Baseline Study on
WASH for Community Development in Banglabazar, Gazipur





Prepared by

Golam Mahiyuddin
Manzuma Ahsan, Faisal M. Ahamed,
Md. Abdus Sobhan, Nurunnahar

HDRC Human Development Research Centre
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Study undertaken for

WaterAid

Dhaka: 21 May, 2017

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[1]Team Leader, and Senior Consultant, Human Development Research Centre (HDRC)
[2]Consultant, Human Development Research Centre (HDRC)
[3]Research Associate, Human Development Research Centre (HDRC)

SUMMARY TABLE OF KEY FINDINGS

Topic	Indicator	Value in %	N
	WASH at Household Level		
Water Supply	Access to improved drinking water facilities	69.8	225
	Water facilities with broken or no platform and loose base	30.2	225
	Household with access to bacteria (Coliform) free drinking water source [TC(< 10CFU)/100ml]	88.5	96
	Household with access tofree of excess amount iron in drinking water (Fe < 1 mg/L)	100.0	96
	Household with access tofree of excess amount arsenic in drinking water (As < 0.05 mg/L)	100.0	96
	HHs with access to safe source of drinking water facilities	88.5	96
	HHs with effective use of WSP	7.1	225
Sanitation	Access to improved (not shared) sanitation facilities	27.6	225
	Access to shared latrine otherwise improved	50.7	225
	Cleanliness of latrine	53.8	225
	HHs with hand washing place with water at or near the latrine	87.1	225
	Hand-washing place with soap and water near to latrine	57.7	196
	Hand-washing place with water near to Kitchen	80.0	225
	Knowledge of hand-washing at critical times		225
	Before taking food	87.7	
	Before preparation/cooking of food	48.9	
	After using latrine	98.7	
	After cleaning baby's bottom	30.2	
	Before feeding baby	15.6	
	Before serving food	11.6	
	Practice of hand-washing at critical times		225
	Before taking food	69.8	
	Before preparation/cooking of food	37.8	
	After using latrine	96.9	
	After cleaning baby's bottom	12.4	
	Before feeding baby	4.0	
	Before serving food	0.9	

Topic	Indicator	Value in %	N
	Safe disposal of child's faeces into improved latrine	78.0	444
Topic	Indicator	Value in %	N
Menstrual management	Knowledge on appropriate material to be used during the period		225
	Rag of clothes	57.8	
	Sanitary napkin	26.7	
	Others	2.2	
	Menstruation sopped	13.3	
	Material commonly used during the period		195
	Rag	72.8	
	Sanitary napkin	23.6	
	Disposal of sanitary pad		51
	Waste basket	17.6	
	Drain	23.5	
	Latrine	13.7	
	Buried	13.7	
	Pit/hole	31.4	
	Availability of place of disposal at work place	85.2	115
Waste disposal	Disposal of solid waste		225
	Specific place	15.1	
	Randomly around	4.9	
	In the open field	4.4	
	Taken by private sweeper	4.9	
	Ditch/drain /canal	9.3	
	In a specific pit with or without lid	60.9	
	Disposal for faecal sludge/liquid waste		225
	Canal/bill/marshy land	83.6	
	Pit/hole/soakage pit	16.4	
	WASH Situation at Schools		
Water supply	Access to improved drinking water facilities	33.3	15
	Water facilities with broken platform	44.4	9
	School with access to bacteria (Coliform) free drinking water [TC(0CFU)/100ml]	73.3	15
	School with access tofree of excess amount iron in drinking water (Fe < 1 mg/L)	100.0	15
	School with access tofree of excess amount arsenic in drinking water (As < 0.05 mg/L)	100.0	15
	Distance of drinking water source from the latrine		
	Less than 30 ft	66.7	9
Sanitation	Access to improved sanitation facilities	26.7	15
	Clean latrine	73.3	15

Topic	Indicator	Value in %	N
Hygiene	School having hamd-washing facility	86.7	15
	Hand-washing facility with soap and water	46.2	13
	Distance of hand-washing place from latrine		
	Less than 10 steps	66.7	15
	Observed practice of washing both hands with soap and water after using latrine		
	Boy	9.9	161
	Girl	9.9	191
	Observed practice of washing both hands with soap and water before taking food		
	Boy	13.0	161
	Girl	3.1	159
Environment	Cleanliness of the class room	93.3	15
	Cleanliness of the school premises	73.3	15
	WASH Situation at Community Clinics		
Water supply	Access to improved drinking water facility	0.0	2
	Distance of drinking water source from the latrine	<30ft	NA
Sanitation	Access to improved/sanitary sanitation facilities	1	2
	Clean of the latrine	1	2
	Separate latrine for		2
	Staff	No	
	Male patients	No	
	Female patients	No	
Hygiene	Hand-washing facility with soap and water for		2
	Staff	No	
	Male patients	No	
	Female patients	No	
Waste management	Mode of solid/medical waste management	Burning	2

Acknowledgements

WaterAid, is working in Bangladesh for improving access of the poor and marginalised population to safe drinking water, sanitation and hygiene since 1986. Recently, WaterAid Bangladesh together with other development partners and Universities have selected Banglabazar to address the dire WASH situation of the area.

We express our deep gratitude to the relevant officials of WaterAid, Bangladesh for entrusting Human Development Research Centre (HDRC) to carry out this important survey to measure WASH situation in the project areas.

We owe our profound gratitude to Dr. Md. Khairul Islam, Country Director of WAB for his very timely decision about the urgency to conduct the assessment WASH situation of poor and marginalised population in Banglabazar, Gazipur study and for his unstinted support extended throughout the study.

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Should the analysis presented in the study be useful in understanding not only a particular water, sanitation and hygiene project led by WaterAid in Bangladesh, but also the multidimensional and complex real life issues of water, sanitation and hygiene in a newer horizon, our efforts put in the study would be considered worthwhile.

Golam Mahiyuddin,
Manzuma Ahsan, Faisal M. Ahamed, Md. Abdus Sobhan, Nurunnahar

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ACRONYMS

DTW	Deep Tube-well
GCC	Gazipur City Corporation
HDRC	Human Development Research centre
HH	Household
JMP	Joint Monitoring Programme
KII	Key Informant Interview
LGI	Local Government Institution
MHM	Menstrual Hygiene Management
NGO	Non Government Organization
PSU	Primary Sampling Unit
RNGPS	Registered Non-government Primary School
STW	Shallow Tube-well
SWM	Solid Waste Management
TTC	Thermotolerant Coliform
UNDP	United Nation Development Programme
WASH	Water Sanitation and Hygiene
WSP	Water Safety Plan

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EXECUTUVE SUMMARY

Background: Banglabazar is one of the nine wards in Gazipur City town, a growing industrial area on the outskirts of Dhaka City where the number of slums and low income settlements are increasing as a result of growing number of factories. It has a population of more than 100,000. Living conditions in Banglabazar is poor, not least in relation to water and sanitation and hygiene (WASH). Overall environmental sanitation (waste management, faecal sludge management, drainage, public sanitation facilities) is dire or almost non-existent. Hygiene practices are also very poor. WaterAid Bangladesh together with H&M Bangladesh, Mohammadi Group (owner of factories supplying H&M), UN Women, the United Nations Development Program (UNDP), Solidarity centre, Warwick University and Dhaka University have selected Banglabazar to address the dire WASH situation in Banglabazar community. The selection is based on its manageable size, strong industrial growth, and harsh living conditions for the rapidly increasing number of residents.

Objectives: The broad objective is to understand and analyse present WASH situation of Banglabazar. The specific objectives are to – (i)know the proportion of households have access to safe drinking water facilities, (ii) find out the level of Thermotolerant Coliform (TTC), Iron and Arsenic in the water of the facilities, (iii) know the proportion of households have access to improved sanitation facilities, (iv)understand the proportion of households are practicing water safety plan (WSP)(v)know proportion of households have hand-washing facilities with soap and water near the latrine and kitchen, (vi)measure knowledge and practice of the target population regarding hand-washing at critical times, (vii) know proportion of households dispose faeces of under five children safely, (viii) measure the knowledge and practice of the female of reproductive age about Menstrual Hygiene Management (MHM), (ix) understand the Solid Waste Management (SWM)[4] practices of HHs and communities(x)know the present situation of faecal sludge management in the project target area, (xi) assess the WASH situation of 2 Community Clinics in the project targeted area, (xii)analyze WASH situation at 15 schools in the project targeted area, and (xiii) understand present capacity of LGI, WASH service providers and duty bearers to deliver WASH service effectively.

Methodology: The study design is a combination of quantitative and qualitative techniques. Data were primarily collected through individual interviews at household level for quantitative survey. Qualitative techniques were four focus group discussions (FGD), and eight key informant interviews (KII), check lists for fifteen schools and two community clinics survey. In addition water samples were collected from selected water sources and corresponding households in community and water source from all surveyed schools and community clinics to understand the level of Total Thermotolerant Coliform (TTC), Iron and Arsenic.

In the project area, targeted 2,500 households were listed using a household listing format. The households were then segmented into a group of 100 HHs yielded a total of 25 segments/clusters. These clusters were considered as Primary sampling Units (PSU) or cluster. From each selected cluster, 9 households (Total 225) were selected following systematic random sampling using household list prepared prior to survey.

Key findings

Background characteristics: Some 31.1 percent of respondents is either illiterate or has non-formal education. A 12.5 percent respondents is primary passed and 14.7 percent has passed SSC or higher. Reportedly, 92.9 percent is currently married. A 52 percent of surveyed households are made of brick and cement with tin on roof and 41.8 percent is made of tin exclusively. Some 47.1percent respondents live in own houses and others in rented houses. Almost all households are connected to electricity and 62.7% has TV, that mostly watch "STAR Jalsha" channel and enjoy Indian bangle drama/serial accounts 84.4 and 85.8 percent respectively. Half of the respondents use mobile phone, 15.8 percent of those are smart phone. Average monthly income and expenditure of the households are Tk. 18,244 and 17,530, where 60.4 percent can save portion of their income.

Water supply facilities: All (100%) of the surveyed households use improved source of water for drinking as well as for other domestic use. However, 30.2 percent of the tube-wells either have no platform or broken platform or week/loose at base, which are at risk to contaminate the source water. Access of the households to improves source of drinking water 69.8 percent. The most (96%) pronounced source is shallow tube-well without marking. Water sources are largely (61.3%) owned by landlords and shared with other households.

Access to safe water: Water sample of 11 randomly selected water sources demonstrates that none of the households are likely to collect water from these 11 sources, and are exposed to excess amount of arsenic and/or iron. However out of 11 water sources water sample 2 sources were found microbiologically contaminated, thus 11 households of 96 beneficiary are exposed 2 contaminated water sources reportedly fails to meet WAB standard of coliform (CFU < 10/100 ml of water) and is microbiologically contaminated water.

Water safety plan (WSP): Considering indicators of WSP as container is cleaned with drinking water before collection of water for drinking, lid of the container is in place while transportation to home, the water is stored at home in a clean and covered container and rest the container in a little elevated place, and finger or part of the hand is not dipped into water while drinking and serving the water. Thus estimated percentage of households with effective practice of WSP is 7.1.

Adequacy of water: All (100%) households of the surveyed respondents have access to adequate (≥ 20 liters per person per day) amount of water to meet their different domestic basic need like drinking, cooking and cleaning up, maintaining personal hygiene, and washing clothes.

Time spend for water collection: Average time taken for water collection (travel and queue) is 2.6 minutes. In 43.1 percent households, water point is either inside the dwelling, yard or plot. Another 41.8 percent households takes less than 5 minutes to collect water. It is less than 10 minutes to others.

Hand washing place: In 87.1 percent households, water is found in hand washing place at or near the latrine and in 80 percent of hand-washing place at or near to kitchen. Among the households having hand-washing place, soap at or near the hand-washing place for latrine and kitchen is observed in 57.7 and 80 percent households respectively.

Hand-washing at critical times: The most widely known critical times of hand washing are after using latrine (98.7%) and before taking food (87.6 %); and to some extent after cleaning baby's bottom (48.9%). On the other, reported common practice of hand-washing are 96.9 percent after use of latrine and 69.8 percent before taking food. Reportedly, 89.9 percent of the respondents wash their hands with soap and water after use of latrine.

Disposal of child faeces: Percentage of households likely to dispose child faeces safely into improved latrine is 78.

Menstrual hygiene management (MHM): The most familiar absorbent material during menstruation known to the respondents is re-usable rag (57.8%), followed by sanitary pad/napkin (26.7%). However, 72.8 percent of the respondents uses rag and sanitary napkin/pad by 23.6 percent. Among rag users, 98.7 percent wash the rag with soap and water before the next use. Some 42.9 percent dry the washed rag under sun by placing beneath a cloth, others do it in a hidden place inside room. Napkin users dispose of the pad indiscriminately into drain, waste basket/bin, pit/ditch and latrine.

Sanitation facilities: Overall, 78.3 percent households uses sanitary means of excreta disposal. However, 50.7 percent households shares the latrine with two or more households. Thus adjusted percentage of households using improved (not shared) sanitation facility is 27.6 percent.

Access to sanitation facility: A 14.7 percent households cannot use latrine during rainy season due to water logging. Household having access to improved sanitation has bees estimated as 66.2 percent.

User friendliness of latrine: Latrines are not user-friendly to 32.9 percent households because of dirty/filthy condition. Males and females have to stand in queue together at the same line and get little time to complete the task due to overcrowding.

Disposal of solid waste: Largely (60.9%), households dump the solid waste into ditch/marshy land. Nevertheless, 15.1 percent households dispose of the solid household waste in a specific place and in 4.9 households, waste are removed by locally paid carrier.

