

School WASH Programmes in Bangladesh: how much does it cost?

Applying the life-cycle costs approach in selected upazilas



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Contents

EXECUTIVE SUMMARY	6
1 BACKGROUND	10
2 AIMS OF THE STUDY.....	12
3 STUDY AREA AND RESEARCH APPROACH.....	13
3.1 Location of research	13
3.2 Sampling and data collection	14
3.3 Classification of life-cycle costs.....	16
3.3.1 Capital expenditure.....	17
3.3.2 Operational and minor maintenance expenditure	17
3.3.3 Capital maintenance expenditure	17
3.3.4 Expenditure on direct support.....	17
3.3.5 Expenditure on indirect support costs and costs of capital.....	17
3.3.6 Cost calculations and comparisons	18
3.4 Classification of WASH service levels in schools	18
4 FINDINGS AND REFLECTION ON WASH SERVICE LEVELS IN SCHOOLS AND THE METHODOLOGY USED	20
4.1 Testing the “access” criterion	20
4.1.1 Reflection on the “access” criterion.....	23
4.2 Testing the “use” criterion	23
4.2.1 Reflection on the “use” criterion.....	23
4.3 Testing the “reliability” criterion	24
4.4 Testing criterion for availability of safe drinking water	25
4.5 Testing criterion for assessing environmental protection.....	27
4.6 Testing the menstrual hygiene management criterion	28
4.7 Overall service levels achieved with proposed criteria	29
4.8 Findings on differently abled children.....	30
5 FINDINGS ON LIFE-CYCLE COSTS FOR SCHOOL WASH FACILITIES.....	30
5.1 Capital expenditure hardware and software	30
5.2 Expenditure on operational maintenance	32
5.3 Expenditure on capital maintenance	33
5.4 Expenditure on direct support	34
5.5 Summary of findings on costs that deliver a basic service level	35
5.6 BRAC value for money and financial sustainability	36
6 CONCLUSIONS	36
6.1 A methodology for assessing WASH service levels	36
6.2 The life-cycle costs of WASH in schools and the relationship between investments and the services provided.....	37
6.3 Cost benchmarks for sustainable WASH services in schools.....	38
7 RECOMMENDATIONS	38
7.1 For the BRAC WASH programme.....	38
7.2 For development partners.....	39
ANNEX 1 LIFE-CYCLE COSTING WASH SCHOOLS QUESTIONNAIRE.....	40
ANNEX 2 LIST OF SCHOOLS IN THE SAMPLE	50

Figures

Figure 1: Map with the location of the six study upazilas	13
Figure 2: Sanitation status in the schools of Bangladesh (UNICEF, 2012).....	18
Figure 3: Results using “access” criterion.....	22
Figure 4: Number of students per toilet per upazila.....	22
Figure 5: Results using “use” criterion	24
Figure 6: Results using “reliability” criterion	25
Figure 7: Results using “drinking water” criterion	26
Figure 8: Schools faecal sludge disposal method	27
Figure 9: Results using “environmental protection” criterion	27
Figure 10: Results using the “menstrual hygiene management” criterion.....	29
Figure 11: Results using ALL the service level criteria.....	29
Figure 12: Capital expenditure per student per upazila (Taka pv 2013)	31
Figure 13: Operational expenditure per year per student per upazila (Taka pv 2013)	33
Figure 14: Capital maintenance expenditure per year, per student per upazila (Taka pv 2013).....	34

Tables

Table 1: Study areas upazila profiles, 2014	14
Table 2: Number of schools in the sample per upazila	15
Table 3: The life-cycle cost components of a WASH service in schools	16
Table 4: Overall service level indicators used	19
Table 5: Access criterion.....	21
Table 6: Number of students and student/toilet ratio.....	21
Table 7: Use criterion.....	23
Table 8: Reliability criterion.....	25
Table 9: Drinking water criterion	26
Table 10: Environmental protection criterion	27
Table 11: Menstrual hygiene management criterion	28
Table 12: Capital expenditure for water and toilet facilities	31
Table 13: Capital expenditure for water and toilet facilities per service level.....	32
Table 14: Operational expenditure for water and toilet facilities	32
Table 15: Operational expenditure for water and toilet facilities per service level	33
Table 16: Capital maintenance expenditure for water and toilet facilities per service level.....	34
Table 17: Costs for water and toilet facilities in schools per service level	35
Table 18: Breakdown of construction and recurrent costs per student, for water and toilet facilities in schools	36

Abbreviations

ADP	Annual Development Programme
BMGF	Bill and Melinda Gates Foundation
CapEx	Capital Expenditure
CapManEx	Capital Maintenance Expenditure
CoC	Cost of Capital
DPHE	Department of Public Health Engineering
EKN	Embassy of the Kingdom of the Netherlands
ExpDS	Expenditure on Direct Support
ExpIDS	Expenditure on Indirect Support
GoB	Government of Bangladesh
IEC	Information, Education, Communication
LCCA	Life-Cycle Costs Approach
MDGs	Millennium Development Goals
MPO	Monthly Pay Order
OpEx	Operational expenditure
PV	Present Value
SB	Student Brigade
SMC	School Management Committee
SSHE	School Sanitation and Hygiene Education
WASH	Water Sanitation and Hygiene

Executive summary

This study has sought to apply a life-cycle costs approach (LCCA) to the sanitation and hygiene activities undertaken in 117 schools in six selected upazilas out of the 245 upazilas where the BRAC WASH in schools programme operates. These schools have received different funds from different sources over the years for their water, sanitation and hygiene facilities, as well as education and training on behavioural change. This study aims to clarify what has been achieved with the investments made – including the investments of the students and the schools themselves.

The purpose of this study is to improve the implementation of the WASH programme in schools by BRAC, to use evidence to influence other stakeholders in the sector to improve their programmes and to inform the post-Millennium Development Goals discussions on monitoring services in schools.

The main objectives of the study were:

1. To develop and test a robust methodology to assess service levels in schools by developing water and sanitation service criteria that can also be adopted by wider WASH in schools programmes, both for monitoring and value for money studies.
2. To understand the life-cycle costs of water and sanitation activities in schools where BRAC is implementing the WASH in schools programme.
3. To study the relationship (if any) between costs of investment and maintenance and the service levels provided for WASH in schools.
4. To assess the operation and maintenance costs and capital maintenance costs requirements in schools for interventions to reach at least a basic service level (indicative benchmark).

The life-cycle costs approach is a methodology developed by the WASHCost project, led by IRC, to explore the disaggregated costs of ensuring delivery of adequate, equitable and sustainable WASH services to a population in a specified area. The LCCA allows practitioners to: a) quantify the initial capital hardware costs of putting the sanitation infrastructure in place and the software costs of creating the demand for these services, b) quantify the ongoing costs of maintaining, supporting and sustaining behaviour change over time, and c) understand the value for money of each dollar invested. This study presents the first adaptation of the life-cycle costs approach to school WASH interventions. The BRAC WASH programme has a solid track record of monitoring indicators and cost records across Bangladesh, which was necessary to test and develop a robust methodology.

The BRAC school WASH programme started in 2007 in the educational institutes with two intervention protocols: (i) providing partial monetary support for construction of sanitary latrines in selected secondary level girls' or co-education institutes with a higher proportion of female students, and (ii) offering health education related to water, sanitation and hygiene to the students, teachers and staff of all the institutes selected under the intervention area. IRC has been a knowledge partner of BRAC WASH since 2005, providing technical assistance on monitoring, learning, supporting innovation in programme implementation and knowledge management. Value for money studies is one of the areas of support.

With the aim of having separate latrines for girls in schools BRAC WASH has installed 4,968 latrines in 245 upazilas till September 2014. BRAC WASH trained 47,928 teachers and

students during this period. The 117 schools which were selected for the sample include secondary schools for girls and co-education schools where there were no separate toilet facilities for girls or poor facilities before the intervention of the BRAC WASH School programme.

The school service level framework developed by the research team evaluates the water, sanitation and hygiene services provided using six criteria:

1. Access – The number of students per latrine, with separation for boys and girls.
2. Use – The safe use of latrines, water and soap available for handwashing.
3. Reliability – Clean latrines, availability of products for regular maintenance.
4. Drinking water available – Availability of safe drinking water.
5. Environmental protection – Faecal waste and wastewater safely disposed.
6. Menstrual hygiene management – Availability of pads for emergencies and facilities for disposal of used napkins.

These criteria have been scored in a four-level service “ladder”: from “no service”, to “sub-standard”, to “basic” and finally “improved”, depending on their status. Achieving a basic level is considered a good benchmark.

The study found that fulfilling all the six criteria is a challenge for schools in Bangladesh. From the 117 schools only 28 schools (24%) have scored “basic” on all the six criteria. 60% had at least one criterion in the “no service” category and the remaining 16% had at least one criterion under sub-standard. There was no school which has scored “improved” on all the criteria.

The most difficult to reach was the access criterion, namely the number of students per latrine, which is related to the amount of money spent on constructing and maintaining the facilities. About 30 percent of the schools had separate boys and girls toilets but the number of students per toilet was between 50 and 76, while 23 percent of schools are in the improved category which means that the number of students per toilet meets the Bangladesh standard (1 toilet for 50 students).

In almost half the schools in the sample it has been observed that latrines are used by students and teachers on most occasions and that 41% of schools have the facilities available for handwashing with water and soap. The schools with a sub-standard service lack both water for anal cleansing and soap. “No service” means that although the toilets were there, facilities were not being used because they were not functional or the students preferred to use the newer facilities. Most of the schools had clean and well-maintained toilets demonstrating a visible impact of the BRAC WASH programme.

After systems have been implemented in schools and tested once, the water quality has not been tested again in any of the 117 schools. There were only five schools with public tap water which means that the service provided is at best “basic” for the majority of the schools, but cannot be considered safe.

Around 35 percent of schools are openly dumping faecal sludge from the toilets creating water pollution and spread of diseases. 21 percent of the schools have an improved service level, these schools have a schedule for pit emptying and are safely disposing of the faecal sludge without causing any pollution.

Given that BRAC supported the schools in the study with menstrual hygiene facilities for girls ensuring that a covered waste bin is available inside the toilets for disposal of pads, it is no surprise to find that 96% of the schools have facilities available for the bulk disposal of napkins.

The support to hardware for the remaining school interventions is not part of the programme and limited (water quality, waste management, etc.) and this criterion has a lower overall score.

Different combinations of criteria were tested, but the number of toilets available in the schools is simply not sufficient for the total number of students. Adequate “access” therefore indicates how the schools in the sample have scored. In Bangladesh, the construction of more facilities is required because the existing ones are simply not enough for the number of students.

In this study, expenditure data was analysed for capital expenditure (hardware and software), operational expenditure, capital maintenance expenditure and direct support costs. The research team has examined the costs dating back to 60 years ago. No information was available for expenditure on indirect support and the costs of capital. The study found that schools that had lower costs for construction and lower costs for maintenance are providing a lower level of service to their students.

In total (and not per year), the costs per student of all the capital hardware and software expenditure on water and sanitation were Taka 587 per student (US\$ 8). Overall, the BRAC programme contributes with Taka 103 per student (US\$ 1.3) while the remaining costs were borne by the schools.

The main expenditure on operational maintenance relates mostly to costs for hygiene, followed by menstrual hygiene management, energy and minor repairs of the facilities. Costs related to water treatment were only reported in 14 schools. The overall operational maintenance costs are Taka 48 per student per year (US\$ 0.6) which is relatively low and shows that most maintenance which requires cash expenditure is not really taking place (i.e. providing safe water, faecal sludge and waste water treatment).

Capital maintenance expenditure, which reflects maintenance and irregular repairs, was mostly spent on pit emptying, upgrading the tube wells, replacing motors and pipes, painting the facilities and expanding the handwashing facilities. Considering that these costs started being reported mostly 10-15 years ago, the overall median per school for pit emptying is Taka 540 (US\$ 7) for every time it occurs, while the total capital maintenance expenditure over the years is Taka 2000 per school (US\$ 26) and Taka 8 per student (US\$ 0.1). The research team found that many facilities were broken down and new ones were built over the last 5-10 years, which might explain the high capital costs and the lower capital maintenance expenditure.

The salaries of the BRAC staff make up most of the direct support costs. In total, it is estimated that the direct support costs are about Taka 9,223 per school per year (US\$ 118) or Taka 41 per student per year (US\$ 0.5). From these, Taka 51 per school per year (US\$ 0.7) is spent on materials and leaflets for ongoing sensitisation meetings in schools. It was not possible to capture the time costs spent by the government and other partners in the schools over the years.

If only the schools that have achieved a basic service level are taken into consideration, benchmark costs indicate that at least Taka 814 per student (US\$ 10) needs to be spent on capital expenditure for both water and sanitation facilities in schools (including disposal and menstrual hygiene management) and at least Taka 108 per student per year (US\$ 1.4) needs to be spent on all recurrent costs, of which the continuous direct support to hygiene promotion activities and training of students and teacher brigades is absolutely critical to ensure sustainability of facilities and behaviours.

In only 25% of the schools the investments made have led to a basic service level. In the remaining 75%, the investments have failed to achieve their “good intentions”. This failure to achieve a basic level of service has many causes, not only financial, but it is clear that these schools have also failed to meet a required level of capital and recurrent costs.

For each Taka that BRAC invests per student on infrastructure construction (capital expenditure) for WASH facilities, the schools invest Taka 8. For recurrent costs, every year, for each Taka that BRAC invests to support the hygiene and menstrual hygiene management behaviour changes, the schools and students invest 2.5 times on major and minor maintenance of infrastructure ensuring its sustainability.

The major aspects that require attention to improve service levels in the schools in the sample are: the number of (separate) toilets for girls and boys, how the waste from the toilets is being disposed of and testing the quality of the water being provided to the students. BRAC WASH intends to find strategies to increase the collaboration with the Government and other funding agencies to expand the programme and intervention approach further, using the cost benchmarks derived from the study.

The BRAC WASH programme contributes only to some components of the school programmes. Parents, students and other development partners also contribute to the development of some of the school components, but overall the programmes could be more holistic and coordinated ensuring that all the elements for providing a water, sanitation and hygiene service in a school are monitored. The method for assessing service levels using six criteria or indicators will give insight into which schools will need more efforts to improve the overall WASH services provided to children and which other partners need to be sensitised to take the necessary actions for improving the conditions in the schools.

