
</tr>
<tr>
<td>Within the last 3 months</td>
<td>38.5%</td>
</tr>
<tr>
<td>Over 3 months ago</td>
<td>45.2%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>16.3%</td>
</tr>
</tbody>
</table>

Overall, problems observed at the point of use for drinking water at schools indicated a lack of accessibility for all students, particularly those with disabilities (59.8%) and younger children (51.9%). Lastly, abnormal smell and color of drinking water was observed at the point of use in over a quarter of schools.

**Figure 27: Problems observed with drinking water**

- Inaccessible to students/teachers with disabilities: 59.8%
- Inaccessible to younger children: 51.9%
- Treated with chlorination infrequently: 45.2%
- Abnormal smell: 31.2%
- Abnormal colour: 25.1%

While just over half of the surveyed schools (51.5%) keep drinking water in containers, very few were observed to practice safe water management: approximately 4 in 10 schools (39.3%) had drinking water containers that were covered and elevated above the ground. Furthermore, 8 in 10 (84.2%) head teachers reported that students use a shared cup for drinking.

In order to get a better understanding of the drinking water handling practices of students, field researchers casually asked over 500 student participants from the focus group discussions (FGDs) to get a drink of water following the end of the FGD. Researchers carefully observed how the students transferred water from the drinking water container and noted the following: all of the students were observed dipping a cup to retrieve water. In retrieving water, 75.0% used the same cup used to drink from; 21.9% dipped a cup/respectable reserved just for retrieving water and 3.1% used their

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17 Lack of accessibility was defined as any positioning of the drinking water at point of use which would make it difficult for younger or disabled children to reach. For instance, this may have included drinking water containers that are elevated high above the ground and out of reach.
hands. Similar to survey findings, the overwhelming majority of students were observed to share a cup for drinking. These unsafe water handling practices can easily lead to the contamination of the drinking water – putting students at risk to water-borne diseases, as well as other easily transferable illnesses.

Knowledge of Safe Water Management Practices
In order to assess their knowledge of safe water management practices, students were asked: ‘what can you do to make water safe for drinking?’ Overall, just over half (58.8%) of the interviewed students were able to name at least two safe water management practices, with a higher proportion of older students over the age of 10 (69.4%) reporting higher levels of knowledge relative to younger children under the age of 9 (49.3%).

<table>
<thead>
<tr>
<th>Schoolchildren with knowledge of at least two safe water management practices</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>57.2%</td>
<td>69.2%</td>
<td>71.3%</td>
<td>59.8%</td>
<td>60.0%</td>
<td>33.2%</td>
<td>58.8%</td>
<td></td>
</tr>
</tbody>
</table>

The majority of all students cited storing water in a covered container (59.9%), treating water (55.8%) and keeping the drinking water container clean (49.8%). A further 14.6% believed that nothing needs to be done to water as it is already safe for drinking, while 7.7% reported that they did not have any knowledge of safe water management practices. Very few students reported that it was necessary to use a different cup to transfer water than the one used for drinking. This lack of knowledge was translated into practice as 3 out of 4 students were observed to use the same vessel for transferring and drinking water (see above).

While both girls and boys displayed similar levels of knowledge of safe water management practices, there were noted differences between younger and older students. Across all measures, a higher proportion of older students were able to name safe water management practices relative to younger children.

Figure 28: Students’ knowledge of safe water management practices

<table>
<thead>
<tr>
<th>Store water in covered container</th>
<th>Treat the water</th>
<th>Keep water container clean</th>
<th>Keep drinking water container above ground</th>
<th>Nothing, water is already safe</th>
<th>Don’t know</th>
<th>Use different cup to transfer water</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=9 years</td>
<td>54.0%</td>
<td>47.1%</td>
<td>42.4%</td>
<td>17.3%</td>
<td>15.8%</td>
<td>11.3%</td>
</tr>
<tr>
<td>&gt;=10 years</td>
<td>66.2%</td>
<td>65.2%</td>
<td>57.7%</td>
<td>25.4%</td>
<td>13.4%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Total</td>
<td>59.9%</td>
<td>55.8%</td>
<td>49.8%</td>
<td>21.2%</td>
<td>14.6%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>
3.4. Handwashing with Soap

Access to Handwashing Facilities

The baseline study relied on two separate methods to collect data on handwashing with soap. The first method consisted of field researchers checking that all the required conditions were in place to enable students to wash their hands with soap (i.e. there was a functional handwashing facility with sufficient quantities of water and soap). In places where the required conditions were in place, a proxy measure was also added to check for evidence that the facility was being used (i.e. traces of water and soap as a sign that the facility is being used.)

The majority of surveyed schools (88.1 %) did not have handwashing facilities available. The situation varied across the targeted areas. While schools in Pujehun district had well above the average proportion of handwashing facilities (33.3%), the situation was much worse in Bombali and Port Loko (5.9%) districts where the proportion of handwashing facilities were well below the average.

Figure 29: Schools equipped with a handwashing facility, by district

![Bar chart showing handwashing facility availability by district]

In those schools with a handwashing facility, 73.5% had water available; however 64.7% had no soap available for handwashing. Furthermore, approximately one-third of the handwashing facilities were clearly never used (38.2%), and were unhygienic or not working properly (30.3%).

The location of the handwashing facility was also observed at each school to assess if children are more likely to wash their hands at specific critical times. Of the schools with handwashing facilities, 50% were located near the latrine facilities.

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18 The current study adapted the methodology applied in the Dubai Cares Initiative in Mali Baseline Survey.
19 A handwashing facilities can be any device – container, tap, basin, kettle, etc. - that provides about ½ litre of water each time hands are washed.
The most common types of handwashing devices observed were running water from a standpost or tap, a hand-pour water system (e.g. from a bucket or ladle), and to a lesser extent, a basin or bucket system whereby handwashing is done in the water.

Access to a Handwashing Facility that meets Set Standards

Working within the MEST overall standards for ‘Child Friendly WASH Facilities’ a minimum set of standards have been developed to evaluate school’s access to handwashing facilities. To be considered ‘up to standard’, handwashing points should be within close proximity to latrines (i.e. within 10 paces), have sufficient quantities of water and soap and be hygienic and in good working order. **Overall, only 2.8% of schools were found to have a handwashing facility that was ‘up to standard’**. Taking a less restrictive approach, schools with handwashing facilities that satisfy all of the above criteria, but are not within close proximity to the latrines, still only account for 3.9% of schools.

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to handwashing facilities</td>
<td>5.9%</td>
<td>10.0%</td>
<td>17.4%</td>
<td>5.9%</td>
<td>33.3%</td>
<td>10.0%</td>
<td><strong>11.9%</strong></td>
</tr>
<tr>
<td>Handwashing facility ‘up to standard’</td>
<td>3.9%</td>
<td>1.7%</td>
<td>2.2%</td>
<td>2.0%</td>
<td>11.1%</td>
<td>0.0%</td>
<td><strong>2.8%</strong></td>
</tr>
<tr>
<td>Handwashing facility ‘up to standard’ <em>but not near the latrine</em></td>
<td>2.0%</td>
<td>3.3%</td>
<td>2.2%</td>
<td>2.0%</td>
<td>14.8%</td>
<td>2.0%</td>
<td><strong>3.9%</strong></td>
</tr>
</tbody>
</table>
The data was analyzed to determine if there was a relationship between the existence of soap available at handwashing facilities and if hygiene education classes are offered to all pupils. However, it was concluded that there is no direct correlation between the existence of soap and the presence of hygiene education courses offered to students. This suggests that simply teaching hygiene education does not directly translate into practice. Other issues related to access to materials need to be explored further to understand the obstacles to getting soap and proper handwashing facilities set up at schools.

Figure 32: Problems observed at handwashing facilities

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No soap available</td>
<td>64.7%</td>
</tr>
<tr>
<td>Not located near the latrines</td>
<td>48.4%</td>
</tr>
<tr>
<td>Inaccessible to children with disabilities</td>
<td>38.2%</td>
</tr>
<tr>
<td>No traces of use</td>
<td>38.2%</td>
</tr>
<tr>
<td>Inaccessible to younger children</td>
<td>29.4%</td>
</tr>
<tr>
<td>No water available</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

Observed Handwashing Behavior in Schools

A second and more detailed approach to assessing student’s handwashing practices consisted of observing their behavior at two critical junctures: after using the toilet and before eating. Observations were only carried out at those schools which provided all the necessary materials for students to practice handwashing (i.e. a handwashing facility with soap and water that was functioning properly). Therefore, it is not the proportion of schools where handwashing is practiced that is being calculated, but rather the proportion of children practicing handwashing in those schools where the required conditions are in place.20

In total, 11 out of the 285 (3.9%) surveyed schools satisfied the conditions for structured observations to take place. This involved field researchers observing and noting students’ behaviour as they go about their normal activities, the aim being to obtain more robust and detailed information on their handwashing behaviour at school. Field researchers discretely but constantly monitored the activities of students in the 11 schools, recording his/her observations using pre-designed checklists with quantifiable fields.

Since the objective was to assess handwashing behaviours at critical times, observations were carried out either during the lunch hour (at schools which benefitted from WFP feeding programmes) or during the morning break.21 In both instances observations were made from the start of the break period and up to 20 minutes after the break. In total, 790 risk activities were observed.

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20 This approach is replicated from the Dubai Cares Initiative in Mali Baseline Survey.

21 The rationale for this decision is that many students tend to go home during the lunch break, making observations difficult. Therefore in the absence of a feeding programme, observations made during the morning break provided the best opportunity to observe students’ handwashing behavior.
Handwashing after Defecation

In the 11 schools in which hand washing behaviour was observed close to half (47.6%) of all students did not wash their hands after defecation. Overall, boys were less likely to wash their hands at all: 50.3% of boys compared to 45.4% of girls did not wash their hands at all. Among those students that did wash their hands, nearly equal proportions used water alone (28.8%) as did those that used soap (23.6%). Again, boys were less likely to use soap compared to girls. This is a discouraging finding as soap was made readily available to these students, however overall less than a quarter washed their hands with soap after defecation.