Liquid waste is usually drained out indiscriminately to surrounding land and canal/marshy land (83.6%). Few (13.8%) drains the household liquid waste to a nearby pit.

Capacity of LGI/WASH service providers and duty bearers:

As regard to capacity of delivering WASH services, at present GCC is experiencing challenges in solid waste management, water supply, water logging due to lack or absence of proper drainage system, land crisis for dumping solid waste, and inadequate fund. For the first time GCC has proposed Taka 1,00.00 lakh for 100% Sanitation Programme in its annual budget for Year of 2016-2017.Therefore, GCC is not in a capacity to extend the WASH services to a new area other than Tongi and Gazipur proper. According to them it will take time to initiate WASH services in Banglabazar.

WASH in school: Physically 33.3 percent of the surveyed schools has own improved source of drinking water within the school premises. However,28.6% platform of the water source in 4 out 14 are broken and potentially at risk for source water contamination. Shallow tube-well

is the most widely observed source. Regarding access to safe drinking water source, tested water source of all the surveyed schools is devoid of excess level of arsenic and iron. However, water source of 5 (26.7%) schools are contaminated with coliform group of microorganism. Distance between the water source and latrine is less than 30 feet in 66.7 percent of the schools having own water supply source. Among the surveyed schools, 99.3 percent of the schools have latrine for the students within their campus and improved in nature. On average there is one functional latrine and/or urinal for 99 students in the surveyed schools against the national standard of 50-60 students for one latrine or urinal. In 86.7 percent schools, hand-washing place is less than 10 steps from the latrine and soap was observed in 46.2 percent of hand-washing places. Regardless one or both hands, direct observation reveals that 23 percent boy and 33.5 percent girl washes their hands with soap and water after use of latrine. Corresponding figures are 21.1 percent and 13.2 percent for the boys and girls before taking food. Except one, class room of the other surveyed schools is found neat and tidy. Solid waste, largely rubbish, is usually disposed of beside the schools or nearby pit/ditch. Most of the schools have no formal drainage system.

WASH in community clinics

None of the observed community clinics (CCs) have functional source of water supply. Both the clinics use neighborhood water source. There is an improved functional latrine in one community clinic but not in use due lack of water. In other community clinic none of the latrines are suitable for defecation as one is found blocked and exit pipe other latrine found ruptured.. Irrespective of staff and patients, no hand-washing place is seen with water and soap. At both clinics, medical waste is disposed of incinerator. None of the community clinics have formal drainage system to pays the storm water from the courtyard.

Chapter-1
INTRODUCTION

1.1 Background

Gazipur is one of the three City Corporations in Dhaka megacity and was incorporated newly in June 2013. This GCC covers 57 wards populated by over 3.5 million people[1]. Banglabazar is one of nine wards in Gazipur City, a growing industrial area on the outskirts of Dhaka City where the number of slums and low income settlements is increasing as a result of a growing number of factories. It has a population of more than 100,000. The area has a few market places, educational institutions, transport and communication facilities, urban settlements and agricultural fields. Living conditions in Banglabazar is poor, not least in relation to water and sanitation and hygiene (WASH). Overall environmental sanitation (waste management, faecal sludge management, drainage, public sanitation facilities) is dire or almost non-existent. Hygiene practices are also very poor which, coupled with the environmental conditions, perpetuates illness and increases disease burden for families results in workday losses and additionally drains out family income. Improving these conditions is imperative given that more and more people are moving to slums and low income communities in order to access jobs – the United Nations (UN) predicts that urbanisation will stand at more than 50% in Bangladesh by 2045.

According to a recent survey[1], 80% of the inhabitants in Banglabazar live in rented accommodation, while only around 20% own their house and pay a mortgage. In the weeks previous to the survey, 50% of the households spent 1,580 BDT or less per week on food, and only 25% spent more than 2,000 BDT. In the month prior to the survey, 50% of the households spent less than 950 BDT on utilities, less than 25% spent more than 1,200 BDT. Lastly, 31% of all household members had fever on more than 2 days during the last two weeks prior to the interview. To summarise the WASH situation in Banglabazar, the poor WASH conditions foster diseases like diarrhoea, respiratory tract infection, and urinary tract infection in women which ultimately results in workday losses and additionally drains out family income.

WaterAid, an international non government organisation (NGO) started its operation in Bangladesh in 1986 and since then it has been working for improving access of the poor and marginalised population to safe drinking water, sanitation and hygiene. As a part of a joint community development initiative, recently WaterAid Bangladesh together with H&M Bangladesh, Mohammadi Group (owner of factories supplying H&M), UN Women, the United Nations Development Program (UNDP), Solidarity centre, Warwick University and Dhaka University have selected Banglabazar to address the dire WASH situation in Banglabazar community. The selection is based on its manageable size, strong industrial growth, and harsh living conditions for the rapidly increasing number of residents.

[1]Bangladesh Bureau of Statistics, March 2011 census and PSE Fact Sheet 2011

The project activities will be starting shortly which requires a baseline study to understand the context and set out necessary benchmarks on present conditions. The baseline is expected to serve assessment of project outcomes at the end of the project. WaterAid Bangladesh thus intends to engage a consultant/consulting firm to carry out the baseline study as per this Terms of Reference (TOR). Human Development research centre (HDRC) was selected to undertake this assignment.

1.2 Project Overview

Over a period of four years the project will be implemented to support workers of three garment factories and the communities they live in with families in partnership with a national NGO to achieve the following objectives.

1. To increase access to safe drinking water, improved sanitation and hygiene practice for residents in Banglabazar
2. To increase decision makers' awareness of the importance of WASH
3. To increase integration of WASH in other sectors

The targeted population of the project is approximately 10,600 residents (approximately 2,500 households) living in Banglabazar.

1.3 Study Objective

The broad objective of the study is to understand and analyse present WASH situation of Banglabazar and provide necessary benchmark on the current situation against each specific objective for setting priority need and monitoring.

The specific objectives of the study are as follows:

1. To know the proportion of households have access to safe drinking water facilities
2. To find out the level of Thermotolerant Coliform (TTC), Iron and Arsenic in the water of the facilities in targeted intervention areas.
3. To know the proportion of households have access to improved sanitation facilities
4. To understand the proportion of households are practicing water safety plan (WSP)
5. To know proportion of households have hand-washing facilities with soap and water near the latrine and kitchen.
6. To measure knowledge and practice of the target population regarding hand-washing at critical times
7. To know proportion of households dispose faeces of under five children safely
8. To measure the knowledge and practice of the female of reproductive age about Menstrual Hygiene Management (MHM)
9. To understand the Solid Waste Management (SWM)[4] practices of HHs and communities
10. To assess present situation of faecal sludge management in the project target area
11. To assess the WASH situation of 2 Community Clinics in the project targeted area
12. To analyze WASH situation at 15 schools in the project targeted area
13. To understand present capacity of LGI, WASH service providers and duty bearers to deliver WASH service effectively

1.4 Organization of the Report

The report is comprised of nine chapters. Chapter I introduces the background and objectives of the study, Chapter II gives an idea about methodological aspect of the study including sample design, sample size, methods used for the study, Chapter III analyses background characteristics of surveyed households, the key focus of Chapters IV is on water supply facilities associated issues including water quality and water safety plan, Chapter V concentrates on access to sanitation facilities, disposal of solid and liquid waste, and capacity of WASH actors in delivering WASH services, Chapter VI analyzes hygiene knowledge and practices including menstrual hygiene management, VIIand VIII summarizes the situation of WASH situation in schools and community clinics respectively and Chapter IX delineates the recommendations of the study for possible intervention and future improvements.

Chapter-2
METHODOLOGY

2.1 Study Methodology

The study design is a combination of quantitative and qualitative techniques. Data were primarily collected through household survey in the project area for quantitative survey. Qualitative techniques were Focus Group Discussions (FGD), and Key Informant Interviews (KII). In addition water samples were collected to understand the level of Total Thermotolerant Coliform (TTC), Iron and Arsenic.

2.1.1 Quantitative Survey Design for HH survey

The targeted 2500 households were listed using a household listing format. Such format was used for household selection for survey. The targeted 2,500 households (according to ToR) were segmented into group of 100 HHs yielded a total of 25 segments/clusters in the project area. These segments/clusters are considered as Primary sampling Units (PSU) for the survey. From each selected segment/cluster 9 households were selected following systematic random sampling using household list prepared prior to survey.

2.1.2 Sample Size for Quantitative Survey

The sample size of households for the survey was powered to detect a certain percent difference for selected indicators for the project outcome. The sample computations were based on census data available for Gazipur district on sanitation status (only 29.4% HHs in Gazipur district has access to water sealed latrine) assuming one-tailed hypothesis (assuming the changes in target indicators changes will be for positive outcomes) that there is a difference in compliance between two components at a 5% significance level with 80% power. The sample size was adjusted by a design effect of 1.5 and 5 percent non-response. The sample size for survey had been calculated using the following equation:

$$n = \left(\frac{Z_\alpha \sqrt{(2P(1-P)} + Z_\beta \sqrt{((P_1(1-P_1) + P_2(1-P_2))}}{(P_2 - P_1)} \right)^2 \times D \times n_r$$

Where, n = required minimum sample size per survey round or comparison group; P_1= the estimated aggregated poverty head count ratio at project district according to poverty map; P_2= the proportion at some future date of such estimate that the quantity (P_2– P_1) is the size of the magnitude of change it is desired to be able to detect; Z_α= the z-score corresponding to the probability with which it was desired to be able to conclude that an observed change of size (P_2– P_1) would not have occurred by chance; Z_β= the z-score corresponding to the degree of confidence with which it was desired to be certain of detecting a change of size (P_2– P_1), if one actually occurred; P = (P_1+ P_2) / 2; D = design effect; and N_r = Non-response rate.

The estimated sample size for random treatment households is demonstrated in Table 1 along with the required number of PSUs. Selected household is eligible for only one interview.

Table 2.1: Sample size of random households

Indicator	Po (Baseline)	P1 (Expected)	Change (%)	$Z_\alpha = 1.645$	$Z_\beta = 0.84$	Design effect = 1.5	Non-response =5%	Estimated Sample	Adjusted Sample	PSUs	HH per PSU for survey
HHs in Gazipur district has access to water sealed latrine	29.4%	44.1%	50%					218	225	All (25)	9

The Total Sample Size of Households for this Survey is 225. Households were selected from segments of 100 HHs within survey area. However, during household listing of the surveyed area, data on disposal of child faeces was collected from 444 households reportedly having under-five children in these households.

2.1.3 School Survey

Within project targeted area, WASH situation in 15 schools was observed. Observation focused on functionality and physical condition of water point and sanitation facility. An observation checklist was prepared for such inspection. In addition water samples from drinking water source were collected from each school for water quality testing regarding TTC, Iron and Arsenic.

2.1.4 Community Clinics Survey

Alike school observation, observation was taken place in 2 community clinics in the project target area. An observation checklist was prepared for such survey. Observation focused on functionality and physical condition of water point and sanitation facility. Due to absence of functional water source, water sample for detection TTC, Iron and Arsenic were taken of their respective alternate source.

2.1.5 Survey for Water Quality Testing

Water quality testing involved examination of the level of Total Thermotolerant Coliform (TTC), Iron and Arsenic in water. Water samples were collected from water source(s) as well as households at community level. From each selected cluter (segment of 100 HHs) one water sample was collected from source and 2 samples were collected from two separate HHs of the corresponding water source by the household data collector after receiving training on water sample collection at DPH regional Laboratory, Tongi. Collected water samples were properly labeled and sent to the Regional Laboratory for estimation of TTC, Iron and Arsenic level.

A total of 50 water samples were collected during this survey (11 from drinking water sources and corresponding 22 from HHs at community level, 15 drinking water sources from schools and 2 from community clinics).

2.1.6 Qualitative Data Collection

Apart from quantitative data collection from households, qualitative methods were conducted through discussion with community people at survey locations, on sight observations, and Key Informant interviews. Following were the methods for qualitative information collection.

- ✓ Focus Group Discussion (FGD)
- ✓ Key Informant Interviews (KII)
- ✓ Observation Checklist (OC)

Focus Group Discussion (FGDs)

Focus Group Discussions were conducted with target population in the project area to learn the untold stories about water sanitation scenario among them and their suggestions and observations. A total of 4 FGDs were conducted at Purbo Bahadurpur, Nanduain Uttar para, Mohishmara, and Anandabazar areas for the survey with an average of seven participants at different location of the project area at Banglabazar.

Key Informant Interviews (KIIs)

KIIs were expected to explore important information and insights about engagement of concerned personnel related to WASH management in the project area and used to assess the capacity of WASH service delivery. KIIs were conducted with Chief Executive Officer of GCC, Assistant Engineer for Water Supply of GCC, Concerned officer for Sanitation and Waste Management of GCC, Forester (Beat officer), Jatio Nagar Uddyan Range, Ward councilor of ward 22, School teacher and partner NGO of WaterAid. A total of 7 KIIs were conducted for the current survey.

2.2 Document Reviewing

Necessary program, project, policy, and strategy documents were reviewed to understand the contribution of the project in finalizing National Hygiene Promotion Strategy.