This study demonstrates and tests some of the criteria and indicators that can be used to measure service levels in schools. In the post-Millennium Development Goals discussions it has been recognised that future global water, sanitation and hygiene targets must extend beyond household level and include a wide range of settings including schools, workplaces, markets, transit hubs, health centres, etc. Schools and health centres are at the top of the priority list because of the potential health benefits to a large number of children and adults. Specifically, handwashing and menstrual hygiene management are considered to be universal priorities to be reached by 2030 so that girls are given the same opportunities and access to education as boys.

Adopting a service delivery and life-cycle costs approach to monitor services in schools can lead to better decision making while planning for sustainable school WASH interventions. It is expected that other researchers and teams working on monitoring in schools can provide further insight and feedback on the proposed indicators that inform the post-Millennium Development Goals discussions.

1 Background

The BRAC WASH Programme in Schools

Within the BRAC WASH programme, a School Sanitation and Hygiene Education (SSHE) programme is being implemented since 2007. Safe water and adequate sanitation in schools are as important to quality education as books and pencils, but in many schools, neither safe water nor basic sanitation facilities are provided. Additionally, many girls were not attending classes during menstruation due to lack of menstrual hygiene facilities. In view of this fact, the programme has supported over 5,000 schools, installing separate latrines for girls (entire blocks), including facilities for menstrual hygiene management and hygiene training.

The components of the BRAC School Sanitation and Hygiene Education (SSHE) programme include:

School Sanitation: BRAC identified through institutional surveys in 2006 that there was a high demand for separate latrines for girls in secondary schools. In 2007, BRAC WASH, with financial support from school authorities started constructing separate sanitary latrines for girls with water availability and menstrual hygiene facilities in girls' secondary schools or co-education secondary schools in 245 upazilas.

The technology used for the latrines is an off-set double pit latrine with running water facilities. Where running water facilities were not possible, tube wells were installed inside the latrines so that the girls could collect water for cleaning while maintaining their privacy. For handwashing, wash basins are installed with a glass and soap tray. Plastic paint is used to ensure easy cleaning. A covered waste bin inside and dumper outside the latrines have been provided to address disposal of sanitary napkins or pads. Menstrual waste collected from inside the latrine blocks is collected and disposed of in the dumper outside the latrine blocks.

To maintain financial transparency during construction, a purchase committee is formed consisting of three to four members representing both the school authority and BRAC staff (WASH programme, finance and accounts). The agreement with the school authorities is that after construction, the facilities are maintained by the schools and students. Student Brigades and School WASH Committees are formed in each school where construction has been completed. School Management Committee (SMC) members along with teachers and students receive an orientation on operation and maintenance of WASH facilities. The schools are being monitored by the BRAC WASH field staff.

Hygiene Education: Hygiene education in schools is considered a critical investment to ensure facilities are used and that students influence the behaviour of their families back home. The schools where sanitary latrines have been constructed are encouraged to conduct sessions on health and hygiene on a regular basis. Two teachers (one male and one female) from each school are given a day-long orientation on water, sanitation and hygiene related issues with emphasis on menstrual hygiene management. After attending the orientation, teachers prepare rosters to deliver messages on health and hygiene related issues in the schools on a regular basis. In those sessions students are encouraged to share this imparted knowledge with their families and communities. In the schools where BRAC didn't provide hardware support, only hygiene education is being disseminated through BRAC WASH staff.

Student Brigades: In each school a student brigade is formed with 24 students from Class Six to Class Nine (equal numbers of males and females in co-education schools who secure the top position in the merit list). At times, priority is given to the students having leadership qualities such as members from the Girls Guides, Boys Scouts and classroom monitors. More members can join the brigade and will be selected using the same criteria. Student brigades are responsible for proper use and maintenance of latrines as well as the total cleanliness of the school premises with assistance from their teachers. To further sensitise the students on WASH, eight students and two teachers from each selected school are given a three-day residential training at BRAC Learning Centers located in different parts of Bangladesh.

School WASH Committees: To ensure sustainability of the WASH programme in these schools, school WASH committees, comprised of 14 members with the headmaster as chairperson and a female teacher as secretary, are formed. In order to represent all stakeholders, members include teachers, students, parents, representatives from the school management committee, and the school cleaner. The committee meets on a bimonthly basis to review activities, including latrine use and maintenance. The overall responsibility of the committee is managing, maintaining and mobilizing funds for the school's sanitation.

Training of teachers and hygiene lessons: In order to sustain good hygiene behaviours, BRAC WASH conducts hygiene sessions through school teachers on a monthly basis. One male and one female teacher from each school in WASH sub-districts are trained on WASH issues and teaching methodology. The teachers are provided with specially designed flip charts and posters in order to educate their students on health and hygiene issues. They develop an action plan for effective implementation of and follow-up on WASH activities, and are assisted by BRAC WASH staff when required.

Creation of fund and availability of cleaning materials and soap: To carry out the objective for proper operation and maintenance of WASH facilities the schools are encouraged to create a fund to meet the expenses for soap, cleaning materials and so on. In addition, the school authorities are made conscious of the need to make sanitary napkins available for girls in schools in emergency situations. To ensure a smooth supply of sanitary napkins to schools, BRAC WASH staff help to establish a link between the school and the local BRAC health volunteers who sell sanitary napkins.

Programme achievements: With the aim of having separate latrines for girls in schools BRAC WASH has installed 4968 latrines in 245 upazilas till September 2014. BRAC WASH trained 47,928 teachers and students during this period. Hygiene messages were also being disseminated during this period in primary schools (Grade one to Grade five).

Through training, orientation and regular dissemination of menstrual hygiene messages in schools BRAC WASH broke the silence on menstrual hygiene issues. In most of the schools the school WASH committees and the student brigades are playing an important role in regular operation and maintenance of facilities to ensure regular use. An integrated approach to hygiene, sanitation and water and an intensive sustained engagement with the schools have been critical to deliver long-term change – but it requires long-term commitment to maintain and improve on gains already made. A strong commitment from the Government and the donor community has played a very crucial role in accomplishing these achievements.

2 Aims of the study

This study has gathered the costs and services provided to 117 schools¹ in six selected upazilas to provide insights into what it takes for BRAC and for the schools to provide sustainable water, sanitation and hygiene services in schools.

The purpose of this study is to improve the implementation of the WASH programme in schools by BRAC, to use evidence to influence other stakeholders in the sector to improve their programmes and to inform the post-Millennium Development Goals discussions on monitoring services in schools.

The main objectives of the study were:

1. To develop and test a robust methodology to assess service levels in schools by developing water and sanitation service criteria that can also be adopted by wider WASH in school programmes, both for monitoring and value for money studies.
2. To understand the life-cycle costs of water and sanitation activities in schools where BRAC is implementing the WASH in schools programme.
3. To study the relationship (if any) between costs of investment and maintenance and the service levels provided for WASH in schools.
4. To assess the operation and maintenance costs and capital maintenance costs requirements in schools for interventions to reach at least a basic service level (indicative benchmark).

These objectives were arrived at by understanding what criteria best define a basic level of WASH service in schools (section 4) and what are the costs per student for building and maintaining WASH facilities in schools (section 5).

The life-cycle costs approach is a methodology developed by the WASHCost project, led by IRC, to explore the real costs of ensuring the delivery of adequate, equitable and sustainable WASH services to a population in a specified area. These costs include the construction and maintenance of systems in the medium and longer term, taking into account the need for hardware and software, operation and maintenance, capital maintenance and the need for direct and indirect support, including training, planning and institutional support to the poorest. IRC has worked with BRAC WASH as a knowledge partner since 2005, providing technical assistance on monitoring, learning, supporting innovation in programme implementation and knowledge management. Value for money studies is also one of the areas of support.

A methodology has been developed to assess the costs for households, not institutions. This study is a first attempt to test and adapt the life-cycle costs methodology and analysis to school WASH programmes. The purpose of a life-cycle costs analysis is to give practitioners and planners a detailed overview of disaggregated expenditure that allows an assessment of past performance and enables improved targeting for future investment.

This study examines the historical expenditure on school programmes by a range of actors: BRAC WASH, the Government of Bangladesh (GoB), other partners and individuals in the 117 schools in six upazilas of Bangladesh. The research team has looked at school records,

¹ For a list of the schools which were selected, please see Annex 2.

some going back 60 years. Using this data, as well as assumptions gathered from key informants, the case study seeks to provide a demonstration of how the methodology can inform monitoring, financial planning and service sustainability of school WASH programmes beyond Bangladesh.

3 Study area and research approach

3.1 Location of research

The BRAC School WASH programme has been implemented in 245 upazilas from 2007. From these, six upazilas (see map Figure 1) were selected where school toilets were constructed during the period 2007-2008. The upazilas are: Bianibazar, Birganj, Dumuria, Gabtoli, Hossainpur, Rangunia. The population and sanitation profile of these upazilas is summarised in Table 1.

Figure 1: Map with the location of the six study upazilas

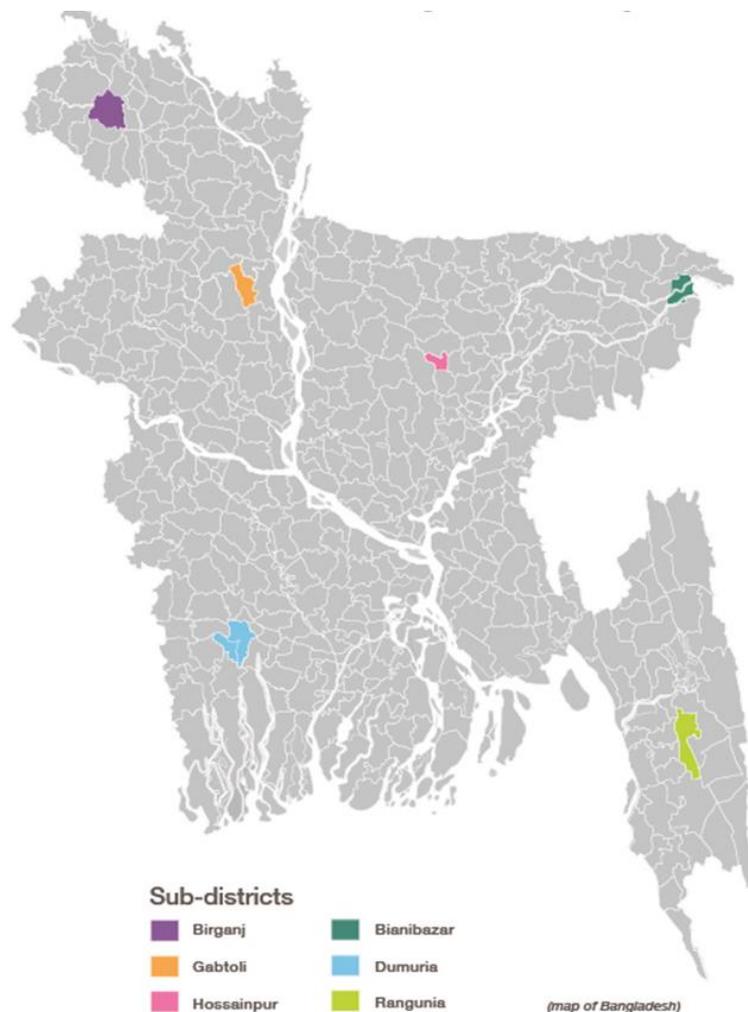


Table 1: Study areas upazila profiles, 2014

	Total population	% of ultra-poor households	Sanitation coverage (2014)
Bianibazar	210,673	17%	87%
Birganj	309,182	15%	84%
Dumuria	307,644	18%	87%
Gabtoli	318,682	19%	83%
Hossainpur	212,279	9%	72%
Rangunia	365,945	24%	87%

Source: BRAC MIS system.

3.2 Sampling and data collection

The data sources used in the study were collected from the 117 schools in 2013 using a survey questionnaire (See Annex 1) and observations and discussions with the school children, teachers and head masters. For collecting service levels and costs, more than 200 variables were used in the testing of the methodology to understand which variables are most reliable and deliver the best results. With the results from the study it is expected that data collection can be simplified for follow-up research and monitoring.



Testing questionnaires in secondary schools in Mymensingh with separate discussions with students and teachers.

Photo: C. Fonseca, IRC.

The methodology required that schools had maintenance costs, therefore the sample had to include schools with latrines constructed before 2008 and which had received financial support from BRAC. Since one of the objectives was to capture the full costs of an integrated water, sanitation and hygiene programme including menstrual hygiene management, primary schools were excluded from the sample.

The sample was constructed using the following stratification:

- **Step 1:** Selecting the six divisions where the BRAC WASH I programme was implemented from 2007-2008.
- **Step 2:** Selecting the 150 upazilas where WASH I school interventions took place. These included secondary schools for girls and co-education schools where there were no separate toilet facilities for girls or poor facilities before the intervention of the BRAC WASH school programme.
- **Step 3:** Selecting one upazila from each of the divisions randomly. Six upazilas were selected: Dumuria, Hossainpur, Gabtoli, Birganj, Rangunia, Bianibazar.
- **Step 4:** Listing all the schools in the selected six upazilas (resulted in 200+ schools).
- **Step 5:** The schools were arranged in sequence using the “year of latrine construction” and all the schools where the latrines were constructed in the years 2007 and 2008 were considered for the sample. The assumption was that the choice of older schools would provide more data on capital maintenance and operational maintenance. As a result, 117 schools were eligible for the study (see Annex 2 for the list of schools). From these schools, all are considered rural except four schools which are classified as urban (Table 2).

Table 2: Number of schools in the sample per upazila

	Bianibazaar	Birganj	Dumuria	Gabtoli	Hossainpur	Rangunia
Urban schools	1	1	0	1	0	1
Rural schools	2	31	38	27	2	13
Total	3	32	38	28	2	14

Most of the 117 schools selected for the sample are Monthly Pay Order enlisted schools (Bangladesh Government pays for the salaries of the teachers in these schools) and other schools run by private authorities. The children in these schools come from poor and below-middle-income families. Students in these schools range from 66 to 826 children and teachers from 8 to 19. The schools charge nominal school fees of Taka 70 to 150 per month (equivalent to US\$ 0.9 - US\$ 1.9²) depending upon socio-economic status of the households in the different geographic regions of Bangladesh.