Observers also recorded the technique used by students who did wash their hands. Overall, the majority of students washed both hands after defecation (67.5%). On the other hand, close to one-third (32.5%) of the observed students washed only one hand after defecation. There was a slight gender differences in the technique used for handwashing after defecation as more girls (39.2%) were observed to wash both hands compared to boys (31.6%). Interestingly, students were more likely to wash both hands if they used soap (82.2%), compared to students who washed their hands with water only (55.5%).
When the data is further examined for gender differences, we see that boys most often used water alone and a larger proportion of girls washed both hands systematically with soap and water (23.2% compared to 15.5%) after defecation.

**Figure 35: Observed handwashing behavior after toilet use, by sex**

<table>
<thead>
<tr>
<th>Handwashing Method</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't wash</td>
<td>45.3%</td>
<td>50.3%</td>
</tr>
<tr>
<td>Wash one hand with water</td>
<td>14.4%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Wash both hands with water</td>
<td>16.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Wash one hand with soap</td>
<td>3.7%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Wash both hands with soap</td>
<td>15.5%</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

**Handwashing before Eating**

Observations of students’ handwashing before eating yielded significantly different results. Whereas nearly equal proportions of students used water or soap for handwashing after defecation, a very small number of students were observed to handwash with soap before eating. In fact, students were most likely to either not wash their hands at all (47.9%) or handwash with water alone (45.2%) before eating. Interestingly, not one boy was observed to wash hands with soap before eating, compared to 12% of girls.

**Figure 36: Observed handwashing behavior before eating**

<table>
<thead>
<tr>
<th>Handwashing Method</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't wash hands</td>
<td>41.5%</td>
<td>52.8%</td>
</tr>
<tr>
<td>HW with water only</td>
<td>58.5%</td>
<td>47.9%</td>
</tr>
<tr>
<td>HW with soap</td>
<td>45.2%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

Observing students handwashing technique before eating, we see that students were just as likely to wash one hand (50.2%) as they were to wash both hands (49.8%). Unlike the observed handwashing techniques of students after defecation, there was little difference in the technique used between those who washed with water alone and those that used soap before eating.
Compared to the observations of handwashing after using the toilet, a higher proportion of girls than boys did not engage in any handwashing behaviour before eating. However, no boys were observed to use soap before eating, compared to 12.1% of girls. It is also interesting to note that overall few students were observed to use soap before eating. In fact, the most common handwashing practice before eating involved using water only. This may be due to an aversion to using soap before eating as it may affect the taste of food.

In summary, it appears as though the observed students were more attentive to handwashing with soap properly after defecation compared to before eating. The reasons for this are not clear, especially given that students, of both sexes, displayed fairly similar levels of knowledge about the importance of handwashing with soap after defecation (81.2%) and before eating (78.1%) (See Table 15 below). One possible explanation was highlighted in a previous study where FGD participants cited the smell of soap as a disincentive to handwashing with soap before mealtimes as it was perceived to affect the taste of food.22

Table 14: Summary of observed handwashing behavior

<table>
<thead>
<tr>
<th>Description</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handwashing after defecation</td>
<td></td>
</tr>
<tr>
<td>Percentage of target schoolgirls systematically washing both hands with soap after defecating / urinating</td>
<td>23.2%</td>
</tr>
<tr>
<td>Percentage of target schoolboys systematically washing both hands with soap after defecating / urinating</td>
<td>15.5%</td>
</tr>
<tr>
<td>Handwashing before eating</td>
<td></td>
</tr>
<tr>
<td>Percentage of target schoolgirls systematically washing both hands with soap before eating</td>
<td>6.9%</td>
</tr>
<tr>
<td>Percentage of target schoolboys systematically washing both hands with soap before eating</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Overall, despite the presence of well-equipped handwashing facilities in the 11 observed school, nearly 50% of girls and boys did not wash their hands after defecation or before eating. This suggests that providing the necessary materials for handwashing is not enough to encourage students to practice handwashing with soap at critical junctures.

It is also worth noting that this study found much higher rates of handwashing behaviour than have been observed in comparable studies, and this is likely to be a function of the observations having only taken place in schools with handwashing facilities (approximately 4% of the overall sample surveyed qualified for handwashing observation by this criterion). It is also possible that the study itself introduced an observation bias, either through over-conspicuous observation on the part of the field researcher or discreet instructions given to children by the teacher/or head teacher.

Knowledge of Handwashing

Data from interviews suggest that students maintain high levels of knowledge on the critical times for handwashing with soap. When asked about the most important times to wash hands with soap, approximately 7 in 10 (68.8%) of all students interviewed could name at least 2 of the following critical times: after defecation, before eating and before preparing food.

Table 15: Summary of student knowledge of handwashing at critical times, by district

<table>
<thead>
<tr>
<th></th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schoolchildren who have knowledge of handwashing with soap after defecation</td>
<td>77.5%</td>
<td>79.9%</td>
<td>84.7%</td>
<td>77.0%</td>
<td>94.5%</td>
<td>83.7%</td>
<td>81.2%</td>
</tr>
<tr>
<td>Schoolchildren who have knowledge of handwashing with soap before eating</td>
<td>77.4%</td>
<td>86.1%</td>
<td>86.8%</td>
<td>81.1%</td>
<td>49.7%</td>
<td>71.1%</td>
<td>78.1%</td>
</tr>
</tbody>
</table>

Minor variations in the level of knowledge among age groups was noted with slightly more older students (10 years of age or older) being able to identify at least 2 critical junctures compared to younger students (9 years of age or younger) – 77.0% compared to 61.1% respectively.
Although the majority of students reported knowledge of the importance of washing hands with soap after defecation (81.2%) and before eating (78.1%), older children reported slightly higher levels of knowledge of all critical times (see figure below). There were even fewer differences reported in the knowledge levels of boys and girls – with the exception of more girls (22.5%) than boys (16.1%) having knowledge of handwashing before preparing food.

Figure 39: Student knowledge of critical times for handwashing

The majority of children participating in FGDs also displayed good knowledge of the importance of hand washing (HW) after using the toilet and before eating. When asked to report what they knew of HW, most children discussed having been taught formally, in the school environment, basic hygiene principles. As one group of children said, “We have been taught about cleanliness, they told us to always clean our environment to prevent illness, to wash our hands before eating mangoes and after using the toilet, and also after, when your hands are dirty”.

In addition, many children who participated in this qualitative research appeared to have a good understanding of the relationship between dirt, germs, and illness. As one child in Tonkolili district observed, “You might have germs on your hands, so if you eat food without washing your hand, you will take these germs into your system which may cause disease”. This knowledge of the relationship between behavior and health outcomes helped to underpin the importance of HW practice and its relevance for the children’s wellbeing.

Despite the reported high levels of knowledge on critical times for handwashing with soap across all age groups and sex, observations of students in schools with access to all the required materials for handwashing suggest that this knowledge does not always translate into practice.

Despite the majority of children reporting having been taught about basic handwashing practices and their importance, and demonstrating good knowledge of handwashing practice, facilities in
schools often made it difficult for them to put the knowledge into practice. For example, one group of girls in Pujehun district told the focus group facilitator that “the most important time of hand washing with soap are: after using the toilet, before eating food”, demonstrating their knowledge of the importance of soap use. However, when asked about their access to handwashing facilities, they reported that, “there is no queue for hand washing because there is no place for hand washing.” A boy in a Kenema focus group articulated this problem when he said “They teach us [about handwashing] but nobody provides us water when we are in school”.

This problem is compounded when children respond to messages on good hygiene practice by using their hands and water for anal cleansing, but then do not have access to appropriate handwashing facilities. A boy in a focus group held in Tonkolili district said that they did not have a specific location for HW at their school, and that they “only use the small water in the kettle (kullah) for anal cleaning which we use to wash our hands without soap”.

“**They teach us [about handwashing] but nobody provides us with water when we are in school**”
- Boy pupil commenting on why they do not practice handwashing at his school (Kenema)

### 3.5. Hygiene Materials

Supplies of hygiene materials and products in each school were checked by field researchers. The list of materials was based on those items comprising a hygiene toolkit established by UNICEF, MEST and MoHS. **Overall, surveyed schools were found to be largely deficient of a number of important hygiene materials.** In general, the most available hygiene items at schools were: plastic drinking buckets with covers (51.0%) and plastic cups (47.1%). However, over 7 in 10 schools had less than 10 plastic cups for the entire student population. The least available materials include the tools used to clean latrines, including cleaning soap, scrubbing brooms and brushes. The shortage of these hygiene materials contributes to the unhygienic conditions of school latrines and increases the exposure of school going children to feces-related diseases.

![Figure 40: Hygiene materials available](image-url)
A simplified list of ‘essential’ hygiene materials was developed for the purpose of this study. The items considered indispensible for a basic hygiene toolkit are: a plastic drinking bucket, plastic cup, scrubbing brush, scrubbing broom, cleaning soap and rubber kettle. The data shows that only four schools (1.4%) had a “basic” hygiene toolkit available.

3.6. Waste Disposal

Only half (50.5%) of the schools visited had dustbins available to pupils and teachers for waste disposal. The majority of schools were found to dispose of their solid waste inside the school compound (60.3%), either by burning the waste (30.0%) or dumping it (27.1%) within the confines of the school. Of the schools that burned solid waste inside the school compound, only 41.7% had built fences around the area where waste is burned. The unsanitary conditions in which targeted schools were observed to be disposing of solid waste can cause diseases and lead to infections. Open dumpsters and uncontrolled garbage become breeding grounds for insects, pests, snakes and rats that can infect children who play near these areas or carry them home. Skin diseases, eye problems, diarrhea, typhoid, scabies, cholera, intestinal parasites are only some health risks that are created by the unsanitary disposal of waste.