2.3 Summary of survey

Method	Sample
Household Survey	225
School Survey	15
Water Sample	50
Focus Group Discussion	4
Key Informant Interview	10

2.4 Key Indicators against the Study Objectives

Table 2.2: Key indicators

Description	Indicators
Objective: 1 To know the proportion of households have access to safe drinking water facilities	• Distance of water source from dwelling house • Access to drinking water free from contamination of TTC, arsenic and iron • Time taken for water collection (round trip plus waiting time) • Location of water source and social restriction
To find out the level of TTC, Iron and Arsenic in the water of the facilities in targeted intervention areas.	• Laboratory examination of quality of drinking water by detection of TTC, Iron and Arsenic level in water samples both at source and household
To know the proportion of households have access to improved sanitation facilities	• Type of latrine use • Sharing of latrine

Description	Indicators
Access to latrine	• Distance of water source from dwelling house • Distance of latrine from water source • Easy to use for people with special needs • Child and gender friendly facility at institutional level
To understand the proportion of households are practicing water safety plan (WSP)	• Washing of container with drinking water before collection of water • Covering of container with lid while transporting water • Storing water in clean container with lid • Store container in raised platform/place • Do not dip the finger/hand into water of a glass or reserving while drinking or swerving water
To know proportion of households have hand-washing facilities with soap and water near the latrine and kitchen	• Availability of cleaning materials (soap) near the hand washing place • Distance of water source(hand-washing place from latrine and kitchen
To measure knowledge and practice of the targeted population regarding hand-washing at critical times	• Knowledge and practice of hands-washing after defecation • Knowledge and practice of hands-washing before taking/serving/cooking food • Knowledge and practice of hands-washing after taking food • Knowledge and practice of hands-washing before feeding child • Knowledge and practice of hands-washing after cleaning baby's bottom
To know proportion of households dispose faeces of under five children safely	• Number of households with under-5 children • Number of households dispose child faeces in safe places
To measure the knowledge and practice of the female of reproductive age about Menstrual Hygiene Management (MHM)	• Awareness about absorbent to be used during period • Type of pad/absorbents used • Place of disposal of used pad/absorbents • Cleaning material use in case of reuse • Place of drying and storage • Frequency of change of pad per day • Practice cleaning of genitalia per day
To understand the Solid Waste Management (SWM) practices of HHs and communities	• Presence of public dustbin • Presence of garbage pit • Arrangement for regular disposal of solid waste
To assess present situation of faecal sludge management in the project target area	• Existence of sewerage line • Existence of drainage system • Arrangement of disposal of faecal sludge and liquid waste management
To assess the WASH situation of Community Clinics in the project targeted area	• Source of drinking water • Availability of water round the day/year • Adequacy of supply • Quality of drinking water • Quantity (number) of water source/points • Distance of water source from CC

Description	Indicators
	• Type of latrine • Quantity of latrine • Separate latrine for male and female • Separate latrine for male-female staff • Presence of soap at hand washing place • Cleanliness of the premises
To analyze WASH situation at schools in the project targeted area	• Source of drinking water • Availability of water round the day/year • Adequacy of supply • Quality of drinking water • Quantity (number) of water source • Distance of water source from CC • Type of latrine • Quantity of latrine • Separate latrine for male and female • Separate latrine for male-female teachers • Distance of hand-washing place from the latrines • Presence of soap at hand washing place • Presence of waste-basket in the class room • Cleaning of the premises
To understand present capacity of LGI, WASH service providers and duty bearers to deliver WASH service effectively	• WASH plan and policy • Adequate number of skilled manpower • Coordination with other sectors • Fund for institutional capacity development and for operation and maintenance

2.5 Water Quality Testing

Broadly water quality testing involved two specific tasks, i.e. biochemical test and bacteriological test. Tests were done for the water samples collected from community level as well as institutional (schools and community clinics) level.

(i) Biochemical tests
- Detection of Iron level in drinking water
- Detection of Arsenic level in drinking water

(ii) Bacteriological test
- Bacteriology test of drinking water

At community level, after completion of listing of households, 11 clusters were selected randomly and then in each cluster, one water sample was collected from a drinking water source randomly and two samples from stored drinking water of two separate households of the corresponding source. In such way, 33 (11 water sources and 22 corresponding HHs of the water sources) water samples were collected from randomly selected 11 clusters.

Water samples for bacteriology test were collected aseptically (e.g. cleaned the tube-well end with clean tissue paper, pumped out of water from the tube-well for 1-2 minutes, swabbed the tube-well end with alcohol and again discarded the water from tube-well for 1-2 minutes, avoided the contact of hand/fingers at the opening of the bottle or end of the water source at the time of sample collection) in sterilized containers supplied by DPHE Zonal Laboratory, Tongi in ice cool chamber.

Approaches in Data Collection and Database Preparation

1. Household listing commenced after recruiting listing staff.
2. After completion of household listing, households for interviewing respondents were selected. A database of listed households was prepared with detail information. A separate sampling frame with eligible respondents was prepared for each target population using that database.
3. The field staff were recruited and trained for four days.
4. Household survey was completed in ten days.
5. Water samples for Chemical and Bacteriology test were collected during Household survey and sent to DPHE Zonal Laboratory at Tongi through HDRC management with appropriate labeling within 6 hours of collection on a regular basis. The water samples were labeled using Cluster ID, Household ID, and Source ID. The Cluster ID and Household ID were prepared during household listing.
6. Two teams (4 investigators and one supervisor in each team) worked for ten daysto gather qualitative information
7. Data quality was ensured through field supervisors. In addition, core team members made several surprise field visits.
8. Database preparation process (registration, coding, editing, data entry, verification, and cleaning) begun from 4th day of household survey. Database preparation completed after a week of household survey completion.

Chapter-3
BACKGROUND CHARACTERISTICS

3.1 Background Characteristics of the Respondents

3.1.1 Education

A little over one-fourth (26.2%) of the respondents has no education. Some 16.4 percent has received no more than non-formal education. On this backdrop, 12.4 percent are primary passed and 14.7 percent of the respondents reportedly has passed secondary level or higher. Additionally, a little more than one-fourth (27.6%) respondents has studied up to secondary level but not completed or qualified the SSC examination (Annex 1, Table 2).

3.1.2 Marital status

Among the respondents, 92.9 percent is currently married. Marital disorders including divorce and separation as well as widow/widowed is less than 5 percent (Annex 1, Table 3).

3.1.3 Housing characteristics

In addition to high morbidity, poor housing is associated with high mortality and increased household accidents.[2] Study finding shows that a little over half (52%) of the surveyed households is made of brick and cement walled houses with tin on the roof. Another 41.8 percent is entirely made of tin. Rests are makeshift houses of earthen, bamboo chips or polythene walled dwellings with tin or bamboo chips on the roof (Annex 1, Table 4).

3.1.4 Living condition and entertainment

About47.1percent of the respondents is living in their own houses and remaining 53 percent in rented houses. Among the respondents having own houses, 36 percent are living with husband and other family member, 8 percent with husband only and a few living alone. Supporting data to explain why percentage of respondent living without other family member is not available. Regardless of own or rented households, almost all (98.2%) households have connection to electricity. Three-fifth (62.7%) of the households have access to TV and "STAR Jalsha" is the most (84.4%) favorite channel they are likely to enjoy and Indian bangle dramas/serials (85.8%) are the most popular program they watch. Half of the respondents (50.7%) hold mobile phone as well and 15.8 percent of those are smart phone. Reported mobile phones are from 18 different companies; however, most widely used mobile company is Symphony (45.6%), followed by Nokia (16.7%). Wherever the respondents go, (92.1%) they keep mobile with the most of the time. Mobile phones are largely (99.1%) used for talking, and at times for listening music, taking photograph and sending/receiving text message. In response to a query on how the respondents spend time at weekend, greater majority (72%) of them reported that they could not enjoy the weekends because either they could not manage leave on the week end. Others spend the weekends by washing clothes, watching TV, and chatting with friends. Few prefer to sleep on the weekends (Annex 1, Table 5-15)

3.1.5 Monthly household income

[2]Park K (2007). Park's Text Book of Preventive and Social Medicine. 19th Ed., M/S BanarsidasBhanot, Jabalpur

Monthly income includes all income earned by the household members from all types of economic activities. The mean and median income of the surveyed households per month is Taka 18,244 and Taka 15,000 respectively. Average monthly income of 54.3 percent of the households is between Taka 5,000 and 15,000 and it is higher than Taka 15,000 for 44.9 percent of the households (Table 3.1). Further, analysis of current household income by category of different items shows that salary is the main source of income for the most (77.3%) followed by overtime, income from rent out of living house/shop and from small business like grocery shop for 43.0, 20.0 and 17.8 percent of the households respectively(Annex 1, Table 17).

Table 3.1: Percentage distribution of households by average monthly income (in Taka)

Average household income per month (in Taka)	Household in (%)	N
< 5,000	0.9	2
5,000 – 10,000	19.6	44
10001 – 15,000	34.7	78
15001+	44.9	101
N	100.0	225

3.1.6 Monthly household expenditure

Household expenditure includes all food and non-food items. Reported mean and median expenditure of the surveyed household is Taka 17,530 and Taka 14,000 respectively. Average monthly expenditure of 54.7 percent of the households is between Taka 5,000 and 15,000 and it is above 15,000 for 43.6 percent of the households. (Table3.2).Analysis of current expenditure by category of different items reveals that bulk of the expenditure is on food followed by on education, payment of house rent, health, clothes, electricity bill and to pay debt. It is to mention here that 45.3 percent of the respondents sends money to their ancestral at home as well (Annex 1, Table 16).

Table 3.2: Percentage distribution of households by average monthly expenditure (in Taka)

Average household expenditure per month (in Taka)	Household in (%)	N
< 5,000	1.8	4
5,000 – 10,000	21.8	49
10001 – 15,000	32.9	74
15001+	43.6	98
N	100.0	225

3.1.7 Savings

Saving is critical factor to cope with different crisis as well as recognized sign of economic performance. Although number of households just meets the daily need, majority (63.1%) of households is saving a portion of their income in every month (Annex 1, Table 18). As regard to interrogation about information on household savings, nearly all (93.7%) of the respondents has disclosed the matter without hesitation (Annex 1, Table 19). Of the few, either the information is not known to them or not in a position to disclose.

Chapter-4
SITUATION OF WATER FACILITIES

4.1 Introduction

People's health largely depends on adequate supply of safe drinking water. It plays a crucial role in socio-economic development of human population. Despite some advancement has been made in the water supply sub-sector in the country, there still remains more to be done for the entire population in general and the poor people in particular. This chapter is mainly focused on the source of water for key domestic uses, ownership of water source, availability, adequacy and quality of water, household water collector, time taken to bring water for key domestic use, household appraisal of gender and other disadvantaged people in safe water issues, and problem faced in access and collection of water among the residents in the sample areas.

4.2 Situation of Water Supply

According to WHO/UNICEF Joint Monitoring Programme (JMP) for water supply and sanitation, sources of drinking water supply were broadly divided into two categories: '*Improved*' and '*Unimproved*'. Later on 'improved sources of drinking water' were further classified by JMP into '*piped water in dwelling premises*' and '*other improved sources*', thus disaggregated the sources of water into three broad categories – '*piped water in dwelling premises*', '*other improved sources*', and '*unimproved sources*'. By definition, *improved drinking water source is one that, by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter*[3].

4.3 Sources of Drinking Water

Survey findings shows that entire households of the survey area were using improved drinking water facility as per JMP definition. The most pronounced (100%) improved source of drinking water is tube-well. Reportedly unmarked shallow tube-well is the main (95.6%) source of drinking water (Table 4.1).

Table 4.1: Percentage distribution of HHs by main source of drinking water

Main source of water	Percentage
Motorized Deep Tube-well	1.8
Motorized Shallow TW [without marking]	96.0
Others	2.2
N	**225**

4.4 Sources of Water for Other Domestic Need

There is no difference between the sources of water for drinking as well as for cooking, personal washing (bathing and washing clothes) and washing utensils. Reportedly there is no water source other than tube-wells. Due to lack of multiple water sources, all households of the surveyed area use tube-well water for all basic domestic needs including drinking purpose. Details are in Annex 1, Tables 43-45.

4.5 Availability of Water

[3] *Progress on Drinking Water and Sanitation. UNICEF and WHO, 2008*

According to 99.6 percent respondent water is available from their sources all the time of day and night. However 91.1 percent respondents have reported that they can use the water source throughout the year. On the other hand, a little less than one-tenth households (8.9%) of the respondents cannot use the water source round the year. Those who fail to use the water source round the year, according to all (100%) of them; it is due to depletion of ground water by downward displacement of water table. Largely (70.0%) they get water only for 2-3 months from the source. (Annex 1, Tables 21).

Table 4.2: Percentage distribution of households by availability of water from the water facility throughout the year

Availability of water 24 hours a day	99.6
Availability of water round the year	91.1
Yes	91.1
No	8.9
N_1	225
Availability of water by months	
One	15.0
Two	40.0
Three	30.0
Four	10.0
More than 6 months	5.0
N_2	20

N_1 denotes total number of households surveyed
N_2 denotes number households unable to get water from the source throughout the year

Despite large majority (86.2%) of the respondents have easy entry to water source at any point of time. Access to water source is encumbered to 13.8 percents of the respondents. According to them, access is compromised mainly (71%) due to excessive crowd at water source by the users and at times competition for water collection provokes clash among the water users (Annex 1, Tables 36 and 37).

It is quite troublesome for the people of Anandabazar cluster to collect water. The FGD participants of that cluster have informed that as most of them are working women, they remain in rush in the morning to reach their workplace in time. In such hurry, they all need to be in the queue for collection of water and for bathing purpose. Also, the most disappointing thing to them is that they do not get adequate amount of water in the Bangla month of *Chiatra* and *Boishakh* (from mid March to mid May).

The FGD participants have also delineated on the issue of having disabled person in the household and the situation of their collection of water. To the participants from three of the FGD clusters (i.e., Mohishamara, NanduainUttor Para, and Purbo Bahadurpur), collecting water is not a problem for the disabled persons. However, for the participants from Anandabazar cluster, it is problematic for the disabled person to collect water from the existing water sources.