After selecting the schools, the regional office staff involved was requested to nominate suitable field staff who could collect the data from schools. The regional managers nominated 12 staff members for this purpose who were either working in that upazila or in a nearby upazila. The field staff was trained on data collection, tools and methods to collect the cost information in 2013. Head office staff provided additional support by participating in the data collection. The regional BRAC managers made available to the researchers, both the school contribution and BRAC contribution costs for toilet construction for validation and cross checking of the data collected at the schools.

For data collection in 2013, the following steps were taken between July and December:

- **Month 1:** Developing methodologies (costs and service levels), pre-testing questionnaires in six schools with field staff, revising and improving questionnaires.
- **Month 2:** Translation of questionnaires into Bangla and developing guidelines for data collection, training field staff at BRAC HQ.

² 2013 yearly average market exchange rate 1 US\$ = 78,10 BDT.

- **Month 3 and 4:** Refresher training of field staff at division level, data collection and transporting surveys to HQ.
- **Month 5 and 6:** Data entry and cleaning. Data analysis, presentation of preliminary results and feedback, discussion of next steps.

Overall the process of training the field staff and monitoring their field work was challenging due to the political unrest in the country at the end of 2013. Given that at least one hour was needed for the questionnaires, the teams had to coordinate class schedules and take up the end-of-year school exams into the planning. Birganj was the most difficult upazila as the schools were used as election polling booths and data could not be collected on the scheduled dates so they had to be revisited on dates suitable to the schools. The filled-in questionnaires from most upazilas reached the office only after 15 days as buses were not running, there was widespread violence and there was no other means of transport. There were delays in data entry which also affected the report finalisation.

3.3 Classification of life-cycle costs

Expenditure made by the schools, by BRAC, by individuals and by the students has been classified according to the WASHCost life-cycle costs framework that makes a distinction between one-off capital investments and recurrent annual expenditure (Table 3).

In this study, expenditure data was analysed for capital expenditure (hardware and software), operational expenditure, capital maintenance expenditure and direct support costs. No information was available for expenditure on indirect support and the costs of capital.

Table 3: The life-cycle cost components of a WASH service in schools

Cost components		Definition
<i>Capital expenditure</i> The costs of providing a service where there was none before; or of substantially increasing the level of services	Capital expenditure hardware and software (CapEx)	One-off capital investment in girls and boys latrine hardware such as excavation, lining, slabs, superstructures, handwashing facilities, drinking water facilities, menstrual hygiene management facilities, etc. Software costs include investment in work with stakeholders prior to construction or implementation, such as school teachers and children's education, one-time hygiene promotion, training materials, training of trainers, school management committee meetings, etc.
	Operational expenditure (OpEx)	Typically regular operating and minor maintenance expenditure, such as soap and other cleaning materials, payment of person that does the cleaning, water treatment products, electricity bills for motor pumps, materials for menstrual hygiene management (bin, napkins), etc.
<i>Recurrent expenditures</i> Service maintenance expenditure associated with sustaining an existing service at its intended level	Capital maintenance expenditure (CapManEx)	Asset renewal and replacement costs; occasional costs that seek to restore the functionality of a system, such as replacing a slab or emptying a septic tank, sludge disposal.
	Expenditure on direct support (ExpDS)	Recurrent costs related to: the long-term IEC programmes and the costs of supporting school-based organisations such as sanitation and hygiene groups, as well

Cost components		Definition
		as local and intermediate level government institutions.
	Expenditure on Indirect Support (ExpIDS)	Expenditure on macro-level support, including planning and policy making, to decentralised district, municipal or local government.
	Cost of Capital (CoC)	Cost of interest payments on micro-finance and loans used to finance capital expenditure. Cost of any returns to shareholders by small scale private providers.

Source: Adapted from Fonseca et al. 2011. WASHCost Briefing note 1a: Life-cycle costs approach – costing sustainable services. IRC: The Hague

3.3.1 Capital expenditure

Capital expenditure was spent mostly on toilet construction, tube wells in and near the toilets and dust bins for disposal of sanitary napkins. The capital costs were shared between BRAC and the school management of the schools in the six upazilas, most of the capital expenditure was spent on constructing the toilets, water systems at schools. BRAC contributions varied from Taka 35,000 to 45,000 (US\$ 448 - US\$ 576) depending on the toilet type and other facilities like tube wells or handwashing stations. With respect to water systems, tube wells were provided when the schools were lacking water facilities, so that safe hygiene practices such as handwashing could be followed by the students. Running water through a tap or tube well was provided in all the latrines for girls, whether the schools had had water facilities or not.

3.3.2 Operational and minor maintenance expenditure

Operational and minor maintenance expenditure of the school on sanitation, drinking water and menstrual hygiene management included cleaning materials, equipment, chemicals or detergents, sanitary napkins, waste bins, glasses and ladles for drinking and soap for handwashing. It also included minor repairs like bolt and nut fixing, leakage repair, electricity bills and salaries of the cleaners.

3.3.3 Capital maintenance expenditure

The unexpected, irregular costs for larger maintenance requirements were mainly related to pit emptying, replacing the super-structure or upgrading the toilets, sanitary napkin disposal unit repairs and painting.

3.3.4 Expenditure on direct support

For ongoing support to schools, the BRAC WASH programme spent mostly on salaries and materials for awareness building and training on sanitation and hygiene. As part of the BRAC strategy, student brigades in each school were responsible for monitoring and maintaining the cleanliness in the school and propagate key sanitation and hygiene messages. In each school, one/two focal teachers are identified and given training on menstrual hygiene management and these teachers are expected to guide the girl students in menstrual hygiene management practices in their respective schools.

3.3.5 Expenditure on indirect support costs and costs of capital

Expenditure on indirect support represents the government expenditure at national level, including planning and policy making for WASH programmes in schools. These costs could not be captured in this study for the selected schools. If they have been made they will represent a negligible percentage of the overall costs. Costs of capital (interest rates on the

borrowed amount from donor agencies if any) were not reported by any of the interviewees and therefore not applicable to this case study.

3.3.6 Cost calculations and comparisons

Expenditure data collected from different years has been converted to 2013 values using the World Bank's GDP deflator figures to enable currency comparisons (World Bank, data bank, 2014). Additionally, expenditure data has been converted to US dollars using the yearly average market exchange rate for 2013: US\$ 1 = BDT 78.10 (Taka will be used in the document).

3.4 Classification of WASH service levels in schools

The research team has revised the literature on norms for water supply and sanitation services in schools. The only national and international norms found relate to the ratio of students per toilet (WHO, 2009³). The Bangladesh standard is 1 toilet per 50 students.

The most relevant document found that discusses toilet ratios was the 2012 UNICEF state-of-the-art report on WASH in schools in Bangladesh⁴. This study mentions that in Bangladesh, on average, there is a toilet for every 130 students and that the majority of facilities is in extensive need of repair (Figure 2) making it urgent to discuss how and who can cover maintenance costs. A study on the qualitative analysis of well-managed school sanitation in Bangladesh (Chatterley, C., Javernick-Will, A. Linden, K. et al, 2014) also emphasises the importance of financial support for maintenance costs⁵.

Figure 2: Sanitation status in the schools of Bangladesh (UNICEF, 2012)



Taking into account the WHO standards, and in the absence of further national or international norms, the team had to develop minimum criteria that can measure a WASH service in a school. Besides the access criterion, which is defined by the ratio of students per toilet by WHO, the remaining criteria were tested and developed by the BRAC/IRC team. After testing the questionnaires and preliminary analysis of the data, the service levels and indicators have been adjusted twice to arrive at the most appropriate criteria that could be

³ Adams, J. Bartram, J., Chartier, Y and Sims, K. 2009. Water, Sanitation and Hygiene standards for schools in low-cost settings. World Health Organization, Geneva. Available at: http://www.who.int/water_sanitation_health/publications/wash_standards_school.pdf

⁴ UNICEF. 2012. WASH for school children. State-of-the-art in Afghanistan, Bangladesh, Buthan. India, Maldives, Nepal, Pakistan and Sri Lanka. UNICEF Regional Office for South Asia: Kathmandu. Available at: http://www.unicef.org/wash/schools/files/UNICEF_WASH_for_School_Children_South_Asia_Report.pdf

⁵ Chatterley, C., Javernick-Will, A. Linden, K. et al, 2014. A qualitative comparative analysis of well-managed school sanitation in Bangladesh. In BMC Public Health 14:6. Available at: <http://www.biomedcentral.com/1471-2458/14/6>

used for measuring the school WASH service delivery across Bangladesh (and other countries too).

Ideally the team wanted to keep the service level indicators to four. But ultimately the proposed methodology has six criteria. It is expected that other researchers and teams working on the post-MDG measurements in schools can provide further insights and feedback on the proposed indicators.

The school service level framework developed evaluates the water, sanitation and hygiene services provided using six criteria:

1. Access – The number of students per latrine, with separation for boys and girls.
2. Use – The safe use of latrines, water and soap available for handwashing.
3. Reliability – Clean latrines, availability of products for regular maintenance.
4. Drinking water available – Availability of drinking water and safety.
5. Environmental protection – Faecal waste and wastewater safely disposed.
6. Menstrual hygiene management – Availability of pads for emergencies and facilities for disposal of used napkins.

Detailed criteria used are described in Table 4. These criteria have been scored in a four-level service “ladder”: from “no service”, to “sub-standard”, to “basic” and finally “improved”, depending on their status. Achieving a basic level is considered a good benchmark.

The BRAC WASH programme contributes only to some components of the school programmes. Parents, students and other development partners also contribute to the development of some of the school components, but overall the implementation of the different water, sanitation and hygiene programmes in schools is not coordinated among different institutions and organisations.

This method for assessing service levels using six criteria or indicators allows us to know which schools will need to make more efforts to improve the overall WASH services provided to children and which other partners need to be sensitised for taking the necessary actions to improve the conditions in the schools.

Table 4: Overall service level indicators used

Service level criteria	Indicators for assessing service level	Corresponding service level	Source data
Access (sanitation)	Separate latrines for boys and girls AND sufficient toilets for students (Bangladesh government norm which is 1 toilet per 50 students)	Improved	School survey and observation
	Separate latrines for boys and girls AND 1 toilet per 50-75	Basic	
	Latrines shared by boys and girls OR 1 toilet per 76-90	Sub-standard	
	No functional latrines OR 1 toilet for more than 91 students	No service	
Use	Toilets used by students and teachers on all occasions AND handwashing with soap is practiced	Improved	School survey and observation
	Toilets used by students and teachers on all occasions AND water available for anal cleansing AND soap available for handwashing	Basic/improved	
	Toilets used only by some students sometimes OR lack of water for anal cleansing OR lack of soap	Sub-standard	
	Toilets not used	No service	

Service level criteria	Indicators for assessing service level	Corresponding service level	Source data
Reliability	In more than 50% of toilets in the school there is water in the water seal AND there is no faecal matter in the pan AND there are no puddles of urine AND cleaning equipment and materials are always available within toilet or school premises (brush and broom, cleaning powder, liquid detergent, drainage system)	Improved	School survey and observation
	In more than 50% of toilets in the school there is water in the water seal AND there is no faecal matter in the pan AND there are no puddles of urine. Indicates there is regular and routine maintenance and the latrine is hygienic	Basic	
	If less than 50% of toilets in the school are unhygienic, dirty, unreliable OR without proper maintenance	Sub-standard	
	Latrines lack a water seal OR there are no latrines	No service	
Drinking water	Drinking water from tube well, pump or tap is available within school premises AND water quality testing is done on a regular basis	Improved	School survey and observation
	Drinking water from tube well, pump or tap is available within school premises , but no testing is done or is done inconsistently	Basic	
	Water is available within school premises but not from a safe source (pour water or dipper)	Sub-standard	
	No water available within school premises	No service	
Environmental Protection	Faecal sludge and waste water are confined safely. There is a safe disposal method AND faecal sludge management system is in place	Improved	School survey and observation
	Faecal sludge and waste water are confined safely. There is a safe disposal method but there is not a faecal sludge management system in place	Basic	
	Faecal sludge is visible OR/AND there is no proper	Sub-standard	
	Open pit is used and there is unsafe faecal sludge disposal	No service	
Menstrual hygiene management	There are facilities available for the bulk disposal of used napkins AND sufficient space for hanging the napkins AND availability of napkins in emergency at the school	Improved	School survey and observation
	There are facilities available for the bulk disposal of used napkins AND sufficient space available for changing and privacy but no napkins available for emergencies	Basic	
	There are facilities available for the disposal of used napkins and cloths but no space for changing napkins	Sub-standard	
	There are no facilities available for disposal of used napkins and cloths	No service	

4 Findings and reflection on WASH service levels in schools and the methodology used

4.1 Testing the “access” criterion

The first challenge started with establishing the benchmark for the indicator that has international and national benchmarks: the number of students per toilet. What is good enough? International experts were consulted and the answers were far from consistent. Therefore the research team focused on the written literature.

The international guidelines were developed by WHO in 2009⁶ for schools in low-income settings. The minimum standard recommendation is one toilet per 25 girls and one toilet plus one urinal for 50 boys. The most important recommendation is that boys' and girls' facilities should be in separate toilet blocks or be separated by solid walls and separate entrances. In short, toilets need to provide privacy and security if they are going to be used.

We also found out that Bangladesh has adopted a national standard in 2011 for WASH in schools (UNICEF, 2012⁷). The national standards are more realistic and include "1 toilet for 50 children and, when possible, girls' and boys' toilets must be completely separated". Although the authors recognise that the use of urinals is relevant, in line with national standards, the analysis focuses only on latrine coverage in schools. "When possible" was not considered strong enough by BRAC and BRAC WASH implementation took the national norm a step further, closer to the international norm, and adopted "that toilets for boys and girls MUST be separate".