Figure 41: How Solid Waste is disposed of in Schools

<table>
<thead>
<tr>
<th>Method of Disposal</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage dump outside school compound</td>
<td>31.1%</td>
</tr>
<tr>
<td>Burned inside school compound</td>
<td>30.0%</td>
</tr>
<tr>
<td>Garbage dump inside school compound</td>
<td>27.1%</td>
</tr>
<tr>
<td>Burned outside school compound</td>
<td>6.8%</td>
</tr>
<tr>
<td>Buried inside school compound</td>
<td>3.2%</td>
</tr>
<tr>
<td>Buried outside school compound</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

3.7. Hygiene Education

In order to assess the status of hygiene education in schools, three questions were posed to all surveyed school head teachers: ‘Has a lesson on hygiene been taught in each class since the beginning of the school year?’, ‘If yes, what were the topics covered?’ and ‘Since the beginning of the school year, have the schoolchildren carried out any extracurricular activities to promote hygiene and/or sanitation within their community?’ Two additional questions about hygiene education were also asked to pupils in one-on-one interviews to triangulate findings.

Hygiene Education in School

According to head teacher reports, 8 in 10 (80.3%) schools have provided hygiene lessons to every class since the beginning of the school year. When the same question was posed to students, 82.9% could recall having a hygiene lesson during the same period. This suggests that the majority
of schools are in fact teaching hygiene to their students, although regional differences do exist with schools in Port Loko, Pujehun and Bombali being below the average.

Figure 42: Hygiene education lessons available to all students, by district

According to head teachers, the hygiene education lessons provided to pupils are primarily taught either as a component of the school’s core curriculum i.e. science class (76.0%) and/or as an integral part of a special module on healthy living (62.1%). The most common topics covered include: personal hygiene, handwashing (with soap and water at the most critical times), environmental hygiene, and proper food and water hygiene.

Extracurricular Activities

Approximately one-third (33.6%) of the surveyed head teachers reported that students had led extracurricular activities to promote hygiene outside of the school since the beginning of the 2011-2012 academic year. Regional variations were noted, with Kenema (15.5%) and Bombali (23.5%) districts being well below the average. Students were also asked during one-on-one interviews if they had participated in extracurricular hygiene activities during the same period. Similarly, 31.1% stated that they had. Based on these findings it is estimate that students from approximately 1 in 3 schools have participated in extracurricular activities to promote hygiene outside of their school.

The most common extracurricular activities reported included: drama skits on good health practices, community cleaning, and going door-to-door to give community health talks (mainly focused on putting an end to open defecation). Some schools even mentioned students traveling to neighbouring communities to put on a skit or give a health promotion talk.

With the low percentage of students leading extracurricular activities outside of school, it could be deduced that only a small number of pupils carry important hygiene and sanitation messages back to their families. However, during focus group discussions with pupils, many children mentioned informally talking to their families about what they learned during their hygiene education lessons in school.

In fact, the vast majority of FGD participants reported good knowledge of hygiene practices, obtained in large part at school. Methods of education varied, with more than one FGD facilitator reporting that the children had demonstrated their hygiene knowledge through the use of song. Many children reported that they had been able to utilize the hygiene education they had learnt in school to educate others in their households or community. One child, on being asked whether he discussed hygiene issues at home replied that, "I do not talk about hygiene or hand washing at home
but I sing the health and sanitation song my teacher taught and that is when I am playing with my mates or whenever an elderly person asks me to sing a song for him/her" (Younger children FGD, Moyamba district).

In most cases when children reported taking hygiene promotion messages back into their homes or community, they were able to discuss the issues openly, even passing on messages about the relationship between hygiene, germs, and illness. However, some children reported a conflict between the messages they were being encouraged to take home from their hygiene education classes, and their families’ beliefs. These conflicts ranged from their message merely not being accepted, to children being punished for their hygiene practice. One boy in Kenema reported that, "my mother usually flogs me at home when after toilet I wash my hand with water and soap, meaning that I waste water and soap". Nevertheless, community sensitization in conjunction with hygiene education in schools around handwashing behavior may help with ensuring that hygiene promotion messages are accepted more readily.

Table 16: Summary of hygiene education inside and outside of school, by district

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of target schools giving hygiene lessons to all their pupils</td>
<td>68.6%</td>
<td>80.0%</td>
<td>93.5%</td>
<td>78.4%</td>
<td>74.1%</td>
<td>86.0%</td>
<td>80.3%</td>
</tr>
<tr>
<td>Percentage of target schools where children conduct hygiene and sanitation promotion activities within their community</td>
<td>23.5%</td>
<td>15.5%</td>
<td>47.7%</td>
<td>39.2%</td>
<td>44.4%</td>
<td>40.8%</td>
<td>33.6%</td>
</tr>
</tbody>
</table>

3.8. Menstrual Hygiene Management

Data Collection Methods

As menstrual hygiene management is becoming an increasingly important element in WASH in Schools programming, the current study set out to collect baseline data on the knowledge, attitude and practices of schoolgirls in regards to menstruation.

Three separate sources of data were collected to assess the menstrual hygiene management of schoolgirls in the sample. First, one-to-one interviews were conducted with 10% of the student population at sampled schools. A section of the questionnaire was dedicated to learning more about menstrual hygiene management. All female interviewees over the age of nine were asked if they had started menstruating. 319 of the 2211 girls over the age of 9 (16.4%) reported they had begun menstruating, and only data from those girls are reported here. Among the 319 girls who had attained menarche, the vast majority were over the age of 11, with only 20 girls aged 9-10 (6.2%)
reporting that they had begun their period. 138 (43.3%) were aged 11-13, and 161 (50.5%) were aged 14-19.

**Figure 43: Age of surveyed schoolgirls who have attained menarche**

Second, head teachers were queried about the enabling environment for menstrual hygiene management within schools. Lastly, focus groups with older girls were conducted to gain deeper insight into the knowledge, practice and attitudes of schoolgirls towards menstrual hygiene management.

**Knowledge of Menstruation**

80.6% of the surveyed schoolgirls who had attained menarche reported that they had knowledge of menstruation before they had attained menarche. Respondents were asked where they had heard or seen information about menstrual hygiene management. The most common sources of information included their mother (57.7%), sister(s) (36.0%) and friends (18.7%).

The focus groups with older girls support the survey data which identified mothers as the primary source of information on menstrual hygiene management. Many girls discussed in particular how their mothers had taught them to stay clean and comfortable during their periods.

**Figure 44: Sources of information on menstrual hygiene management**

Girls were asked about their specific knowledge of menstruation. While only 26.6% of girls surveyed reported having received information on the physiological processes of menstruation, nearly 8 in 10 schoolgirls (77.6%) reported that they had received information on the use of cloths while menstruating.
Sampled schoolgirls were asked whether they know the cause of menstruation. **Only 16.5% of schoolgirls were able to accurately report the cause of menstruation as hormones.** The overwhelming majority (84%) reported puberty or the coming of age as the cause of menstruation, while 1 in 10 girls reported that they did not know the cause of menstruation. Only 4 girls reported that they believed the onset of menarche to be caused by a curse or sin, or by having sexual intercourse.

**Figure 46: Reported causes of menstruation**

These findings were supported by focus group discussions with older girls. In the survey, the majority of girls identified hormones or puberty/coming of age as the cause of the onset of menstruation. Similarly, in all the FGDs with older girls, participants described the cause of menstruation as a normal part of the maturation process. Many participants indicated their understanding of the onset of menstruation as a necessary precursor to being able to bear children. Much of the language used by FGD participants suggested that they saw the onset of menstruation symbolically as the end of childhood and beginning of adult life. The following extract from one FGD with older girls in Tonkolili is characteristic of all FGDs with this age group: “Girls should get their period because it shows signs that you are no longer a child and have become a big girl”. One respondent reported that her mother told her that “it is necessary for girls to get their period because it shows a sign of maturity and it also gives you a confidence that you will have to bear a child in the future”. Many

“It is necessary for girls to get their period because it shows a sign of maturity and it also gives you a confidence that you will have to bear a child in the future”  
- Girl student (Tonkolili)
respondents related this awareness of healthy development and the capacity for pregnancy to a concomitant need for increased caution around boys: “my mother said when you have started seeing your period you should not make love with a man if you do you will get pregnant and your school will spoil”.

The majority of girls (84.8%) believed that medication can help with menstrual pain management. However, only 14.6% of girls surveyed thought that physical activity can help to relieve the pain from menstruation. In focus groups, most girls discussed the pain that accompanied their periods fairly pragmatically, with many saying that they either took pills such as Panadol to relieve their pain. Others reported using salt water and traditional herbs and practices: “Like for me as soon as I notice that I am coming to see my period, I will straight away notify my mother, she usually boils some different types of native medicine for me to drink so that it can help the pain to ease and the medicine always helps me to feel less pain” (Older Girls FGD, Port Loko district).

Menstrual Hygiene Management Practices

Hygienic Management of Blood Flow

Girls surveyed were asked about their approach to hygiene management. Nearly all of the girls (96.8%) said that they always washed their sanitary cloths with soap and water. A much smaller proportion (22.6%) said that they always dry their sanitary cloths in the sun.

FGDs with older girls also suggested that participants were relatively comfortable managing their menstruation. Many girls discussed the ways in which they coped with bleeding, and how their mothers had taught them to stay clean and comfortable during their periods. FGDs suggested that the majority of girls were unable to afford disposable sanitary towels, but instead used fragments of cloth which were washed and re-used: “We use pieces of cloths. The changing of these cloths varies, sometime 3 times or twice a day. We do wash the pieces of cloths anytime we change them. The washed cloths are hung in the bedroom. Each cloth can be used for a period of 3 months, after which we throw them into our toilets” (Older girls FGD, Pujehun district).