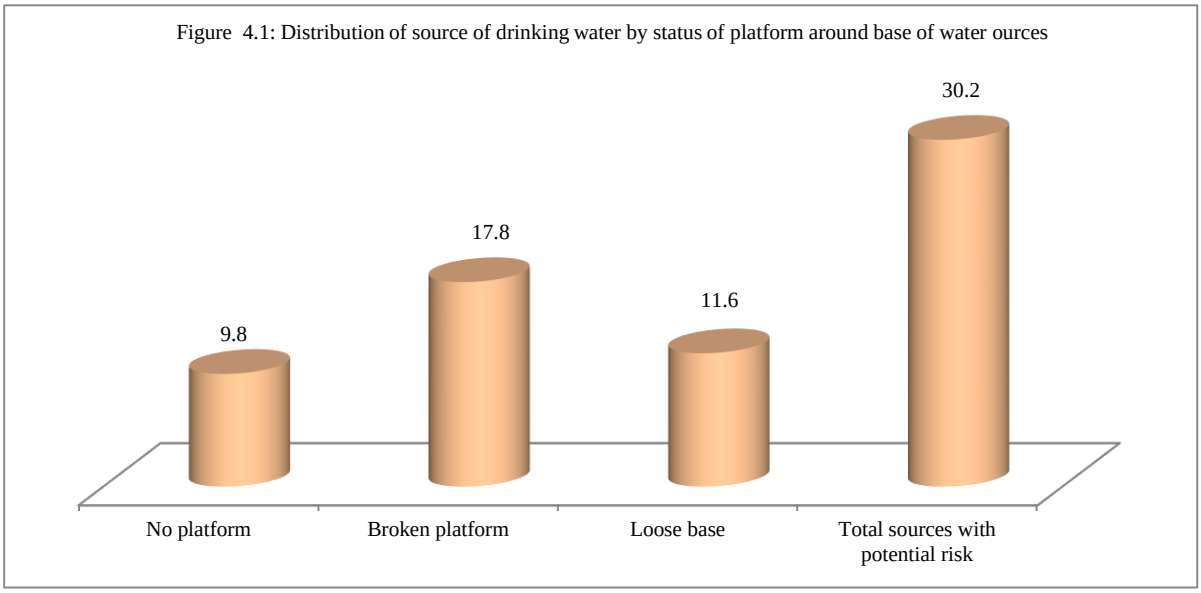
4.6 Availability of Water and Gazipur City Corporation

Chief Executive of GCC as a key informant was asked to state about their activities of providing water in Banglabazar area. As a key informant, he has replied that there is no water supply service from City Corporation in that area. To resolve this problem, the key informant has stated about building an overhead tank in the middle point of the area. If it can be built, it will be beneficial for the local people, and especially for the people in the low income communities. Another key informant (assistant engineer of water supply) from the same office (GCC) has also stated that as a GCC official, he is highly concerned about the demand of water in Banglabazar area. He further states that Banglabazar area is located on high land and water table goes down for few months during dry season. To meet this demand, both of these KIIs have informed that the City Corporation has prepared a master plan to provide water to the people and are undergoing the process of implementing that plan. However, all these need a huge amount of funding as well as cooperation from the government.

4.7 Condition of the Water Source

At the time of interviews with respondents, it has been observed that water source of the surveyed households are exclusively tube-well and base of 22.2 percent of the tube-wells is dirty with soiling substances (such as mud, dust or grime) and likely to trigger the breeding of insect as well as mosquito. Among the observed tube-wells, 9.8 percent has no platform at the base. Surrounding area of 17.8 percent of the platforms has crack/broken and may facilitate pollution of underground water through open crack on the top. A little over one-tenth (11.6 %) tube-wells are loose/week at the base. It indicates that 30.2 of the tube-will are at risk to contaminate source water. Water logging around base of tube-well is observed in 17.2 percent of households. A considerable number of tube-wells are fitted with pipeline for distribution water inside dwelling house as well to neighbour. Similar to base of tube-wells, crack is also observed around the tap of 13.6 percent water points. Water logging is observed in the platform of 13 percent tap and platforms of 11.8 percent tap are either broken or has crack on the top. (Annex 1, Tables 48-55)

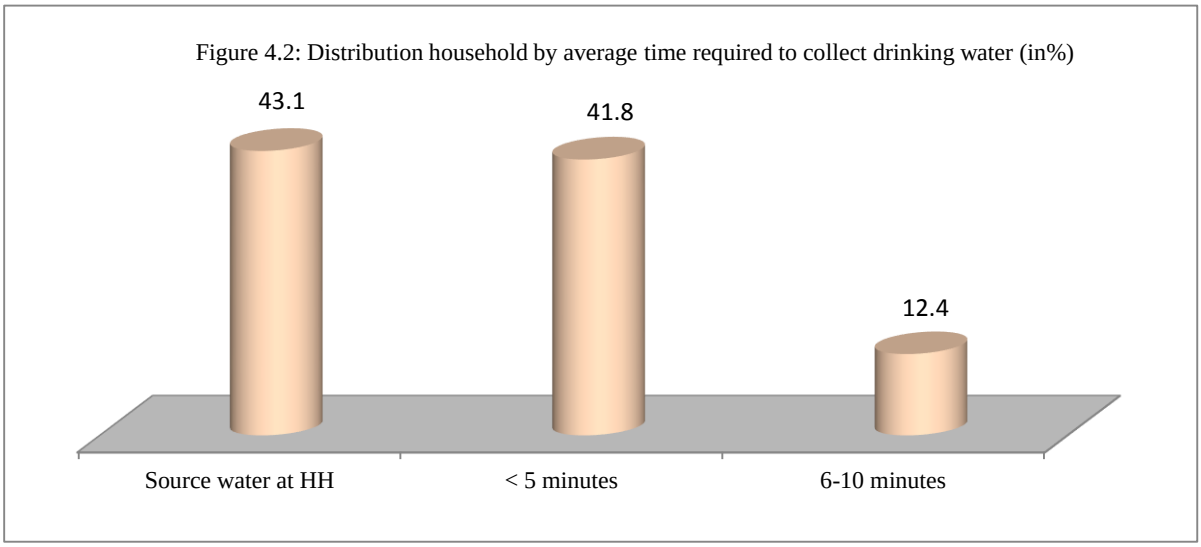
Figure 4.1: Distribution of source of drinking water by status of platform around base of water ources



4.8 Time Spend To Collect Water

The location of water point in 43.1 percent of the households is either inside the dwelling, yard or plot and virtually no time are required to collect water (Annex 1, Table 33). Reportedly, 41.8 percent of the households take less than 5 minutes and another 12.4 percent takes 6-10 minutes to collect water for their daily need. On an average, time taken for water collection to travel, queue to get it and return back to home is 2.6 minutes. According to WAB, time required to collect water should be within 30 minutes that includes going to source and come back home including waiting time and condition of the facility.

Figure 4.2: Distribution household by average time required to collect drinking water (in%)



4.9 Distance of Water Point from Dwelling House

According to WAB, water source should be so located that no user will have to carry water for more than 50 meter (164 feet). Most of the water source in surveyed area is located in close proximity of the households and none of the water source is found to exist beyond 164 feet from the dwelling house. The average distance of the drinking water source from the dwelling house in surveyed area is 10 feet (Annex 1, Table 34).

4.10 Access to Drinking Water

The term access to safe drinking water has been considered as having improved water facility (as per JMP definition) with a intact water-tight concrete platform within a reasonable distance of 164 feet (50 meters) from the household and time to collect (round trip plus waiting time) do not exceed 30 minutes. Taking above definition in account, estimated percentage of household with access or effective coverage to drinking water is 69.8 percent.

Table 4.3: Percentage distribution of households with access or effective coverage to drinking water

	HH having improved water facility	HH having improved water facility with intact water-tight concrete platform	HH having improved water facility with intact water-tight concrete platform within 164 feet from HH	HH having improved water facility with intact water-tight concrete platform within 164 feet from and time taken to collect water do not exceed 30 minutes
%	100	69.8	69.8	69.8
N	125	87	87	87

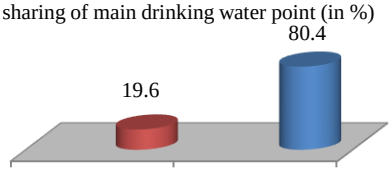
4.11 Adequacy of Water

There are number of definition regarding adequacy of water consumption. WHO and UNICEF in their "Joint Monitoring Programme" define "reasonable access to adequate water" as being availability of at least 20 liters of water per person per day from improved sources. As per survey findings, all (100%) households of the surveyed respondents have access to adequate (≥ 20 liters per person per day) amount of water to meet their different domestic basic need like drinking, cooking and cleaning up, maintaining personal hygiene, and washing clothes (Annex 1, Table 22)

4.12 Ownership of the Water Source

Largely, sources of drinking water are owned by the landlord (53.8%), nonetheless 41.3 percent of the drinking water source is self owned by the respondents. Reportedly, fourth-fifth (80.4%) of the drinking water sources is shared by more than one household and on average one drinking water source is shared by 8 households (Annex 1, Tables 23-25)

Figure 4.3: Distribution of households by sharing of main drinking water point (in %)



4.13 Cost for Water Use and Repair of Water Source

As per survey findings, 99.1 percent of the respondents need not to spend money for water use. According to them, in 19.1 percent household, water source required renovation primarily due to breakage of water pipe and damage of the bucket. Other less reported reasons were burned out of motor, damage of check-bulb or head of the well. The average cost of repairing was Tk. 851.81; however, none of the respondents had to pay money for such repair works. Regardless of own or in rented households maintenance cost water facility is borne by house owners (Annex 1, Table 26-29).

FGD findings in Anandabazar, Mohishamara, NanduainUttor Para, and PurboBahadurpur etc. area of Banglabazar states that these sources are not controlled by any leader or group or by any illegal manner. They do not need to pay any separate money to use the sources of water. If the tube wells are damaged, then the house owner repairs it without taking any charge from the tenants. The participants have also pointed out that if it is required, then other people of the area can also collect water without any restriction.

Information has been extracted from the FGD participants on the issue of management and maintenance of the water sources. Primarily the women of the locality (in Mohishamara, NanduainUttor Para, and PurboBahadurpur) play the key role to look after the water sources. Necessary steps are taken by them starting from observing the tube wells along with the other things to calling the mechanic to repair the sources if damaged. In Anandabazar cluster, if the tube wells are damaged, then the tenants take necessary steps to repair it with the permission of the house owner. House owner adjust the money at the end with house rent of the tenants

4.14 Water Safety Plan

Water safety plan (WSP) is a risk assessment and risk management method of maintaining safe water quality, which considers the entire supply route from source to mouth. According to 83.6 percent respondents, they wash their container with drinking water before collection of water from supply source (tube-well). Almost equal segment (80.9%) of the respondents stores water in a cleaned reservoir and covered with lid at home. In contrast, although 57.8 percent respondents cover the container with lid, remaining two-fifth (42.2%) of the respondents do not cover the container with lid while transporting water from source to home and expose the

hazard of possible contamination. Largely (80.9%), the respondents store ware in a covered and clean container. While storing, majority (64%) the respondents keep water reservoir at home directly on the floor, however, 31.6 percent keeps so on a slightly raised platform/place. On the other hand, in 20 percent households while drinking or serving water from reservoir, users are unknowingly dipped their finger inside the glass and/or of reservoir contains water (Annex 1, Tables 38-42). Thus estimated percentage of households follow the WSP effectively is 7.1 percent (Table 4.5).

Table 4.4: Percentage distribution of the respondents by practicing of WSP

Indicators	Percentage
Always wash container with drinking water before collection of water	83.6
Always cover the container with lid while transporting water to home	42.2
Store water in a covered and clean container	80.9
While storing, container is kept in a slightly raised place	31.6
While drinking or serving stored water, finger not dipped into glass of water	93.4
N	225

Table 4.5: Percentage distribution of households by effective practice of WSP

Sign	Step 1 WSP	Step 2 WSP	Step 3 WSP	Step 4 WSP	Step 5 WSP	Effective practice of WSP
	HH wash container with drinking water before collection of water from source	HH cover the container with lid during transportation from source to home	HH cover the container/ reservoir With lid while storing at home	HH keep the container/ reservoir on little raised /elevated place in the floor at home	HH member do not dip the finger inside the water in a glass or reservoir while drinking or serving	HH drinks water after following all the criteria in step 1-5 of WSP
%	83.6	37.9	32.2	8.8	7.1	
N	225	225	225	225	225	7.1%

4.15 Physical, Chemical and Microbiological Quality of Drinking Water

4.15.1 Perception and status of physical quality

Regarding perception of physical quality of drinking water, most (96.9%) of the respondents has reported that water should be transparent, followed by odorless or should be free from any smell (84.9%) and tasteless (78.7%). (Annex 1, Table 46)

Physical quality of drinking water has also been assessed for acceptability on the basis of respondent's sense and visual observation (e.g., clarity, color, smell, and taste) of water. In most (83%) of the households, quality of the water from the surveyed source is acceptable to the inhabitants. However, the drinking water in 17.3 per cent of the overall sampled households does not meet the requirements acceptable to the respondents. (Table 4.6)

Table 4.6: Percentage distribution of respondents by quality of drinking water [multiple responses]

Quality of drinking water	Percentage
Transparent	90.7
Odorless	8.0
Tasteless	86.2
Foul smelling/Bad odor	82.7
Free from excessive iron	1.3
Arsenic-free	4.4
N	225

Note: Multiple response questions, total percentage may exceed 100.