Table 5: Access criterion

Service level criterion	Indicators for assessing service level	Corresponding service level
Access (sanitation)	Separate latrines for boys and girls AND sufficient toilets for students (Bangladesh government norm which is 1 toilet per 50 students)	Improved
	Separate latrines for boys and girls AND 1 toilet per 50-75 students	Basic
	Latrines shared by boys and girls OR 1 toilet for for 76-90 students	Sub-standard
	No functional latrines OR 1 toilet for more than 91 students	No service

In the 117 schools, the median number is 173 boys and 185 girls per school. The total median of students per school is 319. Overall there is one toilet for 69 students, which was calculated by dividing the number of students per functional toilets used by both students and teachers (Table 6). Urinals have been excluded from the calculations since the norms do not take them into account. Because it was not always possible to assess if the teachers' toilets were used by the students or not, the authors have included teachers' toilets in the calculations.

Table 6: Number of students and student/toilet ratio

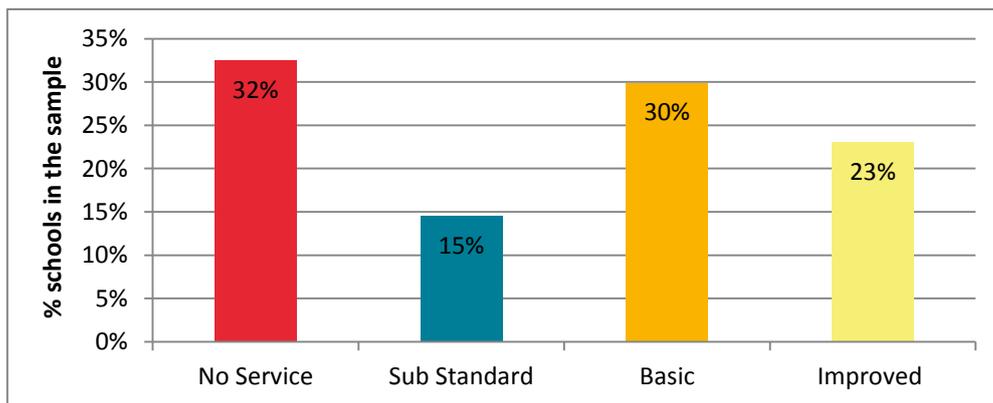
	Mean	Median
Number girl students	207	185
Number boy students	216	173
Total students	381	319
Student per toilet ratio (student and teachers toilets considered)	76	69
Student per toilet ratio (only student toilets considered)	104	96

⁶ Adams, J. Bartram, J., Chartier, Y and Sims, K. 2009. Water, Sanitation and Hygiene standards for schools in low-cost settings. World Health Organisation, Geneva. Available at: http://www.who.int/water_sanitation_health/publications/wash_standards_school.pdf.

⁷ UNICEF. 2012. WASH for school children. State-of-the-art in Afghanistan, Bangladesh, Buthan. India, Maldives, Nepal, Pakistan and Sri Lanka. UNICEF Regional Office for South Asia: Kathmandu Available at: http://www.unicef.org/wash/schools/files/UNICEF_WASH_for_School_Children_South_Asia_Report.pdf.

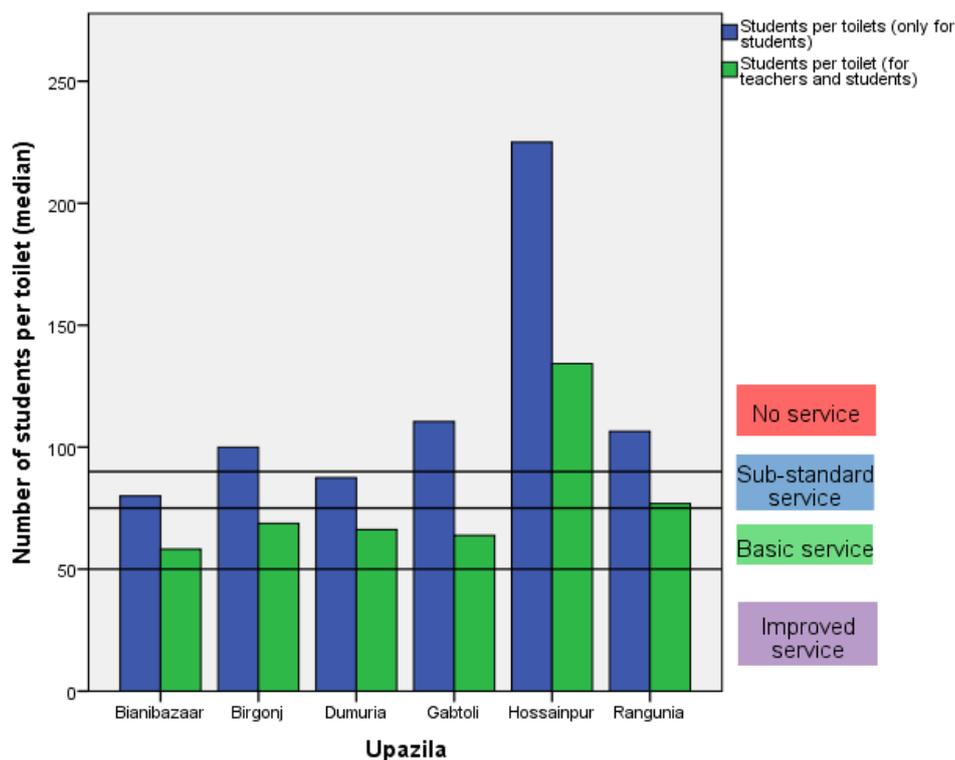
The results (Figure 3) show that about 23 percent of schools are in the improved category, which means that there are separate toilets for boys and girls and the school is meeting the Bangladesh standard of 1 toilet per 50 students. This figure needs to improve but the results are far better than other schools which have not built additional separate facilities for girls. About 30 percent of the schools had separate boys and girls toilets but the ratio is between 1 toilet per 50 students and 1 toilet per 75 students (with a basic service level). Around 30 percent of the schools are in the “no service” category because there are more than 90 students per toilet. This indicator helps us with the toilet requirements in schools and supports BRAC to plan for sufficient numbers of toilet facilities in schools.

Figure 3: Results using “access” criterion



Regional differences are mostly due to the number of students in schools (Figure 4).

Figure 4: Number of students per toilet per upazila



4.1.1 Reflection on the “access” criterion

From testing the methodology in six secondary schools (both government and BRAC supported), it was found that the student/toilet ratio was one toilet for anywhere from 71 to 150 students — all well above the national standard and therefore not considered “a basic level of service”, but closer to “below-standard”.

For all schools, it might appear that the standard is not met, but the conclusion for the team is that both the international and the Bangladesh access benchmarks for WASH in schools are at the aspirational level because at the moment it will be very hard to reach the required student/toilet ratio. However, all of the toilets were clean; some had excellent menstrual hygiene management facilities, as well as wash basins, soap and safe drinking water. It would seem unfair to label some of these schools as “sub-standard”, but a monitoring tool is about measuring whether a standard is met.

4.2 Testing the “use” criterion

The use of toilet facilities and the practice of handwashing are difficult to measure and to capture through observation. While it is easy for the enumerators to observe the availability of handwashing facilities, availability of water for anal cleansing and availability of soap, the observation on the use of toilets is notoriously complicated. It’s not possible to observe if anal cleansing is being practiced, therefore it is not used as an indicator.

Table 7: Use criterion

Service level criterion	Indicators for assessing service level	Corresponding service level
Use	Toilets used by students and teachers on all occasions AND handwashing with soap is practiced	Improved
	Toilets used by students and teachers on all occasions AND water available for anal cleansing AND soap available for handwashing	Basic/improved
	Toilets used only by some students sometimes OR lack of water for anal cleansing OR lack of soap	Sub-standard
	Toilets not used	No service

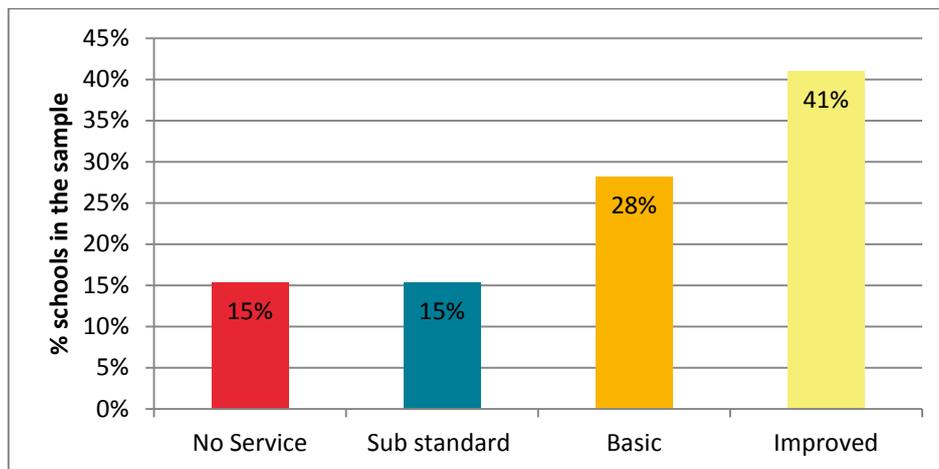
The results in Figure 5 show that almost half the schools provide a basic service which means that it was assumed, based on observation during the breaks, that latrines are used by students and teachers on “all” occasions that they need to be used, and that 41% of schools have facilities for handwashing with water and soap. The schools with a sub-standard service lack both water for anal cleansing and soap. “No service” means that although the toilets were there, facilities were not being used for any number of reasons. In some cases they were not functional, in other cases they were old and dark and students preferred to use the new facilities.

4.2.1 Reflection on the “use” criterion

In this study, all the enumerators have answered that all students and teachers use the toilets at all times as observed during school intervals. It’s possible to observe if anyone is “doing their business” not in the toilet, but it’s complicated to ensure that all the students are using the toilets just by observing them during one or two breaks. This means that the main criterion for judging the level of service was based on the availability of water and soap. The extent to which these are used by ALL is in reality unknown and therefore the division

between basic and sub-standard could not be assessed in this study. Subsequent studies can improve, revise or simplify this criterion.

Figure 5: Results using “use” criterion



Observation of toilet use. The toilet on the right is not being used because it does not offer privacy there is no water available and therefore does not meet the “access” or the “use” criteria.

Photo: C. Fonseca, IRC.

4.3 Testing the “reliability” criterion

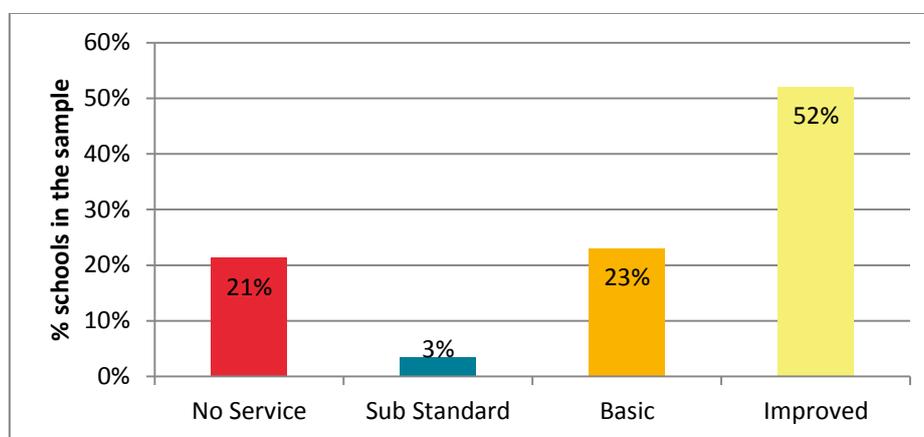
The reliability criterion is a combination of several proxy parameters: the cleanliness of the toilets, regular maintenance and the availability of cleaning materials. Since the enumerators spent only limited time in the schools, the observation criteria included checking the cleanliness of the toilet and if water was available in the water seal. Also in order to avoid the “bias of toilets being cleaned on knowing about the survey”, the presence of cleaning materials and cleaning equipment was checked. Only if all the four parameters were observed for all the toilets in the school, could the toilet be considered as reaching an improved service level.

Table 8: Reliability criterion

Service level criterion	Indicators for assessing service level	Corresponding service level
Reliability	In more than 50% of toilets in the school there is water in the water seal AND there is no faecal matter in the pan AND there are no puddles of urine AND cleaning equipment and materials are always available within toilet or school premises (brush and broom, cleaning powder, liquid detergent, drainage system)	Improved
	In more than 50% of toilets in the school there is water in the water seal AND there is no faecal matter in the pan AND there are no puddles of urine. Indicates there is regular and routine maintenance and the latrine is hygienic	Basic
	If less than 50% of toilets in the school are unhygienic, dirty, unreliable OR without proper maintenance	Sub-standard
	Latrines lack a water seal OR there are no latrines	No service

The findings (Figure 6) reveal that 52 percent of the schools had an improved service level, which could be attributed to the continuous efforts of BRAC WASH to mobilise and train the teachers and students (based on programme schedules). Most of the schools had maintained the toilets, they were clean and functional, and the impact of the BRAC WASH programme on ensuring hygienic behaviours is significant. But 21 percent of the schools need to increase the reliability of the toilets. These schools need to be given priority by BRAC to improve the sanitation facilities both in terms of maintenance of facilities as well as further sensitisation measures.