Focus group data suggest that girls tend to avoid drying their sanitary cloths in the sun because they hope to be discreet in the way they manage their menstruation, or because of beliefs in the power of witchcraft. In Pujehun district, the girls told the FGD facilitator, “we don't dry our period clothes in the sun because we were told to take good care of them, if they fall in the hands of your enemy, he/she will stop you from having children; the person might use witchcraft to stop you from having children, that's why we dry our period clothes in a room”. Drying menstrual cloths in the sun can help to reduce the risk of genital infections from bacteria and fungi, which if contracted, may in turn affect school attendance. While schoolgirls exhibited fairly moderate levels of knowledge on
menstruation, more extensive education on puberty and feminine hygiene could elicit a sense of confidence about menstruation, which could be translated into hygienic practices.

**Practice of Restrictions during Menstruation**

Half of the schoolgirls surveyed reported practicing some form of restriction or exclusion during menstruation. Of these, the majority (85.3%) said that they did not attend religious functions or places when menstruating. Fewer girls reported that they didn’t play or participate in physical activity (38.7%) when they had their periods. Approximately 1 in 5 schoolgirls (21.3%) reported that they did not attend school when they were menstruating.

These quantitative data are supported by the information gathered through focus groups with older girls. None of the girls participating in the focus group research cited any cultural beliefs that would prevent them from attending school, although many reported that periods could affect their participation in other spheres, especially mosque attendance, cooking, and sexual activity.

**Figure 47: Restrictions practices during menstruation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t attend religious functions</td>
<td>85.3%</td>
</tr>
<tr>
<td>Don’t play/do physical activity</td>
<td>38.7%</td>
</tr>
<tr>
<td>Don’t go to school</td>
<td>21.3%</td>
</tr>
<tr>
<td>Other</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

**School Attendance during Menstruation**

Of the 319 girls who reported having started menstruating, 10% reported ever having been absent from school as a result of their menstruation. The mean number of days missed by these girls in the three months prior to being interviewed was 4.2 days.

A large proportion of girls reporting having missed schooldays as a result of menstruation cited pain or discomfort as the reason (48.4%). Fear of leakage (38.7%) and shame (32.3%) were also cited as major reasons for avoiding going to school when girls had their periods. Practical issues such as experiencing a heavy blood flow (29.0%), a lack of water supply (25.8%) or a lack of privacy for cleaning (25.8%) at school, and a lack of disposal systems for menstrual cloths (16.1%) were also given as reasons not to attend school while menstruating.

These quantitative data are supported by the information gathered through focus groups with older girls. Only a small proportion of girls surveyed said that menstruation affects their school attendance. Period pain was most often cited in FGDs as something that might prevent school attendance, but most respondents did not see the pain they experienced as sufficient for them to miss out on their education, and as discussed above, the majority of the girls indicated they had identified appropriate ways to manage their period pain. However in a few cases, respondents did report that exceptional pain might prevent them from attending.
Girls’ concerns about appropriate facilities in schools were supported by data from interviews with head teachers. Only 4 out of 285 head teachers interviewed indicated that their schools had water available in a private area for menstruating schoolgirls to use for personal cleaning; 2 out of 285 head teachers said that their schools had sanitation facilities available for schoolgirls to change sanitary cloths while at school.

Through FGDs girls discussed the fear and accompanying shame that would follow from other students knowing they were menstruating. The absence of proper facilities in the school was noted as increasing the potential for being shamed. One girl in Port Loko district observed that “there should be a private place for girls having their period to change their cloth without anyone knowing that they are having their period, because if there is an emergency - say girls get their period in school what will happen when there is no facilities for that in the school unless she get up shamefully and go home to take care of herself?” It is worth noting that some students felt that not attending school was more likely to reveal to other students that they might be menstruating, and that in those cases, shame-avoidance was (conversely) a motivation to go to school.

Similarly, almost all the girls participating in this research indicated that their parents would not prevent them from attending school while menstruating. In an FGD in Pujehun district, one of the older girls noted that “yes, our parents urges us to come to school even if we are on our period, especially our mothers, they always advice us to doubled our period clothes in case of any leakage because we have boys among us in school” (Older Girls FGD, Pujehun district). In fact, the vast majority of girls reported that their families “urge us to come to school even if we are on our periods”.

“**There should be a private place for girls having their period to change their cloth without anyone knowing that they are having their period, because if there is an emergency – say girls get their period in school what will happen when there is no facilities for that in the school unless she get up shamefully and go home to care of herself?”**

- Older girl student discussing the impact of lacking school facilities to manage her menses (Port Loko district)

**Enabling Environment**

Of 319 girls who reported having started menstruating, 22 girls (6.9%) reported that water was available in a private place for menstruating girls to wash themselves. However, only 6 girls (1.9%) indicated that their schools had sanitation facilities available for them to change their menstrual cloths; only 5 (1.6%) said that sanitary cloths were available at school. These data are similar to
those provided by head teacher interviews, in which only 4 out of 285 (1.4%) head teachers interviewed indicated that their schools had water available in a private area for menstruating schoolgirls to use for personal cleaning; 2 out of 285 (0.7%) head teachers said that their schools had sanitation facilities available for schoolgirls to change sanitary cloths while at school; and 2 out of 285 (0.7%) head teachers said that their schools had sanitary cloths available at the school for girls who are menstruating. **Data from both students and head teachers suggest that the overwhelming majority of surveyed schools do not have adequate WASH facilities in place for schoolgirls to effectively manage their menses.**

Schoolgirls were asked whether they agreed with the statement ‘teachers are very supportive when girls have their period’. **Only 7.7% of schoolgirls who had attained menarche believed teachers are very supportive of girls during menstruation.** Conversely, 84.1% of girls surveyed said that they disagreed with this statement.

In FGDs, girls were less equivocal, and the sex of the teacher was key in determining how supported they felt when they had their periods. Most girls participating in this research either stated that their teachers did not usually know when they had their periods, or that when female teachers did know, they showed support by allowing students to take leave from the classroom if they are in pain, or have unexpectedly started their period while in school. However, male teachers were not treated with the same confidence. Girls in Bombali district once again linked many of these issues back to their desire for facilities that would help them to manage their periods in private: “The teachers do not know because they are male teachers and we do not like to tell them. If there is a woman teacher, we tell her and will also want her to support us because she is like us and we believe too is seeing her period.”

**Schoolgirls Attitudes towards Menstruation**

In order to collect quantitative information on schoolgirls attitudes towards menstruation, a series of statements were read out to the students and using a Likert scale, they responded whether they strongly agreed, somewhat agreed, neither agreed or disagreed, somewhat disagreed or strongly disagreed. A visual tool was also added to the questionnaire to assist students in answering these questions. The visual was designed as a ladder with increasing numbers from top to bottom to correspond with the Likert scale in the questionnaire. At the bottom of the ladder a sad face was displayed to depict the score of 5=strongly disagree. A smiling face was displayed at the top of the ladder to depict a score of 1=strongly agree.

Girls participating in this research were asked to what extent they agreed with the statement ‘menstruation is normal part of growing up for all girls’. 95.2% of girls agreed with this statement. Only 3 girls participating in this research disagreed with this statement. As previously discussed, FGD participants overwhelmingly reported that they considered menstruation to be a normal part of the maturation process.

Girls were asked whether they agreed with the statement ‘all girls should be in school, even when menstruating’. 74.2% of girls agreed with this statement, and fewer than 35 girls (10.7%) disagreed with it. This is supported by only 10% of the survey respondents stating that they had ever missed school because of their period.
Girls were asked whether they agreed or disagreed with a number of other statements intended to elicit their views and attitudes on menstruation:

- In response to the phrase ‘menstruation is unclean and dirty’, 42.9% of girls said that they agreed, while 34.2% disagreed.
- In response to the phrase, ‘You feel shy during your period’, 58.1% agreed and 29.2% disagreed.
- In response to the phrase ‘You prefer staying at home and not to go out during your period?’, only 29.8% agreed, and 57.7% disagreed.
- In response to the phrase ‘You do not like to stand up in class when you have your period?’, 45.2% agreed, and 34.8% disagreed.

Findings suggest that the majority of schoolgirls do attach some level of shame and un-cleanness to menstruation. There is also a feeling of fear of having their menstrual status being identified by others.

**Figure 49: Measure of schoolgirls’ attitude towards menstruation**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Neither agree or disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>You prefer staying home/not to go out during your period?</td>
<td>19.0%</td>
<td>49.5%</td>
<td>33.4%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>You don’t like to stand up in class when on your period?</td>
<td>26.8%</td>
<td>33.4%</td>
<td>25.2%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>Menstruation is unclean and dirty</td>
<td>34.6%</td>
<td>23.8%</td>
<td>25.2%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>You feel shy during your period</td>
<td>40.9%</td>
<td>25.2%</td>
<td>23.8%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>All girls should be in school, even during menstruation</td>
<td>56.7%</td>
<td>6.7%</td>
<td>23.8%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>Menstruation is a normal part of growing up for all girls</td>
<td>87.3%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
<td></td>
</tr>
</tbody>
</table>

Further in FGDs, girls were primarily fearful of leakage, and were less likely to discuss abstract ways in which menstruation had affected their lives. However, for many it had affected the way they conducted themselves, especially with the opposite sex. This sometimes meant that the way girls regulated their interactions with boys changed, reducing their contact with them. This was usually either because of shame associated with bleeding (and not wanting their male friends to find out), or because they perceived themselves to have outgrown the play that they would have engaged in before initiating menstruation. According to one female respondent “we should keep away from boys because we don’t want them to notice that we are on our periods” (Older Girls FGD, Pujehun district). However, it is worth noting that some girls reported that boys wouldn’t know whether or not they were menstruating, and therefore that it would have no effect on the way they interacted with them.
3.9. Management and Monitoring of WASH Facilities

While access to WASH facilities is essential in schools, so too is the monitoring and management of those facilities to ensure their proper maintenance and sustainability. A series of questions were posed to head teachers to assess the governance of school WASH facilities. The data suggests that there is weak governance of WASH in Schools.