All of the FGD participants, except those from Anandabazar cluster, have mentioned that they are satisfied with the quality and quantity of water; and to them, the taste of the water is pleasant. From Anandabazar cluster, the participants have claimed that they could feel the presence of iron in water. This is a serious health concern for them, which also creates problem in their daily household chores including washing clothes properly.

Section 4.15.2 and 4.15.3 below, shows the analysis of water quality from 96 households likely to collect drinking water from 11 randomly selected water sources. This may not represent the total household surveyed but will indicate the water quality situation of the surveyed area.

4.15.2 Status of Chemical Quality

Arsenic Level in Drinking Water

According to Bangladesh as well as WAB standard for acceptable level of arsenic content is < 0.05mg/L.

According to Table 4.7 below, it is observed that arsenic level of all the 11 water sources is below the WAB standard level. It indicates that none of 96 households likely to drink water from these 11 sources is exposed to arsenic contaminated water.

Iron Level in Drinking Water

In water, iron concentrations below 0.3 mg/litre are characterized as unnoticeable, whereas levels of 0.3–1 mg/litre were found acceptable (WHO) as well as WAB. Although Iron is an essential trace element, presence of Iron more than 1 mg/litre in drinking water has adverse health in prolonged consumption.

Table 4.7 further demonstrates that, iron level of all 11 water sources is below the recommended level of iron. It indicates that none of 96 households are likely to drink water from these 11 sources is exposed to excess level of iron.

Table 4.7: Percentage distribution of household by level of arsenic and iron in the stored sources of drinking water

Unit of values	WAB standard	Water sources chemically contaminated		Households exposed to contaminated source	
		Number	Percent	Number	Percent
As (mg/L)	<0.001 (mg/L)	11	100	96	100
Fe (mg/L)	<0.3-1.00mg/L	11	100	96	100
N		11		96	

4.15.3 Status Microbiological quality in Drinking Water

Detection TTC

Ideally, drinking water should not contain any microorganism known to be pathogenic. The primary bacterial indicator recommended for this purpose is the coliform group of organism in general and faecal coliform or *Escherichia* coli (*E. coli*) in particular. According to WAB standard, Colony Forming Unit (CFU) of TTC in drinking water is to be less 10 per 100 ml (TTC <10 cfu/100 ml).

Water sample of 11 randomly selected water sources were tested microbiologically. At the time of water sample collection, reportedly 96 households were likely to collect water from these

water sources. The Table 4.8 below demonstrates that out of 11 drinking water sources, water sample of 2 water sources fail to meet WAD standard of total coliform count and thus microbiologically contaminated with coliform group of organism. The Table 4.8 further demonstrates that out of 96 households, users of 2 contaminated water sources accounts 11 (11.5%) households are exposed to microbiologically contaminated drinking water. So, it can be concluded that out of total 96 households likely to collect water from 11 water sources, water quality of 85 households is microbiologically safe to drink water.

Table 4.8: Percentage distribution of household by TC (CFU) in drinking water

Unit of values	WAB standard	Water sources microbiologically contaminated		Households exposed to contaminated source	
		Number	Percent	Number	Percent
TC (CFU)/100ml	< 10 cfu/100ml	2	18.1	11	11.5
	N	11		96	

Besides the water sample from water sources, drinking water samples of stored water also collected from two corresponding households of each of those 11 water sources. Table 4.9 shows that out of 22 households, either one both samples of stored water sample of 5 households are microbiologically contaminated. In indicates that apart from samples of the 2 contaminated sources, stored water sample of another 3 households are also contaminated who are likely to collect water from microbiologically safe sources. It otherwise says that contamination of drinking water is higher at household level than the water at source. The finding is consistent with low practice water safety plan described in section 4.14.

Table 4.9: Percentage distribution of householdsby microbiological quality TC (< 10CFU/ 100 ml) of stored drinking water

Unit of values	WAB standard	Stored drinking water of HH microbiologically contaminated	
		Number of HH	Percent
TC (CFU)/100ml	<10 cfu/100ml	5	22.7
	N	22	

4.16 Collection of Water and Household Treatment of Drinking Water

Traditionally, women and adolescent girls are resposible for collection of household water in Bangladesh. The study findings also demonstrate that adult women are the sole (98.7%) responsible for water collection in almost all the households in the surveyed area of Banglbazar (Annex1, Table 35). Most (96.9%) of the household members of surveyed respondents do not treat water before consumption. Of the few, straining/filtering by cloth, boiling, sedimentation and use of filter are the reported common practices of treating water before consumption (Annex 1, Tables 31 and 32).

Chapter-5

SITUATION OF SANITATION FACILITIES

5.1 Introduction

Human excreta are a source of environmental pollution as well as of infection. In many areas of the world, including Bangladesh, excreta disposal is a problem of grave importance. The health hazards of indiscriminate disposal of excreta are (i) soil pollution, (ii) water pollution, (iii) contamination of food and (iv) propagation of flies. This chapter is primarily dealt with situation of sanitation facilities, sharing of latrine, ownership of latrine, distance of from the dwelling house, privacy and security of latrine use, cost sharing, household appraisal of gender and other disadvantaged people, problem faced in access, and cleanliness of latrine.

5.2 Type of Latrine Used

The most common type of latrine in the surveyed area is flush latrine with water seal connected to pit with slab (41.3%), followed by flush latrine with water seal connected to septic tank (16.9%) and pit latrine with slab but no water seal (14.2%). Other less pronounced latrines are flush latrine drains to unknown place, flush latrine drains to drain/ditch, pit latrine with slab and lid.

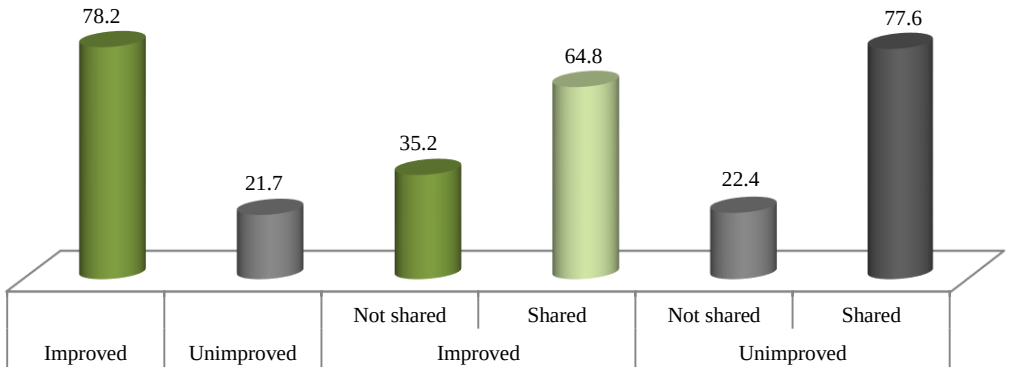
Table 5.1: Percentage distribution of households by access to type of latrine

Types of latrine	Percentage
Improved latrine	
Flush latrine with water seal drains to pit with slab	41.3
Flush latrine with water seal drains to septic tank	16.9
Flush latrine without water seal drains to pit with slab	14.2
Flush latrine drains to pit with lid	4.9
Ventilated improved pit (VIP) latrine	0.9
Unimproved latrine	
Flush latrine drains to unknown place	8.4
Flush latrine drains to ditch/drain	10.7
Pit latrine without slab (open pit)	0.4
Pit latrine with broken/cracked pit	2.7
Pit latrine with broken slab	2.3
N	225

5.3 Status of Sanitation Facility

As per surveyed data, 78.2 percent households of the respondents use improved latrine and rest 21.7 percent use unimproved latrine. Of the improved latrines, 35.2 percent latrines are used by single household and not shared with others and rests (64.8%) are shared with two or more households. On the other hand, 22.4 percent latrines are shared with two or more households. Regarding unimproved latrines, 21.7 percent of latrines are used by single household and remaining 77.6 percent unimproved latrines are shared with two or more households. Among the improved latrines, flush latrine drains to pit latrine is most common variety, followed by flush latrine drains to septic tank. To other end, unimproved latrines are largely flushes to open drain/ditch or unknown places (Figure 5.1).

Figure 5.1: Distribution of by access to sanitation facilities (in %)



5.4 Sharing of Latrine

In general, sanitation services in Banglbazarare not adequate given the number of residents. On average, over two-third (67.6%) of the households use shared latrine (Annex 1, Tables 58). As regard to sharing latrine, Table 5.2 below shows that a little over half (55.3%) of the households share latrine with 5 or more households. Over one-thirds (36.8%) households use latrine share with 3-5 households. A few use latrines being shared 2 households. One-tenth (9.8%) of the respondents has reported the presence of latrine exclusively for the use of females in the community and is shared by 17females on average (Annex 1, Tables 60 and 61)

Table 5.2: Percentage distribution of HHs by number HHs share the latrine

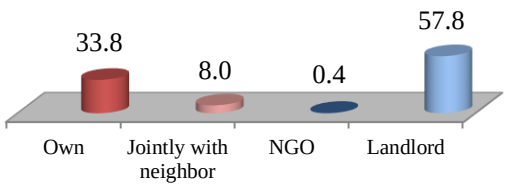
Number of HHs share the latrine(s)	Percentage
Shared with 2 HHs	7.9
Shared with 3-5 HHs	36.8
Shared with 5 or more HHs	55.3
N	**152**

According to FGDs participants in Anandabazar, Mohishamara, NanduainUttor Para, and Purbo Bahadurpur etc., sharing of latrines is different from one cluster to another. The participants from Mohishamara cluster have stated that on an average, 4 people use one latrine over there, while all the participants from Purbo Bahadurpur informed that they all mutually use the latrine of their homeowner. Few of the participants from Nanduain Uttor Para use their own latrines, whereas according to the participants from Anandabazar cluster, one latrine is used by a high number of 18 people.

5.5 Ownership of Latrine

Most of the latrines are belonged to landlord (57.8%). Nearly one-third (33.8%) of the latrines are self owned by the respondents and another 8 percent of them has joint ownership with neighbor (Annex 1, Table 62).

Figure 5.2: Distribution of HHs by ownership of the latrine (in %)



5.6 Cost for Use and Maintenance of Latrine

Majority (88%) of latrines of the surveyed households need not require any repair/ maintenance work during last one year. On the other hand, in 12 percent households, the pit/ tank of the latrines were mostly (81.5%) filled up by faecal matter and in few (18.5%) latrines draining pipe got blocked and had to call for repair and maintenance work. Reported average cost for maintenance of latrines was Tk.1172.73. Among the households where the latrines required maintenance works, 59.33 percent were rental (16 HHs) and the tenants need not to share the maintenance cost of the latrine. Maintenance costs are bear by the owner of the households belongs to 40.7 percent households. (Annex 1, Table 63- 64).

Table 5.3: Percentage distribution of households of the respondents by cost of maintenance of latrine and sharing of maintenance cost

Status payment		Percentage
Did not pay for repairing	16	59.3
Paid for repairing	11	40.7
Tk. < 500	1	3.7
Tk. 500-1000	8	29.6
Tk. 1001-2000	1	3.7
Tk. 4001-5000	1	3.7
Average amount of repairing cost	11	1172.73
Total	27	100.0

FGD participants Anandabazar, Mohishamara, NanduainUttor Para, and Purbo Bahadurpur also stated that they do not need to pay any extra amount other than the house rent for using the latrines; and if it is damaged, then in most instances, the house owners bear the responsibility to repair those. However, in most cases the women of those areas (i.e., etc.) play a major role in management and maintenance of the latrines. They take necessary steps if the latrines are damaged, and clean the latrines by themselves by rotation per week. There is neither any group and/or committee to control the management and maintenance works of the latrines, nor are the women member of any group or community to maintain such works.

5.7 Year Round Access to Latrine

Nearly fifteen (14.7%) percent of the household could not use the latrine constantly throughout the year or use with difficulty. The major (93.9%) cause for failure to use latrine is water logging during rainy season (Table 5.4).

Table 5.4: Percentage distribution of households by duration of inability to use latrine

Status of using latrine	Percentage
Households unable to use latrine round the year	14.7
N_1	225
Cannot use latrine always or use with difficulty	12.1
Cannot use latrine in rainy season	93.9
N_2	33

N1 denotes total households surveyed
N2 denotes households unable to use latrine round the year

Apart from seasonal variation, nearly one-third (32.9%) of the respondents experience some problems in using the latrine properly. The most pronounced problem is dirty/filthy condition of the latrine (62.2%), followed by foul smell (59.5%) and broken door of the latrine(56.8%), hurry to complete acts (24.3%), compete with males in a queue (20.3%), and security problem especially at night (13.5%) to be noted, (Table 5.5).

Table 5.5: Percentage distribution of respondents by status of having problem in using latrine and type of problems

Status of problem	Percentage
Yes	32.9
No	57.1
N_1	225
Type of problems	
Dirty/filthy	62.2
Foul smelling	59.5
Broken door/pinhole in the door	56.8
Filled quickly	4.1
Security problem (for women due to no bulb at knight)	13.5
Mostly occupied by the mails	5.4
Need to be in hurry to complete acts	24.3
Women have to compete with men in a queue	20.3
N_2	74

N1*denotes total households surveyed*N2*denotes households face problems in using latrine*

Other notable barriers for using latrines are getting little time to complete task, male and female need to stand in queue together for use of latrine which is an embarrassing situation to the women and due to location of latrine away from household, often darkness inside the latrine at night, damaged with tiny hole in the door compromise the security and privacy of the female in using the latrine. Except in rare instance, latrine is used by disabled person. The latrines are not suitable for the use of disabled as there is a fear of falling down and wheel chair cannot be taken inside (Annex 1, Tables 66 and 67).