Figure 6: Results using “reliability” criterion



4.4 Testing criterion for availability of safe drinking water

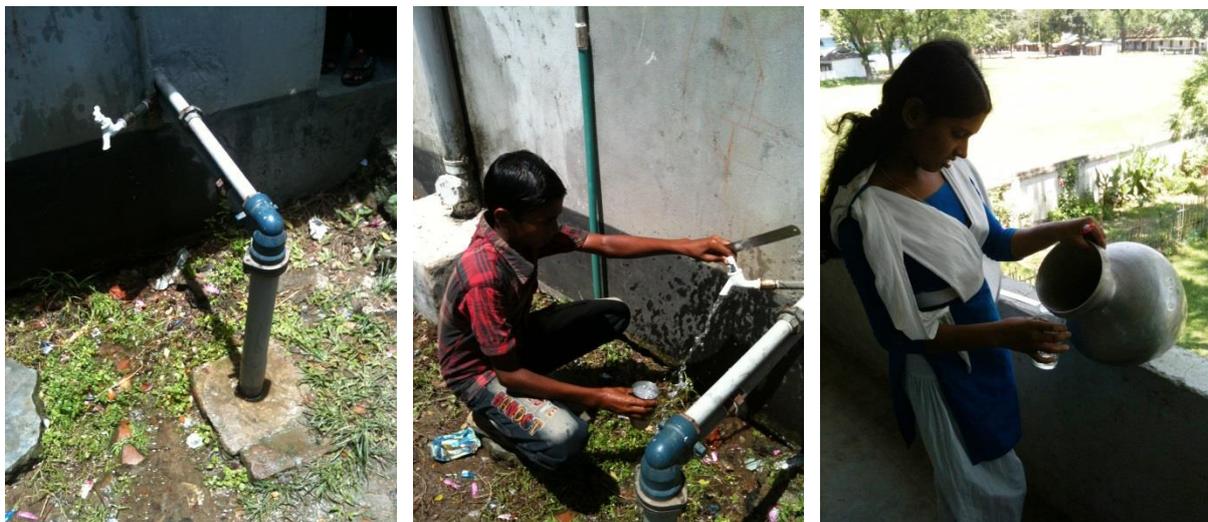
When water is available in the schools for drinking purposes, its quality has been tested when the systems were installed. But no water quality testing has been done since then. For a reliable indicator of service, water quality testing needs to be done to assess the safety of drinking water. At the moment this process is expensive, unreliable for the most remote schools and it takes several months before results are known.

As it was impossible to conduct water quality testing during data collection, the second best proxy was to use the type of source as an indication of safety. There is no water being stored by the schools. Deep tube wells are considered safer than shallow wells, but this does not mean the water is safe for schoolchildren to drink. To reach an improved service level, water treatment and/or filtering needs to take place. To improve the accuracy of this

indicator in future studies, proper water testing needs to be done to ensure safety of drinking water.

Table 9: Drinking water criterion

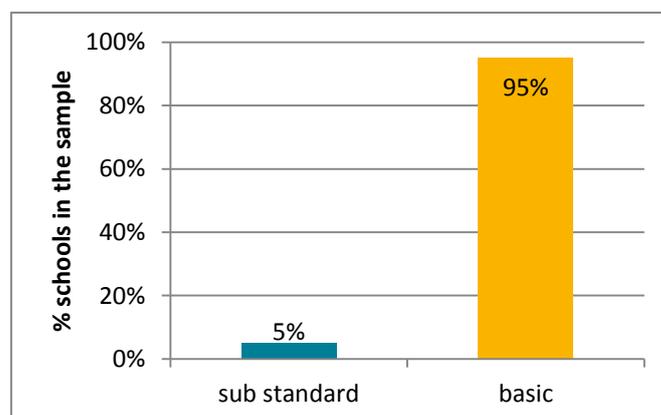
Service level criterion	Indicators for assessing service level	Corresponding service level
Drinking water	Drinking water from tube well, pump or tap is available within school premises AND water quality testing is done on a regular basis	Improved
	Drinking water from tube well, pump or tap is available within school premises, but no testing is done or is done inconsistently	Basic
	Water is available within school premises but not from a safe source (pour water or dipper)	Sub-standard
	No water available within school premises	No service



*Requesting school children to demonstrate how they get drinking water in the school.
Photo: C. Fonseca, IRC.*

From the 117 schools, 99 (85%) accessed water via tube wells without platforms. Some schools access wells which were considered sub-standard (Figure 7). Water quality testing was not done – after system implementation - in any of the schools and there were only five schools with public tap water which means that the service provided is at its best “basic” for the majority of the schools.

Figure 7: Results using “drinking water” criterion



4.5 Testing criterion for assessing environmental protection

It was deemed important to assess if faecal sludge and waste water were being disposed of safely. This question could only be answered for 59 percent of the schools that have done pit emptying at some point in the past. In the other schools the pits had not yet filled up.

From the schools that had to empty their pits, the majority buried the faecal sludge on someone else's land which may or may not be safe (Figure 8). At the moment the indicator does not provide enough substance to assess the safety of the methods used (Figure 9).

Table 10: Environmental protection criterion

Service level criterion	Indicators for assessing service level	Corresponding service level
Environmental protection	Faecal sludge and waste water are confined safely. There is a safe disposal method AND faecal sludge management system is in place	Improved
	Faecal sludge and waste water are confined safely. There is a safe disposal method but there is not a faecal sludge management system in place	Basic
	Faecal sludge is visible OR/AND there is no proper drainage	Sub-standard
	Open pit is used and there is unsafe faecal sludge disposal	No service

Figure 8: Schools faecal sludge disposal method

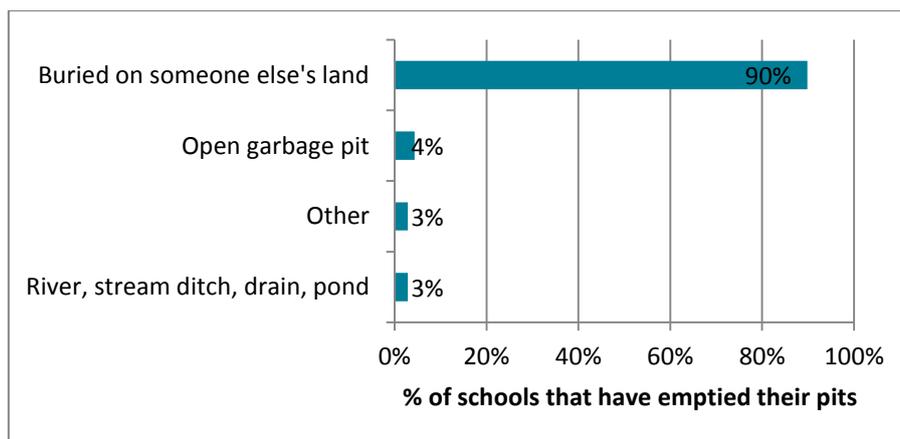
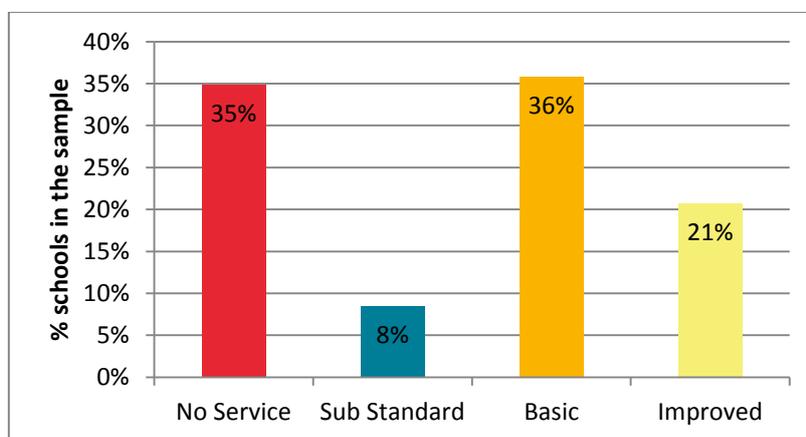


Figure 9: Results using “environmental protection” criterion



The service levels on environmental protection using the agreed criterion show that around 35 percent of schools are just dumping the faecal sludge openly creating water pollution and spreading of diseases. 21 percent of schools have an improved service level; these schools have a schedule for pit emptying and are safely disposing of the faecal sludge without causing any pollution.

4.6 Testing the menstrual hygiene management criterion

Menstrual hygiene management was a key criterion for BRAC WASH as it has provided ample support for facilities and education on this topic.

The criterion includes the availability of facilities for bulk disposal of napkins and sufficient space available for privacy. The availability of napkins within the school premises for emergency situations raises the level of service to “improved”.

The schools that have facilities available for disposal of individual napkins also have bulk disposal. If there is enough space available for changing and privacy and availability of napkins for emergency situations at the school, schools would move one more step up the ladder, but this was not part of the survey and was only included after the data was analysed.

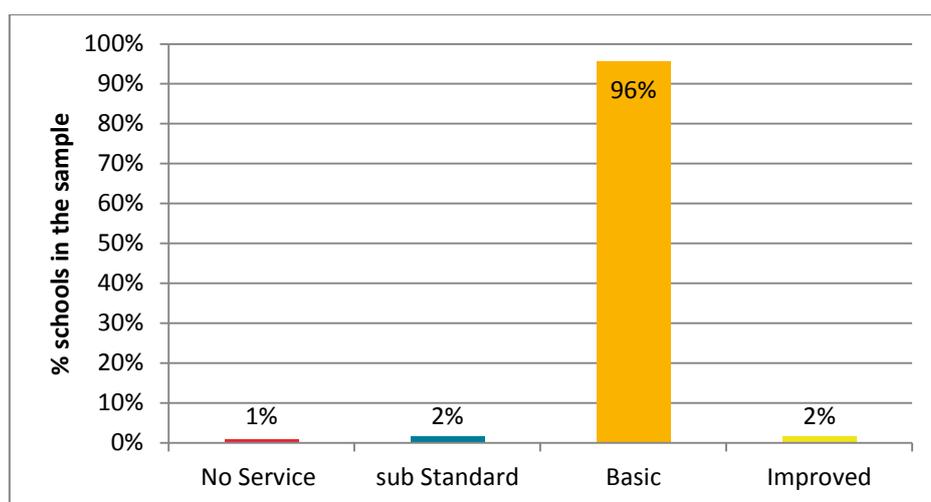
Table 11: Menstrual hygiene management criterion

Service level criterion	Indicators for assessing service level	Corresponding service level
Menstrual hygiene management	There are facilities available for the bulk disposal of used napkins AND sufficient space available for hanging the napkins AND availability of napkins for emergencies at the school	Improved
	There are facilities available for the bulk disposal of used napkins AND sufficient space available for changing and privacy but no napkins available for emergencies	Basic
	There are facilities available for the disposal of individual used napkins and cloths but no space for changing napkins	Sub-standard
	There are no facilities available for disposal of individual napkins and cloths	No service

Given that BRAC supports schools with menstrual hygiene facilities, it is no surprise to find that 96% of these schools have facilities available for the bulk disposal of napkins. However, the proxy indicators chosen when the data collection took place did not provide enough differentiation between the service levels (

Given that BRAC supports schools with menstrual hygiene facilities, it is no surprise to find that 96% of these schools have facilities available for the bulk disposal of napkins. However, the proxy indicators chosen when the data collection took place did not provide enough differentiation between the service levels (Figure 10). What is considered “sufficient space” with privacy for changing is not always clear to enumerators and it was unclear if pads were available to students. Also ensuring that there is a disposal space at school does not mean that girls are at school during menstruation. There is some work to do on the development of criteria that go beyond “access of facilities”.

Figure 10: Results using the “menstrual hygiene management” criterion

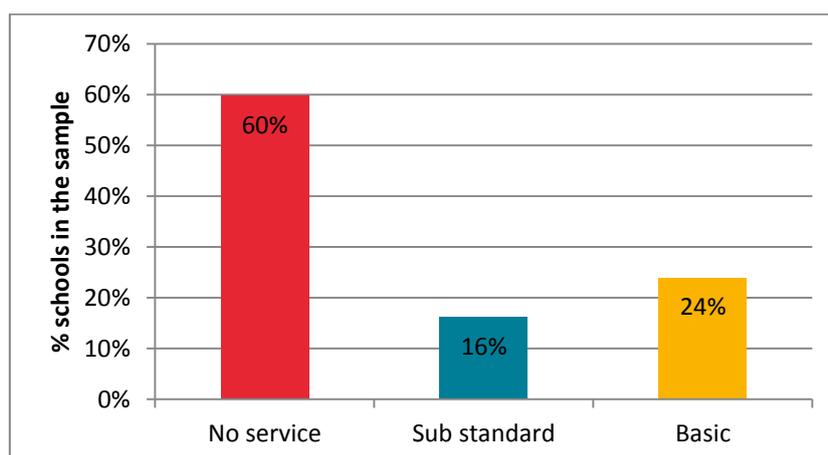


4.7 Overall service levels achieved with proposed criteria

Overall, if all the six proposed criteria to define a service for the whole school are analysed, only 24 percent of the schools in the sample provide a basic level of service to their students (Figure 11). No school has managed to score on improved services for all the six criteria.

The reason for most schools to be in the “no service” category is because the aggregate level is arrived at based on the lowest score of any of the six criteria. For example if a school is performing well on access, use and menstrual hygiene management but does not fulfil the environmental protection criterion, then the overall category will be considered as “no service”.

Figure 11: Results using ALL the service level criteria



The main conclusion for the high percentage on “no service” is due to the “access” criterion. Different combinations of criteria were tested, but the number of toilets available in the schools is simply not sufficient for the total number of students. “Access” is the most important criterion which defines the overall service level in the schools in the sample. The construction of more facilities is required. The second reason why many schools are only reaching a basic level of service results from how the faecal sludge and drainage systems

are managed. Lack of water quality testing for assessing safety of drinking water is another issue which needs to be tackled.

4.8 Findings on differently abled children

Although it was not a specific research question, the study found that there were 135 differently abled children⁸ in 65 schools out of the total 117 schools. In almost all the schools the differently abled children have to use the same toilet as the other children. In six of the 65 schools, differently abled children are not using latrine facilities at all. It should be noted that the data does not suggest that these schools have special accommodation for the disabled, but it simply states that differently abled children have to use the existing latrine because there is no other option available. Within the context of this study we have not specifically looked into this issue but as the BRAC WASH programme develops it will be discussed further to improve implementation.

In future studies, the indicator on access can be expanded with a marker to ensure equity and inclusiveness of access. The BRAC WASH programme can explore alternative technologies that would allow access to sanitation and handwashing facilities by the differently abled in schools.

5 Findings on life-cycle costs for school WASH facilities

Most of the 117 schools included in the sample keep a record of all expenses in their account books, including who funded which component. Therefore cost collection through surveys in schools was relatively easy (when compared with cost data collection done in households elsewhere) and allows for a proper level of disaggregation. The cost data from BRAC WASH for staff salary and school education programmes as well as construction costs were available at headquarters. The expenditure in Bangladeshi Taka (BDT) were converted to US dollars using the 2013 yearly average market exchange rate conversion: US\$ 1 = BDT 78.10.