Financial Management

Water Points
Overall, 6 out of the 285 (2.1%) surveyed schools indicated they had a special budget reserved for the maintenance and operation of water points. When asked where they get funds to maintain water points in the absence of a special budget, over half (52.7%) of the surveyed schoolmasters reported that they simply do not have access to any funds to maintain or operate water points; while a further 20.0% reported that they manage on a case-by-case basis with what is available. Alternate sources for funds included collection from student’s families (13.5%), and SMC fundraising (8.0%). Given the lack of finances available for the maintenance and operation of water points, it is not surprising that only 37 schools out of the 285 (13%) surveyed schools reported having any water-related expenses since the beginning of the 2011-2012 academic year.

Sanitation and Hygiene Facilities

Only 4 out of the 285 (1.4%) surveyed schools reported having a special budget reserved for sanitation and hygiene facilities. Interestingly, all 4 schools with a budget were located in Bombali district.

Similar to the situation observed with the financial management of water points, over half (52.9%) of the schools visited stated that there were no funds available to help operate or maintain sanitation and hygiene points; while a further 26.4% reported that they manage on a case-by-case basis with what is available. Of the alternate sources of funding that did exist for sanitation and hygiene facilities, some were collected from student’s families (9.1%) and others through SMC fundraising (6.5%). Given the lack of finances available for the maintenance and operation of sanitation and hygiene facilities, it is not surprising that only 36 schools out of the 285 (12.6%) surveyed schools reported having any sanitation or hygiene-related expenses since the beginning of the 2011-2012 academic year.

Overall, it was determined that no surveyed school had created a specific budget line for water, hygiene and/or sanitation, identified at least one source of finance and paid out water, hygiene or sanitation-related expenses during the current academic year.

Table 17: Summary of school WASH financial management, by district

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well defined water budget</td>
<td>2.0%</td>
<td>3.3%</td>
<td>0.0%</td>
<td>3.9%</td>
<td>0.0%</td>
<td>2.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Paid expenses for water</td>
<td>9.8%</td>
<td>10.0%</td>
<td>8.7%</td>
<td>9.8%</td>
<td>22.2%</td>
<td>22.0%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Well defined hygiene/sanitation budget</td>
<td>7.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Paid hygiene/sanitation expenses</td>
<td>15.7%</td>
<td>10.0%</td>
<td>2.2%</td>
<td>7.8%</td>
<td>14.8%</td>
<td>26.0%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>
Division of Responsibilities
In general, it is the head teacher who oversees the day-to-day management of the WASH facilities. However, the data indicates that teachers (56.1%) and students (29.1%) are primarily responsible for directly carrying out the tasks of managing the WASH facilities in schools. While students are responsible for fetching water, filling drinking water containers and cleaning the facilities; teachers often determine the frequency of the tasks and designate who is responsible for carrying them out, while mobilizing and monitoring them.

School Management Committees (SMCs)
School management committees (SMCs) are a mainstay of the school system in Sierra Leone. In fact, the majority (93.7%) of surveyed schools had a SMC. The composition of SMCs was generally made up of an average of 9 members: with an average of 6 male and 3 female members. According to head teachers 60.0% of SMCs meet at least once a term, with a further 36.6% meeting two to five times each term. The minutes of the latest SMC meetings were provided to the field researcher in nearly half (49.8%) of the school with SMCs as evidence.

Over two-thirds (65.5%) of surveyed schools reported that SMCs play a role in the monitoring and management of WASH facilities. Specifically, SMCs were reported to be active in: monitoring (85.9%), maintenance and repair (38.4%) and financial management (28.5%) of school WASH facilities.

Overall, 12.3 % of surveyed schools SMCs were evaluated to be up to the standard of ‘functional and participative’. In order to meet this standard, SMCs must have ten or more members (four of which are female), meet at least once a term and are able to show as evidence the last meeting’s minutes. As the majority of SMCs have an average of 9 members, 3 of which are female, many schools did not meet the established standard. In fact, as outlined in Table 16, not one school in Pujehun district had an SMC which met the standard.

If the criterion of proof from the last SMC’s meeting is removed, the proportion of functional and participative SMCs rises only slightly to 18.9%. Nonetheless, even under this less restrictive definition, less than a fourth of the SMCs are considered to be functional and participative. Coupled with the findings on financial management, the data suggests that there is weak governance of WASH facilities among the surveyed schools.

School Health Clubs (SHCs)
Comparatively, only 31.9% of surveyed schools reported having a School Health Club (SHC). The composition of SHCs was generally made up of an average of 24 members: with an average of 12 male and 12 female members, most SHCs have achieving gender parity.

Overall, 7 in 10 SHCs had a School Sanitation and Hygiene Action Plan. Among this group, 81.0% are currently implementing the plan, 90.3% have appointed a focal teacher and 90.5% have a school health club to directly implement the Plan.

Taken together, only 7.7% of surveyed schools have a School Sanitation and Hygiene Action Plan, a designated focal teacher and SHCs to implement it, which is made up of at least 10-12 members in
total with equal gender balance. In Kenema district alone, not one SHC was found to be functional by this standard.

Table 18: Summary of SMC and SHC indicators, by district

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools with SMC</td>
<td>98.0%</td>
<td>83.3%</td>
<td>95.7%</td>
<td>98.0%</td>
<td>88.9%</td>
<td>98.0%</td>
<td>93.7%</td>
</tr>
<tr>
<td>SMC’s considered “functional and participative”</td>
<td>21.6%</td>
<td>15.3%</td>
<td>6.5%</td>
<td>6.0%</td>
<td>0.0%</td>
<td>18.0%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Schools with SHCs</td>
<td>33.3%</td>
<td>13.3%</td>
<td>58.7%</td>
<td>21.6%</td>
<td>40.7%</td>
<td>34.0%</td>
<td>31.9%</td>
</tr>
<tr>
<td>Schools with functional SHCs</td>
<td>3.9%</td>
<td>0.0%</td>
<td>19.6%</td>
<td>2.0%</td>
<td>22.2%</td>
<td>8.0%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

Monitoring of Facilities

While 41.8% of surveyed head teachers reported that WASH facilities are regularly monitored, only in half of the cases (21.0%) was a standardized, paper-based checklist used. Overall, only 3.9% of schools regularly conduct participative monitoring of the WASH facilities and their proper use. This percentage was measured by the number of schools where regular monitoring checklist are completed and signed by teacher(s), by the head teacher and/or a SMC member. As highlighted in Table 17, not one school in Pujehun district conducted participative monitoring of WASH facilities.

The proportion of schools which benefitted from a monitoring visit by technical services during the last school year was also assessed. These visits are important as they (1) allow for a thorough assessment of the school situation and needs in order to direct any interventions and (2) unannounced visits ensures that those in charge of school WASH facilities remain vigilant in maintaining good WASH conditions.

Head teacher reports revealed that only one-third (33.0%) of surveyed schools received a visit from a technical service within the last year. Most notably, development agencies (including UNICEF and NGOs) make up the largest percentage (46.8%) of the technical services bodies that visited in the last year. Fewer schools reported visits from the District Education Officers (DEOs) (5.3%) and the District Council (DC) (13.8%) - signifying that the local district authorities are not adequately carrying out their supervision roles, despite the fact that the majority of schools surveyed have many immediate WASH concerns that need to be addressed. Overall, only 14.7% of schools received a monitoring and supervisory visit within the year from the district technical services in charge of WASH in Schools (specifically the DEO, DHMT or the DC). However, regional variations were noted with only 3.3% of schools in Kenema reportedly having received a visit from the district technical service in the last year.

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23 The low proportion of schools meeting this standard is most likely due to the fact that the equation for this analysis requires that all requirements are met at each school. With only one-third (31.9%) of schools having a SHC to begin with, the further requirements were only met 7.7% of all surveyed schools.
Figure 50: Organizations and bodies that made technical visits to school WASH facilities, as reported by school head teachers

<table>
<thead>
<tr>
<th>Description</th>
<th>Bombali</th>
<th>Kenema</th>
<th>Moyamba</th>
<th>Port Loko</th>
<th>Pujehun</th>
<th>Tonkolili</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct regular, participative monitoring</td>
<td>5.9%</td>
<td>5.0%</td>
<td>2.2%</td>
<td>5.9%</td>
<td>0.0%</td>
<td>2.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Received monitoring visit from district technical service</td>
<td>25.5%</td>
<td>3.3%</td>
<td>23.9%</td>
<td>11.8%</td>
<td>22.2%</td>
<td>8.0%</td>
<td>14.7%</td>
</tr>
</tbody>
</table>

Table 19: Summary of monitoring of school WASH facilities, by district

3.10. Prevalence of Diarrhea

At the impact level, the WASH in Schools programme aims to improve the health of schoolchildren through child friendly WASH facilities. To this end, the current study provided the opportunity to assess the incidence of diarrhea among the sampled school population. The rates of diarrhea are an important indicator of the well-being of the students, as well as their exposure to one of the country’s deadliest water-borne diseases. As such, data on the prevalence of diarrhea will continue to be collected throughout the lifespan of the programme in order to assess the impact of the intervention.

In order to collect the relevant data, field researchers asked students in one-to-one interviews whether they had had diarrhea in the last 3 days. For the purposes of this study, and according to the logframe indicator, only data on the prevalence of diarrhea among 5-14 year old schoolchildren was included in the analysis. In this way information was collected from 7,433 primary schoolchildren.

In the schools surveyed, the diarrhea prevalence rate among girls aged 5-14 years old and in primary school was 13%. The rate varied across different age groups, with the youngest girls reporting a lower diarrhea prevalence rate than the older age group (girls aged 5-7 reported a prevalence rate of 9.4%, and girls aged 11-14 reported a rate of 16.1%).

Comparatively, the diarrhea prevalence rate among boys aged 5-14 years old and in primary school was higher than among girls, at 18.6%. The rate varied across different age groups, with the youngest boys reporting a lower diarrhea prevalence rate than the older age group (boys aged 5-7 reported a prevalence rate of 16.5%, and boys aged 11-14 reported a rate of 20.5%).
The overall average diarrhea prevalence rate among students surveyed was 15.5%. However, rates varied substantially between schools, with one school in Bombali district reporting a 0% prevalence rate, and another (also in Bombali district) reporting a rate as high as 87.5%. Furthermore, the minimum rate of 0% was observed in 30% of schools.