Responses on using the latrines have got a mixed depiction by the FGD participants. Few of them have stated that they face no problem in using the latrines, while majority of them have stated the opposite. For example: standing in the long queue in the morning, blocking of commodes with human feces, cleaning the latrines before using those, being in hurry while in the latrines, and men-women using the same latrines are some of the major problems they face. All these have become serious health concerns as well as privacy for the local people. To avoid such problems, the FGD participants have suggested constructing one sanitary latrine for each of the households.

FGD findings in four cluster/slums in Banglabazar area (i.e., Anandabazar, Mohishamara, Nanduain Uttor Para, and Purbo Bahadurpur etc.) have revealed that access to latrines is an issue that is integral to their lives. In Mohishamara cluster, usually people face problems in accessing the latrines, a major part of which is related to their concerns of privacy. As the doors are broken, there exist holes in the door that makes their life miserable while they go to use the latrines. Moreover, the latrines and the adjoined places are always covered with bad odors. These same responses have also been found from the participants of Purbo Bahadurpur and Nanduain Uttor Para. Moreover, the participants from Anandabazar cluster have added that they do not feel comfortable while they use the latrines. One of the reasons behind such discomforts is that there are no separate latrines for the men and women in that place.

When one of the KIIs (Chief Executive of GCC) was asked to state about the issue of access to latrine in Banglabazar area by the local people, he has informed that most of the local people had to construct their latrine by their own cost. Construction of latrine is expensive and majority cannot afford that. Therefore, in order get access to latrines, peoples' demand for installation latrine free of cost is quite high. As a solution, the City Corporation has made a plan to construct

latrines for the local people, and especially for the slum people and low income communities. As most of the places of that area are *khas* lands or public lands, so it will require a pretty lengthy procedure to implement the plan.

5.8 Cleanliness of Latrine

Regarding cleanliness, latrines are found clean[4]in 36 percent households and moderately to almost clean in another 17.8 percent households. Rests are either dirty, smelly and soiled with visible faecal matter in and around the pan (Table 5.6).

Table 5.6: Percentage distribution of HHs by status of cleanliness of latrine

Cleanliness of the latrine	Percentage
Clean	36.0
In general clean	17.8
Existence of faecal matter around the slab	14.7
Existence of faecal matter on the pan	12.4
Exit hole of the pan logged with stool	11.1
Bad oudour	8.0
N	**225**

Note: Multiple response question, total percentage may exceed 100.

5.9 Distance of Latrine from Household: Safety and security

Most (64%) of the latrines are in very close proximity of the households. The average distance of the latrine from the dwelling house is 11.8 feet. The Table 56 in Annex 1, shows that none of the latrine in surveyed households is more than 100 feet away from the dwelling house. Although the location latrines are not far away from the dwelling house, one-fifth (20.9%) of the respondents however feel insecure to use the latrine at night due to its location outside of household premises as well as unexplained sense of fear (Annex 1, Table 57).

5.10 Access to Improved Sanitation

Considering the improved type of sanitation facility, reasonable distance and year round access of the households to latrine, access to improved sanitation has been estimated as 66.2 percent households.

Table 5.7: Percentage of households by access to improved sanitation

Status of latrine	Percentage
Improved	66.7
Unimproved	33.8
N	225

[4] Clean denotes latrines/urinals are devoid of visible excreta/urine splashes in pan/on floor/walls as well as no visible garbage/refuge/and no insects of files and the subjective variations of stated condition are termed as moderate to almost clean.

Chapter-6
SITUATION OF HYGINE: KNOWLEDGE AND PRACTICE

6.1 Hand-Washing Place

As per survey findings, 87.1 percent households of the respondents has hand-washing place with water at or near (within 10 steps) the latrine and it is 80 percent in case hand-washing place near to kitchen. Of the hand-washing places near the latrine, soap and water is found in 57.7 percent of cases. However, percentage of hand-washing places near to kitchen has soap and water could not be calculated as the specific question to address this issue is somehow overlooked in the questionnaire. In response to a query why soap is not available at the place of hand-washing place, 91.6 percent of them have reported that soap is kept inside the room as hand-washing place at or near the latrine is shared with multiple households. (Annex 1, Table 72).

Table 6.1: Percentage distribution of households by hand-washing place

Indicator	Percentage	N
HH with Hand washing place with water at or near the latrine	87.1	225
Hand-washing place with soap and water near to latrine	57.7	196
HH with Hand washing place with water at or near the kitchen	80.0	225

6.2 Hand-Washing Practice after Use of Latrine

The data displayed in Table 6.2 demonstrate that 89.9 percent of the respondents wash their hands with soap and water after use of latrine. Further analysis however discloses that merely 29.8 percent of the respondents wash both hands with soap water after use of latrine. A few of the respondents wash hand with ash and water. Nonetheless, 2.2 percent of respondents do not wash their hand and 2.7 percent wash hand with water only after use of latrine. It could be a misinterpretation of question and response of hand-washing is probably after using of latrine for voiding urine not for defaecation.

Table 6.2: Percentage distribution of respondents by washing-hands practices after defaecation

Hand-washing practice after daefecation	
Do not wash hand	2.2
Wash hands with water only	2.7
Wash hands with mud and water	0.9
Wash hands with ash and water	4.0
Wash one hand with soap and water	60.0
Wash two hands with soap and water	29.8
N	225

6.3 Self Reported Knowledge and Practice of Hand-Washing at Critical Times

As regard to self reported knowledge of the respondents on hand-washing at critical times, categorically, it is highest (98.7%)at the time 'after using latrine', followed by 'before taking food' (87.6%).On the other hand, knowledge on hand-washing 'before preparation/cooking of food' and 'after cleaning baby's bottom' is less reported and accounted 48.9 and 30.2 percent respectively (Table 6.3).

On the other hand, regarding hand-washing practice at critical times, reportedly, 96.9 percent respondents wash hand after use of latrine and 69.8 percent do so before taking food. Other less reported practices of hand-washing are 'before preparation of food' (37.8%) and after 'cleaning baby's bottom' (12.4%) as shown in Table 6.3. Irrespective of magnitude of the knowledge and practices, the Table 00 below however shows that except hand-washing after defaecation, difference between the knowledge and practice of the respondents in other indicstors hand-washing at the critical times is statistically significant at 5% level of confidence interval (CI).

Table 6.3: Proportion test for knowledge and practice on hand-washing at critical times

Indicators	Knowledge	Practice	P-value[5]
Before eating food	87.7	69.8	0.000
Before preparation/cooking food	48.9	37.8	0.018
After defaecation	98.7	96.9	0.193
After cleaning baby's bottom	30.2	12.4	0.000
Before and after feeding baby	15.6	4.0	0.000
Before serving food	11.6	0.9	0.000
N	225	225	

Response may report multiple knowledge and practice, sum of total percentage may exceed 100.

It is worth enough to note that all respondents use slipper while they use latrine (Annex 1, Table 65)

6.4 Disposal of Child Faeces

A total of 444 caregivers were interrogated about their practice on disposal of child faeces at the time household listing. Among them, 46.2 percent of caregivers have reported that under-five children of their households use latrine for daefecation. Among the other households, 31.8 percent of households dispose of child faeces to latrine. Thus, reported household likely to dispose of child faeces safely is the sum of children use latrine together with faeces throw into latrine is equal to 78 percent. Reported unsafe practice to the regard is throwing of facecal matter around the courtyard indiscriminately by 9 percent of households. In another 8.8 percent households where children pass stool in bed or clothes are usually washed with water at the water point nearby (Table 6.4).

Table 6.4: Percentage distribution of HHs by place of disposal of child faeces

Place of disposal of child faeces	Percentage
Child use latrine	46.2
Into latrine	31.8
Drain/dustbin	2.9
Wash in pond/canal/ river	0.2
Around house/courtyard randomly	9.0
Wash with tap/tube-well water	8.8
Stay here and there	0.5
In a specific pit/hole	0.7
N (applicable)	444

[5] P-value < 0.05 is considered significant at 5% CI

6.5 Awareness about Materials is Likely Use to Protect Menstrual Flow

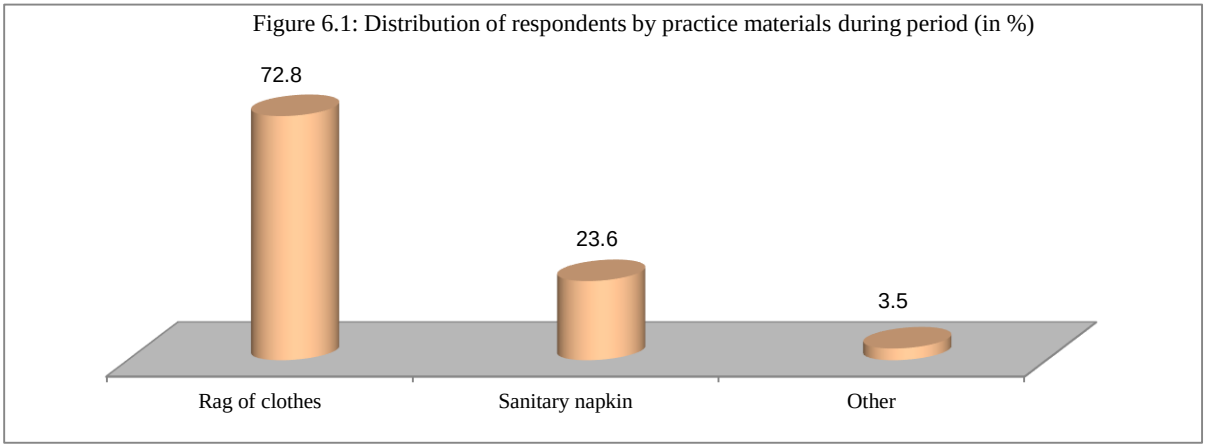
Menstruation, though a natural process, has often been dealt with secrecy in most parts of Bangladesh. The survey data demonstrates that all the respondents are aware about the materials generally used for protection of menstrual flow. The most familiar material known to the respondents is rag made of piece of cloth (57.8%), followed by sanitary pad/napkin (26.7%).Other less reported measures are cotton, tissue paper and panty (Annex 1, Table 75).

The FGD findings from the clusters of Anandabazar, Mohishamara, Nanduain Uttor Para, and Purbo Bahadurpur etc. of Banglabazar area have revealed that all the participants aware about the materials that are likely to use as the absorbent during period.

6.6 Practice of Menstrual Management

Regarding practices, most (72.8%) of the respondents use re-usable rag during their menstrual period. On the other hand, sanitary napkin/pad is used by 23.6 percent of the respondents (Annex 1, Table 76).

Figure 6.1: Distribution of respondents by practice materials during period (in %)



The FGD findings from the clusters of Anandabazar, Mohishamara, NanduainUttor Para, and PurboBahadurpur etc. of Banglabazar area have also stated that most of them have stated about using pieces of clothes (often older ones), whereas very few of them have informed about using cotton, tissue papers, and sanitary napkins.

6.7 Washing, Drying and Storing of Reusable Absorbent Material

Among the rag users, majority (79.9%) of them wash the rag with soap and water before the next use. However, 18.8 percent of respondents uses antiseptic in addition to soap and water at the time of washing the rag.

Table 6.5: Percentage distribution of the respondents by practice of cleaning material in case of reuse of rag [cloth] as absorbent material during the period

Cleaning material	Percentage
Only water	1.4
Soap and water	79.9
Soap, antiseptic (dettol, savlon) and water	18.8
N [applicable]	**144**

A diversity of response has been noticed in a query about the place of drying washed rag. Given the general tendency of the respondents to hide the rag from others' view, largely they dry the washed rag in a hidden place inside the room (36.8%) or in a concealed place (26.4%) to keep the rag out of sight from others. Encouragingly, 42.9 percent of the respondents dry their washed rag under the Sun but usually place the rag beneath a cloth to hide from others' view.

Table 6.6: Percentage distribution of the respondents by place of drying washed rag [cloth] after cleaning during the period

Place of drying	Percentage
Under shadow in room	36.8
Under sun	3.5
Under sun but beneath a cloth	38.9
In a hidden place	26.4
No response	2.1
N [applicable]	**144**

Note: Multiple response questions, total percentage may exceed 100

Largely (61.1%), they store the dried rag inside the box/trunk before re-use (Table 6.5 & 6.6).

Table 6.7: Percentage distribution of the respondents by place of storage of washed rag [cloth] before reuse

Place of drying	Percentage
Thrown away	4.2
Under the mattress	9.7
Inside box/trunk/bag	61.1
Almirah	6.9
In a hidden place	15.3
No response	2.8
N [applicable]	**144**

From the FGDs (in Anandabazar, Mohishamara, NanduainUttor Para, and Purbo Bahadurpur etc. of Banglabazar area), those women who have stated about using pieces of clothes have added that, such clothes should be dried keeping aside in a safer place (often under other clothes) so that no one can see it. Very few of them have stated about drying such clothes under the direct sun light. Of the women who have knowledge about using cottons and/or sanitary pads, have delineated that these things should be buried under ground after usage. Hence, it can be well assumed that mode of practices regarding menstrual absorbent face a high level of stigmatization in those areas.

6.8 Disposal of Sanitary Pad/Napkin

Most of the users (41.1%) of sanitary pad/napkin or cotton or tissue paper are likely to dispose of either into drain/ditch (23.5%) or into waste basket (17.6%). Those who dispose the sanitary pad into basket ultimately dump the pad along with household waste in the local ditch/marshy One-third (31.4%) of the users disposes of the sanitary pad and/or other disposable materials into pit and 13.7 percent put those under the ground. Nonetheless, some 13.7 percent respondents prefer to dispose of the napkins into latrine which may cause the latrine to clog (Table 6.8).