5.1 Capital expenditure hardware and software

Capital expenditure hardware was done in all schools for the construction of both sanitation and water facilities which include: girls and boys toilets, teachers' toilets, urinals, deep tube wells, water tanks, handwashing facilities. Construction took place in 2008 and then later in 2012-2013 for which costs were reported (school expenditure reports go as far back as 1944). The government, development partners, families and BRAC have invested over the years in the construction of school facilities.

For the 117 schools in the sample the median capital expenditure for water facilities was Taka 6,954 (US\$ 89) while for sanitation facilities it was Taka 171,535 (US\$ 2,196) (Figure 7). Capital software includes hygiene promotion and education strategy for both student brigades and teachers' orientation for two years (2007 and 2008). For the calculations, the total costs were divided equally among the schools in the sample.

⁸ "Differently abled" is an alternative description referring to those who are disabled or handicapped on the grounds that it provides a more positive message and avoids discrimination towards people with disabilities.

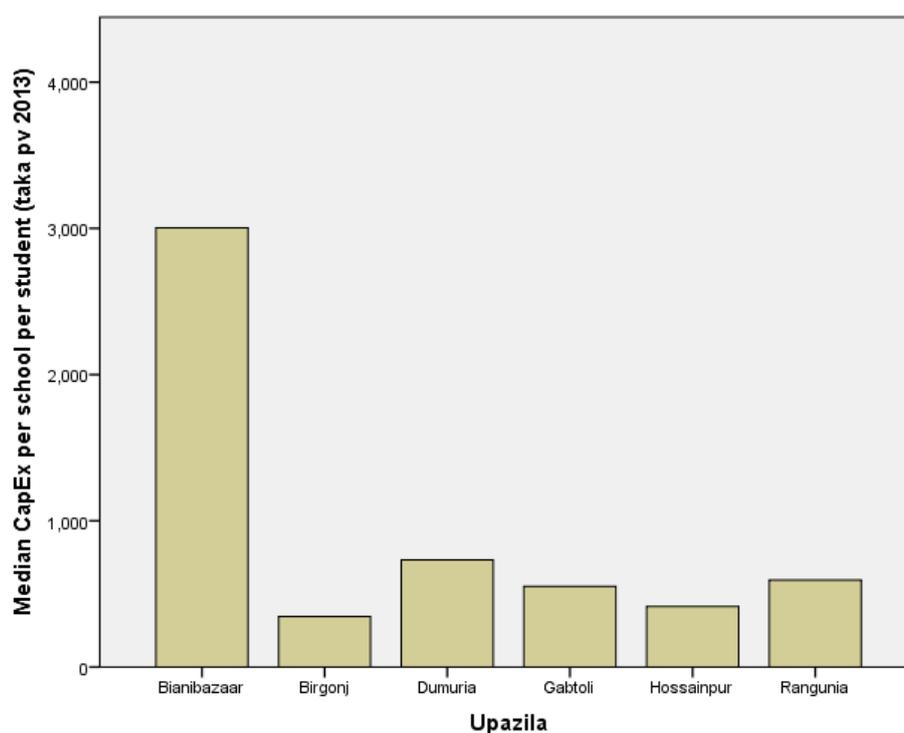
A total of Taka 1,842 per school (US\$ 24) was spent on average on hygiene promotion as a one-off expenditure. This is relatively cheap because it comprises mostly the materials and a few days from local BRAC staff who are involved in other programmes as well. Economies of scale and having the structures in place to provide support allow for efficiency of investments made.

In total, the costs of all the capital hardware and software expenditure on water and sanitation were Taka 587 per student (US\$ 8) with regional differences (Figure 12). There are three schools in Bianibazaar which have very high costs compared with the rest of the sample. The research team could not find an explanation, only that the costs of construction were much higher than in the other schools. If the three schools are removed from the sample, the median cost per student drops to Taka 584 – therefore the analysis includes the schools in that particular upazila.

Table 12: Capital expenditure for water and toilet facilities

	Mean (Taka 2013)	Median (Taka 2013)	Median (US\$ 2013)
CapEx hardware water facilities per school	18,276	6,954	89
CapEx hardware toilet facilities per school	231,457	171,535	2,196
CapEx software: water, hygiene, sanitation estimated across all schools	1,842	1,842	24
Total CapEx per school (all schools included)	251,419	194,175	2,486
Total CapEx per student (all schools included)	759	587	8
Total CapEx per student (only schools with basic and higher service)	940	814	10

Figure 12: Capital expenditure per student per upazila (Taka pv 2013)



However, in the 28 schools that have been defined as having a basic service level the minimum benchmark for capital expenditure is Taka 814 per student (US\$ 10). Overall, the BRAC programme contributes with Taka 103 per student (US\$ 1.3) while the remaining expenditure is borne by the schools.

Capital expenditure per student is lower for “sub-standard” and “no service” schools. This is not surprising because the main criterion that defines the basic service level is the number of students per toilet which is dependent on infrastructure costs (Table 13).

Table 13: Capital expenditure for water and toilet facilities per service level

Service level	No service	Sub standard	Basic
Median CapEx per school (Taka pv2013)	209,906	150,213	183,497
Median CapEx per student (Taka pv2013)	489	607	814

5.2 Expenditure on operational maintenance

The main expenditure on operational maintenance relates mostly to costs for hygiene, followed by menstrual hygiene management, energy and minor repairs required in the facilities. Costs related to water treatment were only reported in 14 schools. The overall operational maintenance costs are Taka 48 per student per year (US\$ 0.6). If the costs for menstrual hygiene management are not taken into account, OpEx is Taka 19 per student per year (US\$ 0.2) (Table 14).

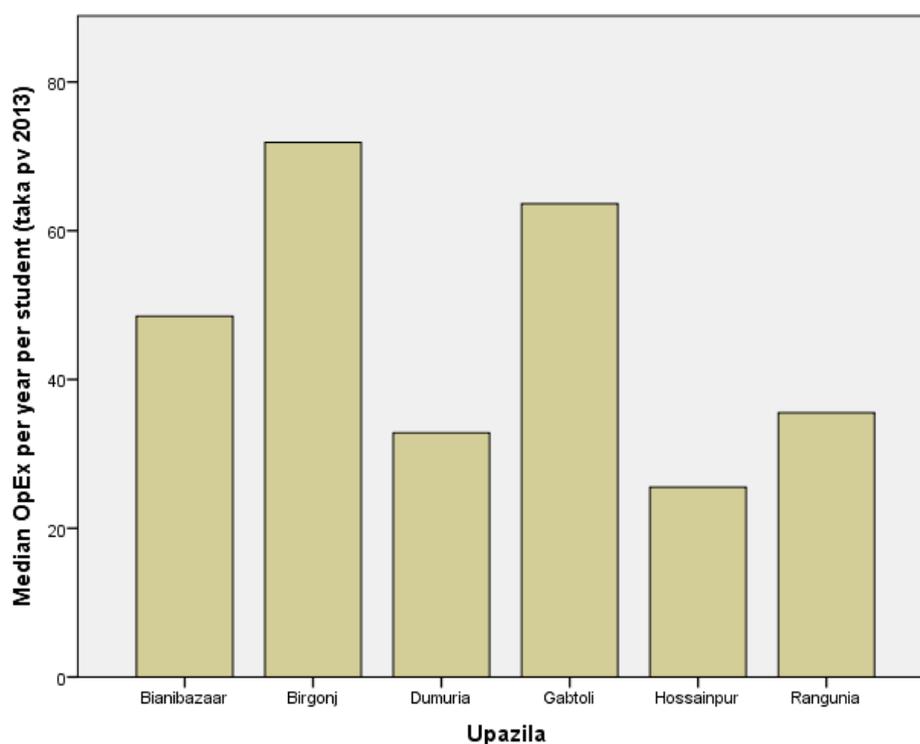
Table 14: Operational expenditure for water and toilet facilities

	Median (Taka 2013)	Median (US\$ 2013)	% of total OpEx
OpEx per year on hygiene	3,460	44	27%
OpEx per year on repairs	380	5	3%
OpEx per year on water treatment	0	0	0%
OpEx per year on energy	1,800	23	14%
OpEx per year on menstrual hygiene management	2,410	31	19%
OpEx total per year per school	12,648	162	100%
OpEx per school per student excluding menstrual hygiene facilities	19	0.2	
OpEx per school per student including menstrual hygiene facilities ⁹	48	0.6	

There are some regional differences in OpEx, with the schools in Birganj and Gabtoli spending higher amounts on maintenance than the remaining schools in the sample (Figure 13).

⁹ The OpEx related to menstrual hygiene management was only divided by the number of girls in the school and not the whole student population.

Figure 13: Operational expenditure per year per student per upazila (Taka pv 2013)



The operational expenditure per year, per student is also lower for “sub-standard” and “no service” schools (Table 15). For schools providing a basic service level, a benchmark of Taka 65 per student per year (US\$ 0.8) seems to be appropriate (which is equivalent to Taka 5 per student per month). The amount that needs to be spent on operational expenditure every year per student is fourteen times lower than the amount required for CapEx hardware and software (US\$ 10).

Table 15: Operational expenditure for water and toilet facilities per service level

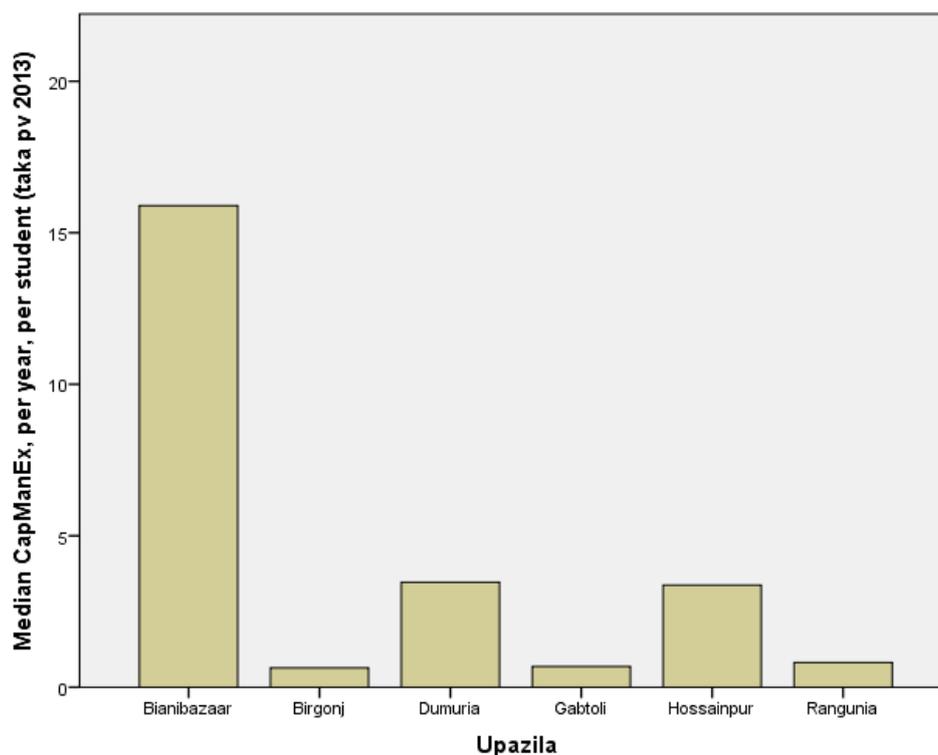
Service level for the schools	No service	Sub standard	Basic
Median OpEx per student (Taka pv 2013)	36	56	65

5.3 Expenditure on capital maintenance

Capital maintenance expenditure, which reflects maintenance and irregular repairs (i.e not done on a monthly/yearly basis as is the case with operational expenditure), was mostly spent on pit emptying, upgrading the tube wells, replacing motors and pipes, painting the facilities and expanding the handwashing facilities. Most of capital maintenance expenditure was reported from 2010 onwards, or about three to five years after construction.

The overall median per school for pit emptying is Taka 540 per school (US\$ 7), while the total capital maintenance expenditure over the years is Taka 2000 per school (US\$ 26) and Taka 8 per student (US\$ 0.1). If the expenditure is divided by the last 5 years (which is when most major maintenance took place), we arrive at Taka 400 per school per year (US\$ 5) or Taka 2 taka per student per year (US\$ 0.03). The expenditure varies significantly per upazila (Figure 14) and per school reflecting the diversity and age of infrastructure in place.

Figure 14: Capital maintenance expenditure per year, per student per upazila (Taka pv 2013)



The schools with no or sub-standard service levels have a lower median capital maintenance expenditure than those with a basic level of service. To achieve a basic level of service, about Taka 2 per student per year (US\$ 0.03) is required (Table 16).

Table 16: Capital maintenance expenditure for water and toilet facilities per service level

Service level for the schools	No service	Sub standard	Basic
Median CapManEx total per student (Taka pv 2013)	7	8	12
Median CapManEx per year per student (Taka pv 2013)	1	2	2

5.4 Expenditure on direct support

The salaries of BRAC staff take up most of the direct support costs. Staff members for the six upazilas in the study include technical engineers, programme organisers, field organisers, regional managers, upazila managers, senior technical support specialists and senior school sanitation specialists. From the salaries of these staff members a proportion was allocated to the school programme per year which was then divided by the 117 schools in the sample.

The estimated salary costs from BRAC staff supporting water and sanitation related programmes are Taka 9,172 per school per year (US\$ 117). Additionally, there are costs related to leaflets, posters, hygiene charts and videos. The amount per year per school was estimated by dividing the overall costs spent in the 150 upazilas over the past five years, since the start of the BRAC WASH school programme. This resulted in an estimated cost of Taka 51 per school per year (US\$ 0.7) on materials.

In total, it is estimated that the direct support costs are about Taka 9,223 per school per year (US\$ 118) or Taka 41 per student per year (US\$ 0.5). In reality this amount will vary per school, but the details of the data source only provide us with the overall average per school. It was not possible to capture the time costs spent by the government and other partners in the schools over the past years.

5.5 Summary of findings on costs that deliver a basic service level

There is a relationship between the amount of money invested in infrastructure and maintenance and the service levels provided – as measured by the criteria in this study. Clearly, the schools which score lower are also the schools where investments in construction and maintenance were lower per student.

A basic service level for water and sanitation in schools needs to match, for this study, six criteria related to access (the student/toilet ratio), use of the facilities, reliability, how the waste is handled, how safe the drinking water is and how the menstrual hygiene management is organised.