Diarrhea rates varied between districts, as well as within them. Port Loko reported the lowest average prevalence rate (6.2%), while Bombali district reported the highest (18.8% average prevalence rate). However, as above, there was substantial variation in prevalence rates within districts.

Causes of Diarrhea

Diarrhea prevalence in schools fulfilling certain conditions or with certain facilities (e.g. with HW facilities, latrines, etc) was compared with the average in other schools, to explore whether the presence or absence of those facilities affected the prevalence rate.

Table 20: Exploration of diarrhea prevalence contributing factors

<table>
<thead>
<tr>
<th>School has...</th>
<th>Mean diarrhea prevalence rate</th>
<th>Compared to...</th>
<th>Mean diarrhea prevalence rate</th>
<th>Difference in mean diarrhea prevalence rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to standard HW facility</td>
<td>8.4%</td>
<td>No up to standard HWM facility</td>
<td>15.7%</td>
<td>-7.3%</td>
</tr>
<tr>
<td>Water point up to standard</td>
<td>12.6%</td>
<td>Water point not up to standard</td>
<td>16.2%</td>
<td>-3.6%</td>
</tr>
<tr>
<td>Access to a Latrine</td>
<td>14.7%</td>
<td>No latrine</td>
<td>17.0%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>At least one improved latrine</td>
<td>14.7%</td>
<td>No improved latrine</td>
<td>16.6%</td>
<td>-1.9</td>
</tr>
<tr>
<td>Access to an improved water source</td>
<td>14.7%</td>
<td>No improved water source</td>
<td>16.2%</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Hygiene education lessons offered to each class</td>
<td>15.4%</td>
<td>Hygiene education lessons not offered to each class</td>
<td>16.6%</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Child to latrine ratio of less than 45</td>
<td>16.2%</td>
<td>Child to latrine ratio of more than 135</td>
<td>16.8%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Visible traces of open defecation</td>
<td>15.3%</td>
<td>No visible traces of open defecation</td>
<td>15.7%</td>
<td>-0.4%</td>
</tr>
</tbody>
</table>
The table above shows that in this study, for most measures there was little difference in mean diarrheal prevalence rates, regardless of the sanitation conditions present in schools. However, in schools with a HW facility that was up to standard (i.e. is by the latrine, has water and soap and is functioning properly) had a mean diarrhea prevalence rate of 8.4%, compared to mean 15.7% in schools with none. This suggests that the existence of a functioning HW facility may be associated with a lower diarrhea prevalence rate.

There also seems to be a positive relation between the prevalence of diarrhea and the access to a water point that is up to standard and the existence of latrines. It would be worth conducting more in-depth, specific studies to investigate whether this trend is confirmed, and whether the relation is a causal relation.

As the data in the table above suggests, there is no association between the prevalence of diarrhea at schools and the student-to-latrine ratio. Had the assumption of there being a link between the prevalence of diarrhea at school and the children to latrine ratio been confirmed then in the graph below, the points would form an almost straight diagonal line ascending from bottom left towards the top right-hand corner (meaning that the higher the ratio, the higher the prevalence of diarrhea). Yet here, the points appear scattered or even suggest that a lower child to latrine ratio is associated with lower diarrhea prevalence, suggesting no clear relationship between the two variables. Statistical testing (on the relationship between the child to latrine ratio and diarrhea prevalence) supports this interpretation, having found no statistically significant relationship between the two variables (Pearson correlation coefficient $r=0.112$, $p=0.135$).

**Figure 52: Association between the prevalence of diarrhea and children to latrine ratio**

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$^{24}$ The range around these means was also substantial, and therefore the results should be interpreted with caution.
3.11. Absenteeism

Data Collection Methods
As the lack of adequate WASH facilities in schools can lead to higher absentee rates, this study provided the opportunity to take a number of baseline measures of student’s absenteeism. This data represents one of the top-level impact indicators, whose progress will be assessed by UNICEF and partners throughout the programme.

In order to collect valid and reliable data on the average rate of absence in surveyed schools, two separate methods were employed. The first method consisted of field researchers asking students if they had been absent from school in the seven days preceding the survey during one-to-one interviews. The collection method was therefore based on the self-reporting of children for a recall period of one week. In the second method, field researchers reviewed the class register and recorded the total number of children absent on the day of the survey. Absentee data from the second method (based on the class register) was approximately 5% higher than student testimonials.

Before analyzing the data, it is important to highlight that a number of issues during the data collection period may have impacted the absenteeism rate for the students:

- The survey was conducted at the start of the farming season in Sierra Leone. Therefore, many of the students, especially in rural areas, were absent from school as they attended to their responsibilities on the farm.
- The National Primary School Examination (NPSE) had just been concluded prior to the start of data collection. In some schools, a large majority of class 6 students were on a break from school after completing their exams.
- In some communities, traditional holidays were underway during data collection. In these situations, large portions of the student body were found to be absent from school.

Method 1 – Student Testimonials
Overall, absentee rates were fairly similar for both male and female students. 22.4% of male students reported being absent from school in the last 7 days compared to 21.8% of female students. 11-13 year olds of both sexes appear to be absent less often than other age groups, but these differences are small. Self-reported absenteeism was highest among the 14-19 year olds, for both sexes. This may be due to children in this age group being more heavily involved in domestic and farming activities.

<table>
<thead>
<tr>
<th>Reported being absent over the 7 days preceding the survey</th>
<th>Girls</th>
<th>Boys</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 7 years of age</td>
<td>21.4%</td>
<td>20.8%</td>
<td>21.1%</td>
</tr>
<tr>
<td>8 – 10 years of age</td>
<td>22.2%</td>
<td>24.8%</td>
<td>23.5%</td>
</tr>
<tr>
<td>11 – 13 years of age</td>
<td>20.4%</td>
<td>19.4%</td>
<td>19.9%</td>
</tr>
<tr>
<td>14 – 19 years of age</td>
<td>26.0%</td>
<td>25.4%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Total</td>
<td>21.8%</td>
<td>22.4%</td>
<td>22.1%</td>
</tr>
</tbody>
</table>

25 This approach was adapted from the Dubai Cares Initiative Baseline Survey in Mali (2011). In an environment where school records can be poorly maintained, it is necessary to ensure a high degree of triangulation.
Method 2 – Class Register

Absenteeism as assessed by Method 2 found equal numbers of girls and boys absent on the day of data collection (average of 26% for both sexes across all the surveyed schools). The average absentee rate was slightly higher than what was found in Method 1. There were gender differences in the absenteeism rate at district level, but no overall pattern. The greatest differences were in Pujehun (where fewer girls were absent than boys), and in Kenema (where fewer boys were absent than girls). The absenteeism also varied by district, with Tonkolili students having the highest absenteeism rates for both sexes (32.3%) on the day of the survey.

Table 22: Absenteeism, by sex and district (Method 2)

<table>
<thead>
<tr>
<th>District</th>
<th>Girls %</th>
<th>Boys %</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombali</td>
<td>21.6%</td>
<td>22.7%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Kenema</td>
<td>27.5%</td>
<td>25.8%</td>
<td>27.1%</td>
</tr>
<tr>
<td>Moyamba</td>
<td>20.2%</td>
<td>20.1%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Port Loko</td>
<td>29.3%</td>
<td>28.1%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Pujehun</td>
<td>23.7%</td>
<td>26.7%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Tonkolili</td>
<td>32.3%</td>
<td>32.3%</td>
<td>32.6%</td>
</tr>
<tr>
<td><strong>Total Average</strong></td>
<td><strong>26%</strong></td>
<td><strong>26%</strong></td>
<td><strong>26%</strong></td>
</tr>
</tbody>
</table>

While overall both methods produced similar average absentee rates; when disaggregated by district, each of the methods revealed two very different patterns. For instance, whereas in Method 1 students in Bombali (34.9%) reported the highest rates of absenteeism, class registers in the same district showed a much lower proportion of students absent on the day of the survey. The geographic differences between the two methods are presented in the graph below. One cause for the difference may be due to the reasons enumerated at the beginning of the section which may have impacted the data collection on absenteeism at the district level (e.g. farming season, school breaks, holiday, etc.)

Figure 53: Average total absentee rates, by district and method

Correlation between Absenteeism and Lack of Latrines in Schools

It is often thought that a lack of latrines particularly affects girls once they reach puberty due to a lack of privacy when menstruating. They are therefore more likely to be absent from school than their younger schoolmates or boys. As the table below demonstrates, data from the survey supports this assumption.
The absence rate in schools with a latrine for girls aged 11-13 is 18.2%, and for girls aged 14-19 is 24.1%. The same rates in schools without latrines are much greater, at 26.1% and 32.2% respectively. This increase in absenteeism seen among girls aged 11+ is not present for boys, suggesting that latrine access may be having an effect on absenteeism for girls of menstrual age.

<table>
<thead>
<tr>
<th>Children declaring themselves as absent</th>
<th>GIRLS</th>
<th>BOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>School with latrines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-13 years</td>
<td>18.2%</td>
<td>19.2%</td>
</tr>
<tr>
<td>14-19 years</td>
<td>24.1%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Schools without latrines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-13 years</td>
<td>26.1%</td>
<td>20.0%</td>
</tr>
<tr>
<td>14-19 years</td>
<td>32.2%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Difference</td>
<td>+7.9%</td>
<td>+0.8%</td>
</tr>
</tbody>
</table>

A similar pattern can be observed where latrines are present but they are not separate for boys and girls. Older girls' absentee rates increase markedly where there is no separation between the latrines provided to boys and girls, compared to those where there is separation. Rates of absenteeism among 14-19 year old girls where latrines are sex segregated are 17.9% compared to 31.0% when they are not. Once again, this increase in absenteeism is not seen among the 14-19 year old boys. It is worth noting that the age patterns in these correlations are slightly different, with no access to latrines appearing to have an effect on the absentee rate of girls aged 11+, while having latrines present but not sex segregated appears to have an effect only on girls aged 14-19. Further study is required to understand these differences.