Table 6.8: Percentage distribution of the respondents by place of disposal of absorbent material during the period

Place of disposal	Percentage
Dispose in to waste basket/bin	17.6
Dispose in drain/ditch	23.5
Dispose in to toilet	13.7
Buried under soil	13.7
Dispose in into pit/hole	31.3
N	**51**

Among the respondents, 51.1 percent are working women and reportedly 14.8 percent has no place for disposal of sanitary pad at their work place (Annex 1, Table 83). During menstruation, majority of them use rag. Among the napkin users, either they throw the napkin in the basket, bush/drain or taken it home after wrapping with paper and then dispose that with household garbage (Annex 1, Table 85).

6.9 Personal Cleaning and Changing

It is reported that none of the respondents experience problem to keep them clean during menstruation. Washing/cleaning of external genitals is a common (93.8%) practice among the respondents of reproductive age during the menstrual period. Reported average frequency of washing/cleaning of genitals is 3.1 times per day. Nevertheless, one-fifth (21.1%) the respondents wash the genital twice or less per day is not hygienically sound (Annex 1, Tables 80 and 81).

On an average, 58.7 percent of the respondents changes the absorbent material twice or less per day, which is not a appropriate approach for personal cleanliness. Some 28.3 percent however, changes the absorbent more than twice daily[6]. According to a few (13%), change of absorbent per day depends on the amount of flow during menstruation (Annex 1, Table 79). Annex 1, Table 86, shows that majority (55.7%) of working women change their absorbent material once at workplace during menstruation.

The women participants of the FGDs (in Anandabazar, Mohishamara, NanduainUttor Para, and PurboBahadurpur etc. of Banglabazar area) have delineated about barriers in management of menstrual hygiene. Almost all of them have stated that there is no such environment for them while they are in their menstruation. They need to go to the latrines, or remain inside their own rooms to do the changing of their piece of clothes, cottons, and/or sanitary pads etc. Therefore, they lack a safe environment to maintain a healthy life regarding their menstrual hygiene

6.10 Status of Waste Disposal

In case of **solid waste** disposal, widely held practice of surveyed households is to dump the waste including garbage in the local ditch/marshy land (60.9%). A little less than another one-fourth (18.6%) households throw the waste either in nearby drain/canal, open field or randomly around the courtyard/household. Some 15.1 percent of the households dispose of the solid household waste in specific place and in 4.9 households, wastes are removed by locally paid carrier (Annex 1, Table 73).

[6]Sanitary pads are designed to absorb liquid and users feel dry and comfortable longer time against the rag -relatively less capacity to absorb liquid and become soaked with menstrual flow at short interval. So technically one can wear a pad as long as it does not overflow or stain but it will also not be very hygienic or comfortable to use for long time. Use of pad for long time may absorb the vaginal moisture and cause irritation and discomfort. In reality frequency of changing rag and regular pad depends on how heavy flow is. The safest is to change every 3-4 hours for regular pad and rags. Extra absorbency pad can be used for overnight protection.

According to the key informant (Ward Councilor) from the Ward Councilor's office in Banglabazar, all the works of Ward council are for the service of humanity. The Ward councilor is responsible for all types of developmental works in that area. Such development works are aimed to construct roads/pathways and disposal of wastes etc. While doing works for disposal of solid wastes, sometimes the Ward councilor had faced problems most of which was related to funding. Then he had sent letters to the city corporation several times seeking the solution of the problems. However, later the councilor had to carry on the works through channeling the fund from the councilor's office.

In addition to this, the KII of GCC has also added that there are only four vans to manage the solid wastes in Banglabazar area which is literally inadequate compared to the demand. So people of that area have taken steps to remove the wastes by their own way. Some of them burn their wastes; some of them bury the wastes under soil while some others throw the wastes indiscriminately here and there. Thus, the environment has become polluted and diseases are spread out. He has further stated that –

> "*It is essential to provide dustbins, recruit people for carrying the waste, increase number of vans and other logistic support to ensure a well managed waste disposal system.*"

Liquid waste is usually drained out indiscriminately to surrounding land and canal/marshy land (83.6%). Few (13.8%) drains the household liquid waste to a nearby pit (Annex 1, Table 74).

In interview with ward councilor and GCC officials, most of them have stated that GCC has no plan in place at present for construction of water point and latrine as well as to dispose of or process the huge household waste generated in Banglabazar each day. According to a concerned GCC official, there are only four waste removal carriers at present with GCC and not sufficient to cover the entire areas of their jurisdiction.

Key informants are also stated that considerable part of Banglabazar is located on government land and under the forest department in particular. Any development work and establishing legal connections for service utilities is difficult as tenants lack legal status to reside on the land.

On the query regarding the system of disposal of liquid waste, one of the KIIs (a concerned official of GCC) has stated that there is no proper system of such category existed in Banglabazar area. Liquid wastes including the rain water gets logged inside the courtyards of many households. Even the outside areas are also floated with water. The roads get blocked with thick mud. All these make the life of the general people miserable. And even the business activities of many industries get barred because of the failure in transporting their productions. These happen because of the absence of proper drainage system in that area. Government initiatives are required to improve such situation starting from mass awareness to construction of a proper drainage system in Banglabazar. Allocating a handsome budget is also an integral part of development of surrounding environment.

Additionally, Chief Executive of GCC has stated that there is no proper sewerage system in Banglabazar. As a matter of fact, the City Corporation has been engaged with construction of roads in the area. Hence, concentration was not given on building sewerage lines. Local people usually by pass their wastes here and there (e.g., ponds, ditches etc.). Therefore, proper sewerage system is highly needed in that area and initiatives should come both from the government and the NGOs.

6.11 Capacity of LGI/WASH Service Providers and Duty Barriers

GCC plays the major roles for WASH serves in its areas including Banglabazar. Discussion with several key players for WASH services of GCC gives an impression that improper solid waste management, insufficient water supply and coverage, water logging due to lack or absence proper drainage system, land crisis for dumping solid waste, inadequate fund are the key challenges of this City Corporation at present. Apart from these, there is a shortage of manpower, different type vehicles, equipment, technical and financial support for delivery of appropriate WASH services. However, this year, GCC has proposed Taka 1,00.00 lakh for 100% Sanitation Programme in its annual budget for Year of 2016-2017. Under this background, however, GCC has taken a project for water supply, water treatment plant, drainage and road network with the financial and technical assistance from JICA. According to them, solid waste management plant will also start soon. But this will be implemented in Tongi and Gazipur proper only. In response to a question, how long it takes to start WASH services delivery in Banglabazar, most of the key informants stated that at present GCC could not deliver WASH services properly even in Gazipur proper and Tongi. Therefore, GCC is not in a capacity to extend his WASH services to a new area other than Tongi and Gazipur proper. According to them it will take time to initiate WASH services in Banglabazar.

6.12 Role of Forest Department Environmental Development in Banglabazar Area

Nearly half of the Banglabazar area is situated over the land of forest department. Queries were made to one of the KIIs, who was the Officer in the Forest Department in Gazipur region, to shed light on their role in the development of Banglabazar area. In response to this, the KII has informed that some parts of forest area are located in Ward 22 (Banglabazar area). The main duty of the Forest Department is to protect the resources of the forest. In addition, they also aware people to protect the forest and its resources.

However, the Forest Department has an inimical relationship with the City Corporation. It is because; there exist a system to take permission of the Forest Department for any development works, and especially before the construction of any road through the forest or entering the forest. But it is not followed by the GCC. To develop the overall environment of Banglabazar area, the KII (Officer in Forest Department) has stated about taking the measure of ‘tree plantation’. In addition, steps should also be taken to fix a place where garbage or solid wastes can be disposed of.

According to the KII (Officer in Forest Department), a NGO (*Jonoshastho*) has been contributing to improve the environment of the area. As the Forest Department has no separate budget for such activities, the KII has suggested that both government and NGOs should come forward to play an efficient role in such works.

Chapter-7

SITUATION OF WASH in SCHOOLS

7.1 Introduction

The usages of water are many, and qualities and quantities of water required are varied in various contexts. This chapter describes the current situation of water sources, availability and adequacy of water, quality of drinking water, distance of water sources from the possible sources of contamination- all related to water supply in schools. A total of 15 schools were observed for WASH condition. Out of 15, 4 are primary schools and rests are mix of junior secondary and secondary schools and termed as junior to secondary school. Summary findings of school observations are given below in a tabular form.

Table 7.1: Distribution of schools by observation of individual and overall key WASH situation

Name of the school	Own source of water facility	Own latrine in school	Number of latrine	Gender sensitive latrine	Hand-washing place			Hand-washing place with soap and water
					Inside latrine	Soap	Outside latrine	
Wahab Ideal Public School		✓	4	✓			✓	
Shrishty Laboratory School		✓	3	✓	✓		✓	
Abed Ali Bepari Girls Dakhil madrassa	✓	✓	1					
Gazariapara Hamidia Dakhil Madarassa	✓	✓	4	✓	✓		✓	
Purbo Bahadurpur Darul Ulum Quami Madrassa	✓	✓	1		✓	✓	✓	
Holy Child Pre-Cadet School		✓	2	✓	✓	✓	✓	✓
Bahadurpur Model Academi	✓	✓	4	✓	✓	✓	✓	
Gazariapara Model Academi	✓	✓	1		✓		✓	
ATM Anowar Model Academi	✓	✓	1		✓	✓	✓	✓
Sarker Mujibar Rahman Adarsha Biddyalaya		✓	1		✓	✓		
Pashchim Bahadur Govt. Primary School	✓	✓	2		✓		✓	
Nanduain Govt. Primary School	✓	✓	4	✓	✓	✓	✓	✓
Purba Bahadur Govt. Primary School	✓	✓	4		✓		✓	
Banglabazar Uttaran Academy		✓	2				✓	
Banglabazar Shishu Kishore Academy								
Overall (in %)	60.0	93.3		40.0	73.3	40.0	80.0	20.0
Average			2.3					

7.2 Source of Water Supply

Of the surveyed schools, physically 60.0 percent of them hasown functional source of water within the school premises/courtyard (Table 7.1). Except in one, however, all other 40 percent schools have alternate arrangement of water supply at school courtyard from the neighbouring households. In a school where water source and latrine are not found in school courtyard, students are usually use the water source of Head Master, who is also the owner of the school and resides beside the school. Regarding use of latrine, students usually go to neighborhood households or latrine of a mosque located beside the school in urgency.

Table 7.2: Percentage distribution of school by availability of own sources of drinking water

Availability of source of drinking water	Primary school	Junior to secondary school	All
Yes	100.0	45.5	60.0
No		54.5	40.0
N	4	11	15

7.2.1 Type of water facility

Regardless of own or neighbourhood (alternate) source, basically two types of water sources are used in the schools, namely motorized Shallow Tube-Well (STW) and Deep Tube-Well (DTW). Both of these are improved in category as per JMP definition. STW is the most common drinking water source and reportedly used in 86.7 percent of schools (Table 7.3).

Table 7.3: Percentage distribution of school by type of source of drinking water

Sources of drinking water	Primary school	Junior to secondary school	All
		9.1	6.7
Motorized Shallow Tube Well (STW)	100.0	81.8	86.7
Not having source		9.1	6.7
N	4	11	15

As regard to gender sensitivity, use of drinking water sources or water points are largely not separated by sex in the schools. Out of 15, use of separate water source/point for the boys and girls is found in 2 (13.3%) schools, one in primary and other one junior to secondary schools. Further analysis shows that on an average ratio of students per water point is 1:58 which well below the national standard of one water point per 100 students (Annex 1, Table 91). Reportedly, water source of all the schools are user-friendly and safe to use. (Annex 1, Table 95)

7.2.2 Status of platform and cleanliness around the water source

According to Table 7.4, Among the surveyed 15 schools, 9 schools having their own water source and are exclusively motorized tube-well. Out of 9, water sources in 6 (66.7%) schools have water-tight concrete platform at the base. Across the type of surveyed schools, all the primary schools have platform around the base of water source. On the other hand, in 3 junior to secondary schools, no platform was found at the base of water source. Of the 6 schools having platform around the base of water source, one platform in a primary schools was found broken. Again, of the 9 schools having own water sources, water logging on and around the platform was noted in 2 schools. Nonetheless, irrespective of own or neighbourhood source, cleanliness around the place of water points is not well maintained. Two-fifth (44.4%) of the places around the water points was dirty. Water points of two-third (71.4%) of all the surveyed schools or all the schools having own water source have drainage system to carry of spilled water to a distant place from the source. A four-fifth (80%) of the drains are brick and cement made (Pucca) and flows to a soakage pit or drain/ditch (Annex 1, Table 98-102).

Table 7.4: Percentage distribution of school by status of having platform if the source of water is tube well

Status of having platform	Primary school	Junior to secondary school	All
Yes	100.0	40.0	66.7
No		60.0	33.3
N	4	5	9

7.2.3 Access to drinking water source

Considering the availability of functional water facility of improved (JMP define) type and condition of the water source (having intact concrete platform at base) altogether, number of school have access to drinking water source is 5 (55.6%)

Table 7.5: Percentage distribution of school by access to drinking water source

Indicator	Primary school	Junior to secondary school	All
Having access to drinking water	75.0	40.0	55.6
Not having access to drinking water	25.0	60.0	44.4
N	4	5	9

7.3 Physical, Chemical and Microbiological Quality of Water

7.3.1 Physical quality of drinking water

Physical quality of drinking water has also been assessed for acceptability on the basis of students and staff sense and visual observation (e.g., clarity, color, smell, and taste) of water. In most (93.3%) of the schools quality of the water from the surveyed source is acceptable to the students and staff of the schools (Annex 1, Table 96).