Only if a school has scored positive on all these criteria can it be considered as providing a basic service, for the 28 schools which did, the benchmark costs per student can be calculated:

- At least Taka 814 per student (US\$ 10) on capital expenditure for both water and sanitation facilities (including disposal and menstrual hygiene management);
- At least Taka 108 per student per year (US\$ 1.4) on all recurrent costs, of which Taka 41 per student per year (US\$ 0.5) for continuous direct support to hygiene promotion activities and training of student and teacher brigades (Table 17).

The breakdown of all the costs can be found in Table 18. The recurrent costs per year are 14% of the initial costs for construction and education. Within the recurrent costs, OpEx takes 60% of the share followed by direct support at 38%. These can be taken as indicative values to plan for a basic level of service if all six criteria are included in the ambition.

Table 17: Costs for water and toilet facilities in schools per service level

Service level	No service Taka	Sub standard Taka	Basic service (benchmark)	
			Taka	US\$
Median capital expenditure (hardware and software) per student	489	607	814	10
Median all recurrent costs per student per year	75	104	116	1.5

Table 18: Breakdown of construction and recurrent costs per student, for water and toilet facilities in schools

	Median (Taka 2013)	Median (US\$ 2013)	% of total recurrent costs
Capital expenditure (hardware and software), per student, one-off	814	10	
OpEx per student incl. menstrual hygiene management, per year	65	0.8	60%
CapManEx per student, per year	2	0.03	2%
Direct support expenditure per student, per year	41	0.5	38%
Total recurrent costs, per student, per year	108	1.4	100%

5.6 BRAC value for money and financial sustainability

Overall, the BRAC WASH programme contributes with Taka 103 per student (US\$ 1.3) for capital expenditure and Taka 41 per student per year (US\$ 0.5) on direct support.

This means that for infrastructure construction (capital expenditure), for each Taka that BRAC invests per student for their WASH facilities, the schools invest Taka 8. For recurrent costs, every year, for each Taka that BRAC gives to support the hygiene and menstrual hygiene management behaviour changes, the schools and students invest 2.5 times on major and minor maintenance of infrastructure to ensure its sustainability.

For only 25% of the schools the investments have led to a basic service level. For the remaining 75% of the schools, the investments have failed to achieve a basic service level. This failure to achieve a basic level of service has many causes, not only financial, but it is clear that these schools have failed to invest sufficient capital for recurrent costs.

6 Conclusions

6.1 A methodology for assessing WASH service levels

The adaptation of the life-cycle costs approach to the BRAC WASH programme has made it possible, for the first time, to compare a school's WASH-related spending per student with the services being provided for the whole school. Over a period of a year and a half the BRAC/IRC team have tested indicators and criteria for assessing, monitoring and costing a basic level of WASH service in schools. This process started by examining the limited literature on the subject and evolved from testing BRAC's own monitoring guidelines and using IRC's experience in selecting and collecting service level indicators.

Several criteria and indicators were tested resulting in six criteria that cover a broad range of aspects. For this study, a basic service level for water and sanitation in schools needs to match six criteria related to: (1) access, the student/toilet ratio, (2) use of the facilities, (3) the reliability, (4) how the waste is handled, (5) how safe the drinking water is and (6) how the menstrual hygiene management is organised. Only if a school scores positive on all these criteria can it be considered as providing a basic service to its students. Indicators have also been derived to indicate a higher "improved" service level.

Fulfilling all six criteria is a tall order for schools in Bangladesh. From the 117 schools only 28 schools (24%) have scored "basic" on all the six criteria. There was no school which has scored "improved" on all the criteria. The most difficult to achieve was the "access" criterion,

namely the number of students per toilet which is related to the amount of money spent on constructing and maintaining the facilities.

The study has shown that the schools that BRAC WASH is supporting (purposely sampled) have better conditions and face less challenges than those mentioned in the 2012 UNICEF state-of-the-art report on WASH in schools in Bangladesh. The UNICEF study mentions that on average there is a toilet for every 130 students and that the majority of facilities is in extensive need of repair. The schools that BRAC is supporting show a better ratio number of students per toilet, with a median of 69 students per toilet, but still above the Bangladesh standard of 1 toilet per 50 students. The schools in the study are spending a reasonable amount of funds on major and minor maintenance mostly paid by the schools and the students, the median per school per year amounts to Taka 12,648 (US\$ 162).

BRAC WASH has done a good job in sensitisation and training which, apart from some issues around data collection, is reflected in the good scoring under the “use” and the “reliability” criteria. The intervention approach through the student brigades and maintaining the school WASH activities after the construction of facilities have played an important role in guaranteeing the sustainability of interventions. However, an integrated approach and coordination among organisations and schools are required to implement good school programmes to ensure that more than 24% of the schools score at least “basic” for all the criteria and that the investments are not wasted.

After having tested the methodology and the indicators, the following improvements are recommended to increase the accuracy of the results:

- The use of toilet facilities and the practice of handwashing are difficult to measure and to capture through observation. The extent to which these are used by ALL is in reality unknown and therefore the division between basic and sub-standard could not be assessed in this study. Subsequent studies can improve or simplify these criteria.
- Proper water testing needs to be done to ensure safe drinking water in schools.
- From the schools that had to empty their pits, the majority buried the faecal sludge on someone else’s land which may or may not be safe. At the moment the indicator does not provide enough granularity for enumerators to assess the safety of the methods used.
- Given that BRAC supports schools with menstrual hygiene facilities, it is no surprise to find that 96% of these schools have facilities available for the bulk disposal of napkins. However, the proxy indicators chosen when the data collection took place did not provide enough differentiation between the service levels.

6.2 The life-cycle costs of WASH in schools and the relationship between investments and the services provided

Expenditure made by the schools, by BRAC, by individuals and by the students has been classified according to the WASHCost life-cycle costs framework that distinguishes costs between one-off capital investments and recurrent annual expenditure. In total, the costs per student for all the capital hardware and software expenditure on water and sanitation were Taka 587 per student (US\$ 8). Overall, the BRAC programme contributes Taka 103 per student (US\$ 1.3) while the schools bear the remaining expenditure.

The main expenditure on operational maintenance relates mostly to costs for hygiene, followed by menstrual hygiene management, energy and minor repairs required in the

facilities. Costs related to water treatment were only reported in 14 schools. The overall operational maintenance costs are Taka 48 taka per student per year (US\$ 0.6).

Capital maintenance expenditure, which reflects maintenance and irregular repairs, was mostly spent on pit emptying, upgrading the tube wells, replacing motors and pipes, painting the facilities and expanding the handwashing facilities. The overall median for pit emptying is Taka 540 taka per school (US\$ 7), while the total capital maintenance expenditure over the years is Taka 2000 per school (US\$ 26) and Taka 8 per student (US\$ 0.1).

The salaries of BRAC staff take up most of the direct support costs. In total, it is estimated that the direct support costs are about Taka 9,223 per school per year (US\$ 118) or Taka 41 per student per year (US\$ 0.5). It was not possible to capture the time costs spent by the government and other partners in the schools over the years.

Schools that spend less per student on WASH related capital costs, repairs, replacements and basic maintenance deliver poorer WASH services to their students. Most of the schools have invested more in the facilities and its maintenance than the BRAC contribution; this shows that when an external agency promotes school WASH activities, this can also be implemented in other upazilas with support from government or other external agencies.

6.3 Cost benchmarks for sustainable WASH services in schools

Within the parameters of this study we cannot state how much “ideal WASH services in schools” cost, but we can provide the costs of a basic service based on the sample of 28 out of 117 schools which reached a basic level of service on all the six criteria. The breakdown of construction and recurrent costs per student, for water and toilet facilities in schools to achieve a basic level of service is as follows:

- Capital expenditure (hardware and software), one-off is Taka 814 per student (US\$ 10).
- Total recurrent costs are Taka 106 per student per year (US\$ 1.4).
 - Operational expenditure including menstrual hygiene facilities is Taka 65 per student per year (US\$ 0.8).
 - Capital maintenance expenditure is Taka 2 per student per year (US\$ 0.03).
 - Direct support expenditure is Taka 41 per student per year (US\$ 0.5).

7 Recommendations

7.1 For the BRAC WASH programme

The main aspects that require attention to improve service levels in the schools in the sample are: the number of (separate) toilets for girls and boys, how the waste from the toilets is being disposed of and testing the quality of the water being provided to the students.

Looking at the findings on lack of operation and maintenance in some schools, leading to a sub-standard level of service, BRAC can motivate the schools to create a fund for operation and maintenance so they are able to achieve a basic level of service.

The replies on faecal sludge management indicate that most of the schools require sensitisation on safe disposal mechanisms and the need for regularised pit emptying schedules.

BRAC WASH can strengthen the IEC programmes by integrating the concepts of basic service levels in schools and its accompanying parameters. A first step in this process will be to inform the school management committees and student brigades on the findings of the research and to improve the schools' action plans.

BRAC WASH could discuss with the schools it supports what is required for differently abled students to access toilets and pilot specific technologies for these students. In future studies, the indicator on access can be expanded with a marker to ensure equity and inclusiveness of access.

BRAC WASH will need to find strategies to increase the collaboration with the government and other funding agencies to expand the programme and intervention approach further, using the cost benchmarks derived from the study. Most of the schools need to invest in construction to meet the Bangladesh norm of number of students per toilet.

7.2 For development partners

The BRAC WASH programme contributes only to some components of the school programmes. Parents, students and other development partners also contribute to the development of some of the school components, but overall the programmes could be more holistic and coordinated.

The breakdown of recurrent costs is relevant to understand what can be paid by the schools and students on operation and maintenance. However, it is even more important to assess what level of support is required to ensure that the behaviour change for toilet use, handwashing facilities and menstrual hygiene are followed through.

This method for assessing service levels using six criteria gives us insight into which schools need to put more effort into improving the overall WASH services provided to children and which other partners need to be sensitised for taking the necessary actions to improve the conditions in the schools.

It has been recognised that future global water, sanitation and hygiene targets must extend beyond household level and include a wide range of settings including schools, workplaces, markets, transit hubs, health centres, etc. Schools and health centres are at the top of the priority list because of the potential health benefits to a large number of children and adults. Specifically, handwashing and menstrual hygiene management are considered to be universal priorities to be reached by 2030 so that girls are given the same opportunities and have access to education.

This study has demonstrated and tests some of the criteria and indicators that can be used to measure service levels in schools. Adopting a service delivery and life-cycle costs approach to monitor services in schools can provide valuable evidence for better decision making while planning for sustainable school WASH interventions.

Ideally the team wanted to have four service level indicators, but the proposed methodology has used six criteria. It is expected that other researchers and teams working on measuring the post-Millennium Development Goals for schools can provide further insights and feedback on the proposed indicators.

	[<input type="checkbox"/>] Any other (Eg: vocational students)
17. How many boys are there in this school? (<i>Write the number</i>)	[<input type="checkbox"/>] Junior Secondary (class 6-8) [<input type="checkbox"/>] Secondary school (class 6-10) [<input type="checkbox"/>] College (above class 10) [<input type="checkbox"/>] Any other (Eg: Vocational students)
18. Are there any children with special ability in school? (<i>Give tick and Write the number</i>)	[<input type="checkbox"/>] Yes [<input type="checkbox"/>] No if Yes give numbers [<input type="checkbox"/>] boys [<input type="checkbox"/>] girls

ACCESS TO DRINKING WATER, LATRINES AND HANDWASHING FACILITIES (ACCESS) AND COSTS

19. Which type of latrine facilities does the school have? Mark the appropriate option (Please write the number)	Type	Year of construction
	[<input type="checkbox"/>] Septic +offset	
	[<input type="checkbox"/>] Twin pit offset	
	[<input type="checkbox"/>] Single pit offset	
	[<input type="checkbox"/>] Twin pit	
	[<input type="checkbox"/>] Single pit	
	[<input type="checkbox"/>] Unhygienic	
	[<input type="checkbox"/>] Any other (please describe)	

20. How many toilet compartments/latrines does the school have?	Compartments (Number of Pans)		
	Functional	Partly Functional	Non Functional
Toilets for girls only			
Toilets for boys only			
Toilet for Teachers (M and F) only			
Toilets for both girls and boys			
Toilets for girls and female teachers			
Toilets for boys and male teachers			
Toilet for only female teachers			
Toilet for only male teachers			

21. Does the School have urinals? [] Yes, [] No, If Yes provide numbers below.

Urinals for girls only			
Urinals for boys only			
Urinals for girls and boys			
Urinals for Teachers only			

22. Reason for partly functional or non functional (If applicable):

23. Do you have handwashing facilities? (After using latrine) <input type="checkbox"/> Yes <input type="checkbox"/> No, If Yes provide numbers below.			
24. Type of handwashing facilities (Write the number in bracket) <input type="checkbox"/> Facility Running water from a piped system or tank (such as faucet and sink, stand post, or rainwater tank with a faucet) <input type="checkbox"/> Hand poured water system (such as from a bucket or ladle) <input type="checkbox"/> Basin/bucket/mug (handwashing is done in water which is not running or poured) <input type="checkbox"/> Tube well <input type="checkbox"/> Pond <input type="checkbox"/> Other			
25. Number of handwashing stations in the school? (After anal cleansing)	Functional	Partly Functional	Non Functional
Handwashing for girls only (includes tube well within the latrine)			
Handwashing for boys only			
Handwashing for both girls and boys			
Handwashing for girls and female teachers			
Handwashing for boys and male teachers			
Handwashing only for teachers (M & F)			
26. Reason for Partly Functional or Non functional:			
27. Are toilets accessible to those children with special ability	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable		
28. Does the school normally provide drinking water for pupils?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
29. If yes, write the total number of drinking water sources.			
30. What type of drinking water source is available in the school? (Write the numbers)	<input type="checkbox"/> Tube well with overhead tank and pipe line (using motor) <input type="checkbox"/> tube well with platform <input type="checkbox"/> tube well without platform <input type="checkbox"/> public tap water <input type="checkbox"/> rainwater <input type="checkbox"/> pond sand filter <input type="checkbox"/> other, specify: _____		
31. Is the water safe? (arsenic and bacterial free as per GoB norms)	<input type="checkbox"/> Yes <input type="checkbox"/> No		

32.				
33.				
34.				
35.				
36.				
37.				
38.				
39.				
40.				
41.				