<table>
<thead>
<tr>
<th>Children declaring themselves as absent</th>
<th>GIRLS</th>
<th>BOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to latrines that are separated for boys/girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-13 years</td>
<td>18.8%</td>
<td>19.8%</td>
</tr>
<tr>
<td>14-19 years</td>
<td>17.9%</td>
<td>27.9%</td>
</tr>
<tr>
<td>Access to latrines that are NOT separated for boy/girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-13 years</td>
<td>17.7%</td>
<td>22.3%</td>
</tr>
<tr>
<td>14-19 years</td>
<td>31.0%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Difference</td>
<td>-1.1%</td>
<td>+2.5%</td>
</tr>
</tbody>
</table>

### 3.12. Exam and Upgrade Success Rate

This study provided the opportunity to take a number of baseline measures of education-related indicators for the previous academic year (2010-2011). These represent the top-level impact indicators, whose progress will be assessed by UNICEF and partners throughout the life-span of the programme.

**Exam Success Rates**

To calculate the average exam success rate, the number of children having obtained average final results of at least 5/10 is divided by the total number of children in each school.

The average exam success rate for boys was slightly higher than that of the girls (71.7% compared to 68.8%). The standard deviation of the average was 19%, indicating a moderate variation between schools. Differences in average exam success rates were observed across the targeted districts: Kenema (77.8%) and Port Loko (76.3%) pupils had the highest rates, while pupils in Pujehun (61.4%) and Tonkolili (63.7%) had the lowest.
Pass Rates
As some schools allow for conditional promotions for students who have not obtained a 5/10 exam score, the study also assessed the pass rate of students in the targeted districts. The average pass rate was calculated as the average ratio of children that passed to the next grade to the total number of children in each school.

Much like the exam success rate data, boys maintain a higher pass rate (77.9%) compared to girls (74.3%). The overall average pass rate of 76.7% suggests that 6% of students who did not obtain a score of 5/10 on their exams were able to pass to the next grade.

Table 25: Exam success and pass rates, by sex

<table>
<thead>
<tr>
<th></th>
<th>Exam Success Rate</th>
<th>Pass Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>68.8%</td>
<td>74.3%</td>
</tr>
<tr>
<td>Boys</td>
<td>71.7%</td>
<td>77.9%</td>
</tr>
<tr>
<td>Overall</td>
<td>70.6%</td>
<td>76.7%</td>
</tr>
</tbody>
</table>
4. Conclusion

This baseline study constitutes an overview of the water supply, sanitation and hygiene conditions in the 285 surveyed schools across 6 districts. An overall output of the WASH in Schools Programme is to ensure that all schools are brought up to ‘WASH in Schools standard’. This standard is made up of the following elements:

- Access to clean drinking water that is up to standard
- Access to sanitation facilities that meet the set standards
- Access to handwashing facilities that are up to standard
- Access to a basic hygiene kit conforming to standard
- Regular hygiene education sessions provided during the year to all students

Across the entire 6 districts, not one school meets the ‘WASH is Schools standard’. The trends and analysis have been outlined throughout this report and one thing is clear: developing child-friendly WASH in schools is a matter of urgency. With no schools currently up to standard, and the majority lacking facilities, with little to no governance of WASH in schools there is a large gap between the current status and the envisioned outcomes of the WASH in Schools Programme.

Table 26: Summary of individual school WASH standards

<table>
<thead>
<tr>
<th>UNICEF set standard</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target schools with access to clean drinking water</td>
<td>20%</td>
</tr>
<tr>
<td>Target schools with access to sanitation facilities that meet the set standards</td>
<td>4.6%</td>
</tr>
<tr>
<td>Target schools with handwashing facilities up to standards</td>
<td>2.8%</td>
</tr>
<tr>
<td>Target schools with “basic” hygiene kit available</td>
<td>1.4%</td>
</tr>
<tr>
<td>Target schools giving hygiene lessons to all their pupils</td>
<td>78.6%</td>
</tr>
<tr>
<td><strong>Overall proportion of schools that meet the composite ‘WASH in Schools standard’</strong></td>
<td><strong>0.0%</strong></td>
</tr>
</tbody>
</table>

4.1. Summary of Key Findings

In summary, all key findings from the study have been outlined below, followed by recommendations for future programming.

Sanitation

Access to Sanitation

- Over one-third (35.1%) of the schools surveyed did not have access to a latrine facility.
- Observed school latrines did not adequately address gender needs of pupils (6 in 10 school latrine facilities were not separated by sex), younger students or students with disabilities.
- The number of latrines available across surveyed schools was grossly insufficient. The average ratio of student-to-drop hole was 107:1 – over twice the MEST recommended standard of 45:1.
- Only 13 schools out of the 285 surveyed schools (4.6%) had access to a sanitation facility that was ‘up to standard’. (i.e. school latrine is improved, physically separated by sex, functioning and have a student-to-drop hole ratio that is no more than 45:1).
• The majority of school latrines were found to have a variety of problems: pit latrines were not covered; toilet compartments were not lockable from inside; there were cracks in the latrine superstructure; and an absence of latrine doors that could be opened and closed easily.

Care and Maintenance of Sanitation Facilities
• Lack of care and maintenance was observed at the majority of school latrines, these included: bad smell, lack of anal cleansing materials and visible excreta on the floor/walls/seat.
• Approximately 1 in 10 schools reported conducting regular cleaning of school latrines every day; while nearly 1 in 5 head teachers reported that the school latrines are ‘very rarely’ cleaned.
• Pupils are often delegated to clean the school latrines and often the task is assigned to older students or as a form of punishment.

Open Defecation
• Field researchers observed visible traces of open defecation (OD) at 4 in 10 surveyed schools.
• Quantitative data suggests that there are three main factors that may contribute to the practice of OD, namely: (1) the lack of latrines, (2) the existence of strong, offensive smells emanating from the latrine and (3) the lack of privacy due to latrines not having doors that open and close properly.
• Among students who reported that they do not use the school latrine, or only use it some of the time, the majority reported that the latrines were too dirty (50.8%) and too smelly (46.2%).
• Qualitative data from FGDs also suggest that issues of cleanliness, privacy, presence of flies, a lack of anal cleansing material and a lack of water encourage open defecation.

Access to Urinals
• Urinals were not widely available in the surveyed schools. A total of 72 (26.1%) out of the 285 surveyed school had a urinal facility available to students – 91% of which were traditional urinals made of local materials.

Water

Access to Water
• Close to 1 in 5 (16.1%) schools did not have access to a main source of water.
• Half of the surveyed schools were found to rely on unimproved sources of water (surface water was reported to be the second most common source of water for surveyed schools).
• The majority of surveyed schools collect water from a main source which is located outside of the school compound and shared with the larger community.
• Only 1 in 5 surveyed schools were assessed to have access to a water point that is ‘up to standard’. (i.e. the school’s main water point is an improved source that is functioning and provides enough water to meet the schools needs).
• The majority of water wells were found to be lacking many design standards meant to ensure the hygiene of the water: no well lining, cracks in the apron, no drainage canal and no soak away pit.
Drinking Water

- Just over half (57.1%) of the surveyed schools had drinking water provided at clearly marked points separate from the school’s main water supply.
- Approximately half of the drinking water supply in targeted schools was not treated in any way to make it safe to drink. Among those schools that did treat their drinking water, the most common method reported was chlorination. However, approximately one-third of the chlorinated water points had not been chlorinated in the last 3 months.

Handwashing with Soap

Access to Handwashing Facilities

- The majority of surveyed schools (88.1%) did not have handwashing facilities available.
- In those schools with a handwashing facility, 73.5% had water available; however 64.7% had no soap available for handwashing. Furthermore, approximately one-third of the handwashing facilities were clearly never used (38.2%), and were unhygienic or not working properly (30.3%).
- Of the schools with handwashing facilities, 50% were located near the latrine facilities.
- Only 2.8% of schools were found to have a handwashing facility that was ‘up to standard’. (I.e. handwashing points are within close proximity to latrines, have sufficient quantities of water and soap and be hygienic and in good working order.)

Handwashing Behavior of Students

- Overall, despite the presence of well-equipped handwashing facilities in the 11 observed schools, nearly 50% of girls and boys did not wash their hands after defecation or before eating. This suggests that providing the necessary materials for handwashing is not enough to encourage students to practice handwashing with soap at critical junctures.
- Handwashing with soap was less common before eating compared to after defecation.
- Girls were more likely to wash their hands with soap when compared to boys.

Handwashing Knowledge

- Despite the lower prevalence of observed handwashing behavior, students maintained high levels of knowledge on the critical times for handwashing with soap. Approximately 7 in 10 (68.8%) of all students interviewed could name at least 2 of the following critical times: after defecation, before eating and before preparing food.

Hygiene Materials

- Surveyed schools were found to be largely deficient of a number of important hygiene materials. The data shows that only 4 schools (1.4%) had a “basic” hygiene toolkit available.

Waste Disposal

- The majority of schools were observed to practice unsanitary waste disposal: just half (50.5%) of the schools visited had dustbins available to pupils and teachers for waste disposal; while the majority of schools were found to dispose of their solid waste inside the school compound without proper fencing or provisions.
**Hygiene Education**
- Hygiene education was widespread across the surveyed schools with 8 in 10 schools having provided hygiene lessons to every class since the beginning of the school year. However, only 3 in 10 schools have organised extracurricular activities designed to promote hygiene education.
- Some children did report a conflict between the messages they were being encouraged to take home from their hygiene education classes, and their families’ beliefs.

**Menstrual Hygiene Management**
- The majority of girls who have attained menarche had relatively high levels of knowledge about menstruation, its cause, and the management of blood flow from their mothers.
- One area of concerns was the finding that few menstruating girls dry their sanitary cloth in the sun (22.6%) for reasons of shame and fear of witchcraft.
- Data from both students and head teachers suggest that the overwhelming majority of surveyed schools do not have adequate WASH facilities in place for schoolgirls to effectively manage their menses.
- While the majority of girls believed that menstruation was a normal part of growing up, schoolgirls do attach some level of shame and un-cleanness to menstruation. There is also a feeling of fear of having their menstrual status being identified by others.