OBSERVATION FOR DRINKING WATER	
42. Do you see drinking water stored in the school or nearby?	[] Yes [] No
43. Is there a dipper? Yes=1, No=2	[] Yes [] No

44. How do children draw water for drinking?	<input type="checkbox"/> pour water <input type="checkbox"/> tap <input type="checkbox"/> dipper <input type="checkbox"/> pump <input type="checkbox"/> other, specify: <input type="checkbox"/> N/A
45. Discuss with students: Are the students always using the toilets?	<input type="checkbox"/> Yes, all the times <input type="checkbox"/> Yes , only some times because _____ _____ <input type="checkbox"/> Do Not Use because _____ _____
46. Ask the students: Where does the student drink water from, any source at school?	<input type="checkbox"/> tube well with platform <input type="checkbox"/> tube well without platform <input type="checkbox"/> public tap water <input type="checkbox"/> rainwater <input type="checkbox"/> pond sand filter <input type="checkbox"/> Bring from home <input type="checkbox"/> other, specify:
47. Do the students attend the schools during menstrual period?	<input type="checkbox"/> Yes <input type="checkbox"/> No

RELIABILITY AND MAINTENANCE AND COSTS	
48. Are hygiene promotion classes given at school?	<input type="checkbox"/> Yes, <input type="checkbox"/> No If Yes, when? Please tick the option. (a) only in assembly (b) as part of other subjects (e.g. science, moral class, religion, etc.) (c) special lessons on sanitation and hygiene with <u>practical activities</u> , e.g. on RRR (Reduce, Recycle and Reuse) (d) Special sessions on sanitation and hygiene by other agencies (BRAC/other NGOs/Health Department/others specify)
49. Has the school paid or pays for hygiene promotion? (Eg: trainer/ training material/ sanitation month/ handwashing day)	<input type="checkbox"/> Yes, <input type="checkbox"/> No if Yes, Please specify the amount <input type="checkbox"/> Taka every year
50. Does the school buy soap? <i>Fill in the amount</i>	<input type="checkbox"/> Yes, <input type="checkbox"/> No if Yes, Please specify the amount <input type="checkbox"/> Taka every year
51. Who cleans the toilets and urinals?	<input type="checkbox"/> mainly girls

	<input type="checkbox"/> mainly boys <input type="checkbox"/> boys and girls equally <input type="checkbox"/> female teacher <input type="checkbox"/> male teacher <input type="checkbox"/> male and female teachers <input type="checkbox"/> paid caretaker (Bua, Aya, pion etc) <input type="checkbox"/> other, specify: _____ <input type="checkbox"/> no one cleans regularly
52. How much is paid to the person who does the cleaning?	<input type="checkbox"/> Nothing <input type="checkbox"/> Taka every month <input type="checkbox"/> Taka every year <input type="checkbox"/> Other: _____
53. Does the school spend money on cleaning materials? How much? (Probe to get the answer) Describe what materials _____	<input type="checkbox"/> Nothing <input type="checkbox"/> Taka every month <input type="checkbox"/> Taka every year <input type="checkbox"/> Other
54. Does the school spend on minor repairs? (Probe to get the answer) _____	<input type="checkbox"/> Nothing <input type="checkbox"/> Taka every year <input type="checkbox"/> Other
55. Does the school treat water used for drinking?	<input type="checkbox"/> Yes , <input type="checkbox"/> No if Yes tick the option (a) Boiling (b) Add chlorine /Alam (c) Use filter (d) Other, specify:
56. How much does it cost to treat the water?	<input type="checkbox"/> Nothing <input type="checkbox"/> Taka every year <input type="checkbox"/> others: <input type="checkbox"/> N/A
57. What is the electricity bill? (Applicable when motor is used to pump water)	<input type="checkbox"/> Taka every month
58. Does the school spend on collecting water? (write amount only if applicable)	<input type="checkbox"/> Taka every month

ENVIRONMENTAL PROTECTION AND COSTS	
59. Did the school have to do pit emptying?	<input type="checkbox"/> Yes, if Yes proceed to questions 60 <input type="checkbox"/> no , if No proceed to question 65 <input type="checkbox"/> I do not know
60. If yes, when did the pit emptying happen?	<input type="checkbox"/> 0-12 months ago <input type="checkbox"/> between 1-3 years ago <input type="checkbox"/> between 3-5 years ago <input type="checkbox"/> between 5-10 years ago <input type="checkbox"/> more than 10 years ago <input type="checkbox"/> I don't know
61. How much was spent on emptying?	Taka[<input type="checkbox"/>] N/A [<input type="checkbox"/>]

62. Is there a schedule for emptying and disposing of the sludge?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/> N/A
63. Who emptied your pit on the last occasion the latrine was emptied?	<input type="checkbox"/> septic tank service or truck <input type="checkbox"/> hired labour/sweeper <input type="checkbox"/> don't know <input type="checkbox"/> any other specify <input type="checkbox"/> N/A
64. Where was the sludge disposed of on the last occasion the toilet pit was emptied?	<input type="checkbox"/> surface water: river, stream, ditch, drain, pond <input type="checkbox"/> Open garbage pit <input type="checkbox"/> Vacant lot <input type="checkbox"/> Kept buried for reuse (fertilizer) <input type="checkbox"/> buried in yard <input type="checkbox"/> buried on someone else's land <input type="checkbox"/> Other _____ <input type="checkbox"/> Don't know <input type="checkbox"/> N/A
65. Does your school ever get flooded?	<input type="checkbox"/> No <input type="checkbox"/> once a year <input type="checkbox"/> a couple of times per year <input type="checkbox"/> once or more per month <input type="checkbox"/> don't know
66. If flooded, do the toilets flood also?	<input type="checkbox"/> never <input type="checkbox"/> sometimes <input type="checkbox"/> most of the times <input type="checkbox"/> always <input type="checkbox"/> don't know <input type="checkbox"/> N/A

5. MENSTRUAL HYGIENE MANAGEMENT AND COSTS

67. Is there a facility to provide an emergency supply of sanitary pads for girls if required?	<input type="checkbox"/> Yes <input type="checkbox"/> No
68. Does the school spend money on materials for menstrual hygiene management? (E.g Bin, Napkin) (Take a look at the registry, receipts)	<input type="checkbox"/> Yes _____ per month <input type="checkbox"/> No _____ per year
69. Do the students or parents contribute to any costs?	<input type="checkbox"/> Yes Taka per month..... Taka per year <input type="checkbox"/> No

Costs of WASH Facilities in the School

S.no	Users*	Compartments	Year of Cons.	Type of Latrine**	Expenditure/ Cost				
					BRA C	Govt	School	Community	O. Agencies
1									
2									
3									
4									
5									
6									
7									
8									

* Only for girls (L1), Only for boys (L2), Only for teachers (L3), For both Boys and Girls (L4), For Female teachers and girls (L5), For Male teachers and Boys (L6), Only Female Teachers (L7), Only Male Teachers (L8)

** Septic + Offset (T1), Twin pit Offset (T2), Single pit Offset (T3), Twin Pit (T4), Single Pit (T5), Unhygienic (T6), Others (T7, Please specify _____)

1. Capital Costs of the Urinals

(If it is already part of Toilet Unit Construction Cost, do NOT fill this table)

Urinal Users	Number	Year of Cons.	Expenditure/ Cost				
			BRAC	Govt	School	Community	Other Agencies
For Boys							
For Girls							
For both Girls and Boys							

Others (Please specify)							
It is already a part of latrine construction (Give a tick)							
2. Capital Cost of the Handwashing Facilities							
ie. Running water from a piped system or tank (such as faucet and sink, stand post or rainwater tank with a faucet) (If it is already part of Toilet Unit Construction Cost, do NOT fill this table)							
Handwashing Station:	No.	Year of Cons.	Expenditure/ Cost				
			BRAC	Govt	School	Community	Other Agencies
For Boys							
For Girls							
For both Girls and Boys							
Other (please specify)							
It is already a part of latrine construction (Give a tick)							

3. Capital Cost of the Drinking water facilities							
(If it is already part of Toilet Unit Construction Cost, do NOT fill this table)							
S. No	Description of drinking water facility*	Year of Cons.	Expenditure/ Cost				
			BRAC	Govt	School	Community	Other Agencies
1.							
2.							
3.							
4.							
5.							
It is already a part of latrine							

construction (Give a tick)	
*For eg. Tube well with built-in overhead tank and pipeline (motor, tube well with platform, tube well without platform, public tap water, rainwater, pond sand filter, other, specify	

4. ADDITIONAL COST questions (bulk amounts/ CAPMANEX)		
Did you spend large amounts of money on maintaining the latrines, water facilities or hand washing stations? (if there was, indicate costs below)	[] Yes [] No If Yes Taka []	
Type of cost	Year	Taka
Painting	2005,2008,2012	3000+2000+2500=7500
Repair doors, floor, etc		
Upgrading Costs		
Pit Emptying		
Others		
Opinion of your visit:		

ANNEX 2 List of schools in the sample

- 1 Adorso High School
- 2 Ajij High School
- 3 AKBK Middle School
- 4 Akota High School
- 5 Amena Korim High School
- 6 Amtali High School
- 7 Amtoli High School
- 8 Araji Boja Pukur High School
- 9 Atbaria Ashamotullah Girls Madrasa
- 10 Atharo Mail BAMK dakhilmadrassa
- 11 Athlia Madhomik School
- 12 Bachharibari RRG T Middle school
- 13 Baduria Middle School
- 14 Bahadur Hat Girls High School
- 15 Baiguni Lower Middle Girls School
- 16 Banda High School and college
- 17 Bania Khali Middle School
- 18 Bedora Alim Choudhury High School
- 19 Betagram Middle School
- 20 Bianibazaar Girls High School
- 21 Birajmoyi Madhomik School
- 22 BIZH Girls High School
- 23 Bolrampur Dakhil Madrasa
- 24 Boro Karimpur Vogir Para Dakhil Madrasa
- 25 Bottoli High School
- 26 Buruj Adorsho Gram Girls High School
- 27 Chechuri Darus Munnah Dakhil Madrasa
- 28 Chokboho Bohumukhi High School
- 29 Choupukuria High School
- 30 Chowdhury Hat High School
- 31 Chuknagar NDS Women Dhakil Madrasa
- 32 Deyli Araji Loskora High School
- 33 Dhulauri Kasimnagar High School
- 34 Doyarampur Sirajul Haque dakil Madrasa
- 35 Dubag Ideal Academy
- 36 Duguria NGK and NCK Middle School
- 37 Farah Madhomik School
- 38 Gutudia ACGB Middle School
- 39 Hajidanga Kholshi
- 40 Hamidpur Girl Madrasa
- 41 HMPKK Middle School
- 42 Hossainpur Jakaria Dakhil Masrasa

- 43 Indrokumari Girls High School
- 44 Jaguli Di-mukhi High School
- 45 Jindapir Darus Salam Dakhil
- 46 jksk Ideal Middle Schhol
- 47 Jogoddol High School
- 48 Joybhoga Hafizia Dakhil Madrasa
- 49 KAB High School
- 50 Kagael Nayebullah Dhakil Madrasa
- 51 Kagoil Koruna Kanto High School
- 52 Kallani Girls High School
- 53 Kathgarh Dakhil Madrasa
- 54 Khukra Islamia Ojedia Dakhil Madrasa
- 55 Kobi Nuzrul High School
- 56 Kobiraj Hat Adorsso Girls High School
- 57 Kolakopa Atbojan Memorial
- 58 Kollani High School
- 59 Korim Para BM Madrasa
- 60 Krishnochondro High School
- 61 Kulti Madhomik School
- 62 Lota Khamarbari Middle School
- 63 Mahanpur Girls High School
- 64 Mariam Nogor Girl high School
- 65 Mathigonj High School
- 66 Matiakura High School
- 67 Mikshimil Rudaghora High School
- 68 Mina Gazi Motiul Ulum Dakhil Madrasa
- 69 Mirerkhal High School
- 70 Mirzapur Middle School
- 71 Modhugram Madhomik Bishaloy
- 72 Mohanpur Ideal High School
- 73 Mohishaban Bohumukhi High School
- 74 Moria RMP Dimukhi High School
- 75 Moriumnogor Islamia Dakhil Madrasa
- 76 MRM High School
- 77 Muraripur Di mukhi High School
- 78 Padua High School
- 79 Pipolakandi High School
- 80 Polli Jagoroni Middle School
- 81 Polli Mongol Lower Middle School
- 82 Polli Sree Girls Middle School
- 83 Polli Sree Middle School
- 84 Pran NogorIdial Girls School
- 85 Purbo Shorof Bhata Ideal School
- 86 Rahimbox High School

- 87 Rameshor Uttor Para Girls Dakhil Madrasa
- 88 Rameshorpur High School
- 89 Ranai Mohila Dakhil Madrasa
- 90 Rangunia Khilmogol Roshik High School
- 91 Rotari Betagi Union High School
- 92 Salayha Hossan Darussunnot Madrasa
- 93 Sanoar High School
- 94 Shabek Para DelowariDakhil
- 95 Shahid Zia High School
- 96 Shahid Ziaur Rahman Girls College
- 97 Shahpur Bohumukhi Madhomik School
- 98 Shahpur Madhomik Girls school
- 99 Shalua Murnochondro Madhomik School
- 100 Shonakalia Dakhil Madrasa
- 101 Shonar Gohe High School
- 102 Shonka Dimukh High School
- 103 Shoptogram High School
- 104 Shorifpur Shahid Zia Middle school
- 105 Shorofbhata Union High School
- 106 Sibrampur High School
- 107 Sitalohi Alim Madrasa
- 108 Soto Grame High School
- 109 Tipna Angardoha Dakhil Madrasa
- 110 Tipna Sheikh Amjad Memorial
- 111 Tollatola Dakhil Madrasa
- 112 Topbon Middle School
- 113 Ujgram Pintu High School
- 114 Ula Majdialslamia Dakhil Madrasa
- 115 Ula Mohkhali Madhomik School
- 116 Ulkamadhomik Girls School
- 117 Vog Nogor Dakhil Madrasa