**Management and Monitoring of WASH Facilities**

**Financial Management**
- Overall, it was determined that no surveyed school had created a specific budget line for water, hygiene and/or sanitation, identified at least one source of finance and paid out water, hygiene or sanitation-related expenses during the current academic year.
- Very few schools had a budget allocated for the maintenance and operation of water points, sanitation and hygiene facilities (approximately less than 2%) resulting in a lack of structured plans for maintenance and repairs of WASH facilities.
- In most cases, funds are raised in an ad hoc manner – when a need arises. When the intended repair is fund-intensive, it often does not get completed. Consequently, in the absence of prior planning, schools are unable to meet unexpected and unplanned demands when breakdown of WASH infrastructure occurs.

**SMCs and SHCs**
- The existence of functional SMCs and SHCs was lower than expected across the surveyed schools: overall only 12.3% of surveyed schools SMCs were evaluated to be up to the standard of ‘functional and participative’; while only 7.7% of surveyed schools have a School Sanitation and Hygiene Action Plan, a designated focal teacher and a gender-balanced SHCs to implement it.

**Monitoring of Facilities**
- Only 3.9% of schools regularly conduct participative monitoring of the WASH facilities and their proper use.
Approximately 1 in 10 (14.7%) schools received a monitoring and supervisory visit within the year from the district technical services in charge of WASH in Schools (specifically the DEO, DHMT or the DC).

Most notably, development agencies (including UNICEF and NGOs) make up the largest percentage (46.8%) of the technical service bodies that visited in the last year- signifying that the local district authorities are not adequately carrying out their supervision roles.

**Prevalence of Diarrhea**
- Boys aged 5-14 years old had a higher diarrhea prevalence rate compared to girls (18.6% compared to 13.0%)
- Schools with access to latrines, a HW facility that was up to standard or a water point that is up to standard had lower reported rates of diarrhea.

**Absenteeism**
- There was an increase in absenteeism among girls aged 11+ in schools without a latrine (the increase was not present for boys), suggesting that latrine access may have an effect on absenteeism for girls of menstrual age. A similar pattern was observed where latrines were present but they were not separate for boys and girls.

**Exam and Upgrade Success Rate**
- The average exam success rate for boys was slightly higher than that of the girls (71.7% compared to 68.8%).
- Much like the exam success rate data, boys maintained a higher pass rate (77.9%) compared to girls (74.3%).

### 4.2. Recommendations

**Sanitation**

**Access to Sanitation**
- Collaborate with line ministries and other stakeholders to ensure that all targeted schools have access to latrine facilities. This may entail new construction or rehabilitation of existing sanitation facilities. Monitors should be established to ensure that all newly constructed or rehabilitated latrines adhere to the MEST overall standards for ‘Child Friendly WASH Facilities’.
- Consult or involve pupils and teachers on the designs prior to construction of any future WASH in Schools endorsed latrine designs.
- Ensure that all new WASH infrastructure is gender sensitive. This not only includes separate facilities for boys and girls, but also ensuring that facilities are available for older girls to promote menstrual hygiene management. Special considerations for adequate water supply for personal cleaning and privacy for older girls to change their sanitation cloths while at school need to be
made. Furthermore, allocating toilets on the basis of class year will ensure privacy and dignity for menstruating girls.

- Where improvements to facilities are required at the school, their planning and construction can be used as an effective tool for hygiene education. Students should be actively engaged throughout the construction process to seek their feedback. Once built, consider adding a practical demonstration on proper toilet use by teachers.

**Care and Maintenance of Sanitation Facilities**

- Encourage the development of gender-balanced SHCs to designate a timetable and schedule for latrine cleaning. The schedule should encourage joint cleaning of latrines by pupils and teachers. This will help to remove the stigma of punishment associated with cleaning of latrines by pupils.
- Pupils should receive practical training on latrine cleaning in the absence of needed hygiene materials.
- Develop strategies and interventions on behavior change and operation and maintenance of existing WASH facilities need to be implemented to ensure the sustainability and upkeep of latrine facilities. This may include designating SHC members to sensitize their classmates on the proper use and maintenance of latrines, as well as charging SHCs to monitor and ensure the proper use of sanitation facilities on a day-to-day basis.
- Where water scarcity is prominent an investigation is needed on alternative locally appropriate methods of maintaining cleanliness. The initial investigation can be conducted by involving IPs at the district level. Future latrine construction should look into designs that address these issues.

**Access to Urinals**

- Greater emphasis on including urinals in the MEST standards for child-friendly WASH facilities should be considered as integral to the Programme. The use of urinals reduces the amount of liquids draining into latrine pits extending their use. Furthermore, urinals are easier and less costly to construct and maintain than latrines used for the same purpose.

**Water**

**Access to Water**

- Establish achievable targets to ensure that all targeted schools have access to a dedicated improved source of water. This may entail the construction or rehabilitation of water facilities inside the school compound. Monitors should be established to ensure that all newly constructed or rehabilitated water points adhere to the MEST overall standards for ‘Child Friendly WASH Facilities’.
- Where improvements to facilities are required at the school, their planning and construction can be used as an effective tool for hygiene education.
- Explore alternative options to supplement water supply for other uses. Simple rain water harvesting techniques can ease the burden on the reticulated supply and reduce costs.

**Drinking Water**

- Concerted effort should be made to equip each school with drinking water buckets at the start of each school year. If funds are not available, a locally made calabash (fitted with a cover) could be placed in each classroom as a substitute until funds can be raised.
• Collaborate with the MoHS and development partners to develop effective water treatment solutions. Further studies to understand the challenges schools face in effectively treating their water will provide insight into any future water treatment solutions that will be viable.

**Handwashing with Soap**

**Access to Handwashing Facilities**

• Build functional handwashing stations adjacent to any newly constructed or rehabilitated school latrine.
• In the absence of newly constructed handwashing facilities, school handwashing facilities need to be innovative to cope with the often limited supply of water and soap. UNICEF can consider promoting the placing of handwashing facilities from locally available materials (such as the tippy-tap), or by establishing a nationwide competition among schools to develop an easy to use and maintain handwashing facility as part of SSHE programming.
• Develop a programme that encourages parents to donate one bar of soda soap for the year in order to ensure that handwashing stations are properly equipped.26

**Hygiene Materials**

• Engage school administrations, teachers and SMCs to develop strategies to ensure that basic hygiene materials are available at the school. One possible strategy might be to engage parents to donate or make a local equivalent of a needed hygiene material.

**Waste Disposal**

• Engage IPs to sensitize targeted schools on the hazards of unsanitary waste disposal. Using similar triggering techniques to those used in CLTS, IPs could encourage all schools to construct simple, locally-made dustbins and a rubbish fence.

**Hygiene Education**

• Develop a guide or additional curriculum for pupils to enable them to better promote hygiene among their peers and at household/community level.
• Consider linking SSHE activities with CLTS activities which are widespread throughout Sierra Leone at the community level. This will serve to strengthen the school-household-community link through innovative hygiene promotion.
• As UNICEF’s support to teacher’s training in SSHE recently began in 2011, it is necessary to ensure continued advocacy for, and monitoring of WASH/SSHE integration into teacher training programmes at national teacher’s colleges. This will support the sustainability and scaling up of the programme in addition to strengthening the skills and know-how of teachers to creatively develop and implement hygiene education.

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26 As a previous study conducted in Sierra Leone demonstrated, nearly all homes have access to soap. More specifically, affordable, locally-made soda soap is predominately used in rural households. See NBI (2011). “Baseline and KAP Survey for Hygiene Promotion and Public-Private Partnership for Handwashing with Soap (PPPHWS)”. Ministry of Health and Sanitation and UNICEF, Sierra Leone.
Menstrual Hygiene Management

- Advocate for the inclusion of menstrual hygiene management in the national MEST standards for child-friendly WASH facilities in schools. Special considerations for adequate water supply for personal cleaning and privacy for older girls to change their sanitation cloths while at school need to be made. As noted earlier, allocating toilets on the basis of class year will ensure privacy and dignity for menstruating girls.
- Promote greater education on puberty and menstrual hygiene management. For instance, educate girls (and mothers) on the necessity of sun drying sanitary cloths to prevent the development of bacteria and fungi.

Management and Monitoring of WASH Facilities

Financial Management

- Develop the capacity of school administrators and SMCs in planning, budgeting and funds mobilisation, through training and other skills/knowledge exercises.
- Encourage SMCs to mobilize parents for funding of minor operating and maintenance costs. For instance, parents can be engaged for the provision of soap, or locally made hygiene materials (broom, calabash, etc.).

SMCs and SHCs

- Encourage greater collaboration and engagement with SMCs and SHCs to strengthen the management and monitoring of school WASH facilities. Inclusion and ownership amongst these groups must be fostered through their participation at every stage in the programme.

Monitoring of Facilities

- Establish an effective monitoring and evaluation (M&E) system for the WASH in Schools programme in collaboration with all stakeholders (ministry, district and school level).
- Promote increased surveillance or auditing of school facilities by district officials, to better understand the existing provision and conditions of WASH in schools. This will also serve to increase enforcement of government policies and strategies.
- Greater monitoring of school WASH facilities should be carried out by schoolchildren themselves. This will allow stakeholder to gauge whether or not children are satisfied with the facilities and programmes in their schools, and to solicit their opinions on possible improvements. It will also have the impact of increasing the accountability of school administrators, teachers and students themselves.
- In order to strengthen the commitment to monitoring at the district level, develop Memoranda of Understanding (MoU) between school administrators, SMCs, and district authorities at the scaling-up phase of the WASH in Schools programme. The MoU should clearly outline implementation and monitoring duties and responsibilities of each stakeholder in line with the established M&E plan.