7.3.2 Status of Arsenic and Iron level in drinking water

Laboratory findings of water samples demonstrate that arsenic and iron level in the tested drinking water sources of all (100%) the 15 schools is below the recommended level. It indicates that there is no excess or harmful amount of arsenic or iron is present in the tested drinking water source of the schools and the students are most likely free from exposure to unsafe chemicals like arsenic and iron in drinking water at school.

Table 7.6: Percentage distribution of the surveyed school by Arsenic and Iron level in drinking water

Unit of values	WAB standard	Water sources of the school chemically safe		Water sources of the school chemically contaminated	
		Number	Percent	Number	Percent
As (mg/L)	0.05mg/L	15	100	0	100
Fe (mg/L)	<0.3-1.00mg/L	15	100	0	100
N		15			

7.3.3 Status of pathogenic bacteria in drinking water

Laboratory test of water samples shows that out of 15 schools, water source of 4 (26.7%) schools are contaminated with coliform group of microorganism as per WAB standard (<10 cfu/100ml). In other words, water samples of tested sources of 4 schools have failed to meet WAB standard and thus contaminated by coliform group of organism. It indicates that out of 15, students of 11 (73.3%) schools have access to microbiologically safe and improved source of drinking water.

Table 7.7: Percentage distribution of surveyed school by Total Coliform (TC) level of drinking water

Unit of values	WAB standard	Water sources of the school microbiologically safe		Water sources of the school microbiologically contaminated	
		Number	Percent	Number	Percent
TCC (CFU/100ml)	<10 cfu/100ml	11	73.3	4	26.7
n		15			

TC: Total Coliform, CFU: Colony Forming Unit

In response to the query of having safe source of drinking water in school, one key informant (a school teacher) has depicted that in Banglabazar, his school has safe drinking water. The sources of such water are DTW by which water is pumped up through motors. However, the number of water point is not enough for the 700 students of the school. To ensure sufficient amount of safe water, more water points (taps) are needed to be installed. To that KII, there is no relationship of water supply and/or shortage with students' attendance in school. Generally, students are less interested to come to school is because of their poverty.

7.4 Distance of Water Source from the Latrine

According to Department of Public Health Engineering (DPHE), distance of latrine should be 30 feet from shallow hand tube wells, if possible bacterial contamination is to be avoided. It has been observed that standard distance between water source and latrine is not well maintained in most of the schools. Observation of the schools having own water sources shows that the distance between the water source and latrine is less than 30 feet in 66.7 percent of the school surveyed and exposing the students to a risk of water-borne diseases (Table 7.8)

Table 7.8: Percentage distribution of school by distance of drinking water sources from latrine in feet

Distance of water source from latrine	Primary school	Junior to secondary school	All
Less than 30 feet	75.0	60.0	66.7
30 feet or more	25.0	40.0	33.3
N	4	5	9

7.5 Status of Sanitation Facilities

Except one junior to secondary school, all (93.3%) the surveyed schools have latrine for the students within their campus and improved in nature. By category, 47.6 percent latrine of the schools is flush latrine connected to septic tank and 40.1 percent are connected to pit. (Annex 1, Table 112 and 113). Besides latrine, there is urinal in 33.3 percent of the schools. Irrespective of the categories of schools, on average there are 1.67 latrines and 0.5 urinal in the surveyed

schools. Considering average number of latrine and/or urinal in the 15 schools surveyed with average number of maximum students per shift per schools of the surveyed 15 schools it reveals that on an average there is one latrine and/or urinal per 99 students in the surveyed schools against the national standard of 60 students for one latrine or urinal (Table 7.9). By and large, in 6 (40%) schools (1in primary and 5 in junior to secondary), latrines are separated by sex but latrines in 4 (66.7%) schools are demarcated by sex. None of the latrines used by the girl students have arrangement for MHM. On observation, latrines are found clean in 73.3 percent of the schools (Annex 1, Table 121). Except in one Junior to secondary school, no latrine is found for the disabled in other schools surveyed (Annex 1, Tables 116, 119, and 123).

Table 7.9: Average number of students per latrine/urinal for students

Number of students	Primary school	Junior to secondary school	All
Average number of students	184	228	216
Average number of latrine for students	1.00	1.91	1.67
Average number of urinal for students	1.0	0.4	0.5
N	4	11	15

Regarding the issue of having access to sanitation facilities, particularly latrines, one KII (a school teacher) have informed that there is a sanitary latrine facility for the students in his school. These latrines are separated for both boys and girls. There are cleaners in the school as its staffs to clean the latrines. But, the number of latrines is not enough in line with the number of the students. Therefore, it is important to construct more latrines in the schools.

7.6 Access to Sanitation Facility

Considering the availability of latrine at school for students, functionality of latrine, separate chambers for female students and MHM facility at female latrine none of the junior to secondary school have access to sanitation facility except the primary schools where criteria such as separate chambers for female students and MHM facility at female latrine are ignored during estimation of access to sanitation. Thus estimated household having access to improved sanitation is 26.7 percent.

Table 7.10: Percentage distribution of schools by access to sanitation facility

Access to sanitation facility	Primary school	Junior to secondary school	All
Yes	100.0		26.7
No		100.0	73.3
N	4	11	15

7.6.1 Distance of latrine from school building and safety and privacy

In almost all schools, latrine is located either attached to or near the school building. Most (86.7%) of the latrines have well fitted door and are most likely used by the students with privacy. More than three-fifth (73.3%) of the latrines has door lock at the outside to keep the latrine close after school hour to avoid vandalism and/or random use by the outsiders. The pathway to latrine in most (86.7%) of the schools is safe and easy to walk (Annex 1, Tables 126, 128 & 129).

7.6.2 Distance of hand-washing place from the latrine and availability of soap

According to survey findings, In 11 (73.3%) schools hand-washing place was found inside the latrine and of them soap was found in 6 (54.5%) latrine (Annex 1, Table 114 and 115). Beside the hand-washing place inside the latrine, 80 percent schools also have hand-washing place outside the latrine within 10 footsteps of the latrine and soap was in 3 (25%) places (Annex 1, Tables 103-105). Altogether, considering the hand-washing place inside and outside the latrine, out of 15 schools, hand-washing place was found in 13 (86.7%) schools within 10 footsteps of the latrine. Of the hand-washing places, soap and water is seen in 6 (46.2%) places (Table 7.11).

Table 7.11: Percentage distribution of school by place of hand-washing with soap

Hand-washing place	Primary school	Junior to secondary school	All
Schools have hand-washing place	100.0	81.8	86.7
School do not have hand-washing place	0	18.2	13.3
N_1	4	11	15
Hand-washing place with soap	75.0	33.3	46.2
Hand-washing place without soap	23.0	66.7	53.8
N_2	4	3	13

N1 denotes number of total schools surveyed
N2 denotes number of schools have hand-washing place

7.7 Hygiene: Knowledge and practice

At the time of Tiffin period, certain numbers of students in different schools who are likely to use latrine and eat something in the school were observed structurally to see their hand-washing practices after using latrine and before taking food. In general hand-washing practice of the students in both cases is quite low. Given the background, it was observed that washing of both hands with soap and water after use of latrine was identical among the boys and girls (9.9% each). However, percentage of girls (23.6%) washing one hand after use of latrine was higher than the boys did so (13.0%) and the difference is statistically significant. In contrast, percentage of boys (13.0%) washing both hands before taking food was higher than the girls did so (3.1%) and the difference is statistically significant Washing one hand with soap is however somewhat higher among the girls as compared the boys but the difference in not significant (Table 7.12).

Table 7.12: Percentage of students by their observed hand-washing practices after using latrine and before taking food

Events	Indicators	Boys	Girls	p-value
After use of latrine	Wash two hands with soap and water	9.9	9.9	1.000
	Wash one hand with soap and water	13.0	23.6	0.011
	Wash two hands with water only	34.8	22.5	0.011
	Wash one hand with water only	37.9	42.4	0.391
	Do not wash hand	4.3	1.6	0.128
Before taking food	Wash two hands with soap and water	13	3.1	0.001
	Wash one hand with soap and water	8.1	10.1	0.534
	Wash two hands with water only	30.4	40.3	0.064
	Wash one hand with water only	48.4	39.6	0.113
	Do not wash hand	0.0	6.9	0.000
	N	161	159	

Apart from the above, except one, neither jug nor mug was available at the place of hand-washing (Annex 1, Tables 106). Water logging was observed at 16.7 percent of the hand-washing place and 33.3 percent was found dirty (Annex 1, Tables 108 and 109)

7.8 Status of Cleanliness

Cleanliness of classroom and courtyard has an important effect on the psychology and health of the students and staff. However, other than one of the primary, and two junior to secondary schools, waste basket is not found in other surveyed schools (Annex 1, Table 136). Class room of most (93.3%) of the schools was found clean and 73.3 of the school courtyard were free from visible dirt, animal excreta, sharp objects or any solid waste including rabbis (Annex 1, Table 142 and 143).

While the KII (a school teacher) was asked to response on the issue of cleanliness of class room and school premises, the KII has replied that the school has its own staffs or cleaners – ranked as 4th class staffs – who use to clean the mentioned places in school. They usually clean every classroom, latrines, and school premises (including the playground or yards) before starting of the classes. Additionally, the students are also instructed to dispose of the wastes in specific place or bins.

7.9 Disposal of Solid Waste and Storm Water

Except two junior to secondary school there is no waste disposal carrier found in the surveyed schools (Annex 1, Table 138). Most (80%) of the schools disposes the solid waste indiscriminately at ditch, open place and drain. Further analysis reveals that in 40 percent of the surveyed schools, solid waste is burnt out at intervals and in a few, solid waste is taken away by City Corporation (Annex I, Table 139-141).

Other than two concrete (*pucca*) drain in junior to secondary schools, none of the surveyed schools has any formal drain to run away the storm water from the school courtyards Annex 1, Table 134 and 135)

Chapter-8
SITUATION OF WASH IN COMMUNITY CLINIC

8.1 Introduction

This chapter describes the current situation of water sources, availability and adequacy of water, quality of drinking water, distance of water sources from the possible sources of contamination, situation of sanitation facility, hygienic practices and cleanliness of clinics- all related to WASH situation in community clinic.

8.2 Source of Water Supply

Of the surveyed 2community clinics, there is a shallow tube-well (STW) inside in each clinic but none of them is found functional as result of groundwater depletion from downward displacement of water table. Both clinics collect and use water from their nearby neighborhood source.

8.2.1 Water quality of the neighbourhood water source

Due to lack of water, both the staff as well as the clients is managing the water need from nearby water source as an alternative measure. Laboratory findings of water samples from the neibourhood tube-wells of both community clinics demonstrate that the level of arsenic, iron and that of TTC is below the recommended level. It indicates that alternative source of drinking water in both the community clinic is safe for human consumption.

Table 8.1: Percentage distribution of the surveyed alternate neighbourhood source of the community clinic by Arsenic, Iron, and bacteria level in drinking water

Unit of values	WAB standard	Water sources of the school chemically safe		Water sources of the school chemically contaminated	
		Number	Percent	Number	Percent
As (mg/L)	0.05mg/L	2	100	0	100
Fe (mg/L)	<0.3-1.00mg/L	2	100	0	100
TCC (CFU/100ml)	<10 cfu/100ml	2	100	0	100
n		2			

TC: Total coloform, CFU: Colony Forming Unit

8.2.2 Distance of water source from the latrine and hand washing place

Observation of both the community clinics shows that the distance between the alternative water source and latrine is less than 15feet. Irrespective of staffs and patients, no designated hand-washing place is seen with water and soap.

Table 8.2: Percentage distribution of community clinic by distance of alternate (neighbourhood) drinking water sources from neighborhood latrine in feet

Distance of water source from latrine	Number
30 feet or more	0
Less than 30 feet	2
N	2

8.3 Status of Sanitation Facilities

It is seen that both community clinics have two flush latrines in each connected to pit or septic tank. In Bahadurpur CC, out of two latrines one is found blocked and not suitable to use. Other one is also not in regular use, however often is used as urinal but not for daefecation due to rupture of the outlet pipe before it drain to pit and become unimproved. A bucket with water is found in front of the door of the latrine indicates its occasional utilization if not at all times.

In Jangaliapara CC, none of the two latrines are in use at present due to lack of water supply. Nonetheless, one out two can be used if water is made available.

Although, by design, there is two latrines in each clinic but not demarcated by gender or by staff and client. None of the latrine has rail inside and not suitable for the use of disabled people. Among the clinics, except loose dust and mild stain in the squatting pan one of two latrines is found clean one in each clinic.

8.3.1 Distance of latrine: Safety and privacy

In the community clinics, latrines are located at clinic buildings close to water source. The latrine in both clinics has well fitted door and can be locked from inside for privacy of the users. The pathway to latrine in both community clinics is safe and easy to walk.

8.4 Status of Cleanliness of the Clinics

In both the clinics there is no well-defined boundary or courtyard. The service room of one community clinic is found clean but visible dirt is found in the courtyard and vice versa for another surveyed community clinic. There is only one dustbin in each clinic and not adequate to hold all the waste of the clinic. At both clinics, medical waste is disposed by burning. None of the community clinics has drainage system to run away the storm water from the clinic courtyards.

Chapter-9
Recommendations

Banglabazar is one of the nine wards in Gazipur City town, a growing industrial area on the outskirts of Dhaka City where the number of slums and low income settlements are increasing as a result of growing number of factories. Motorized tube-well is the major source of drinking water but a considerable percentage of water sources are lack of intact platform around the base of water sources and likely to contaminate source water. Laboratory examination of water sample of selected water sources shows that user households of those water sources are free from chemical contamination but not from microbiological contamination. Sanitation facility of the local residents is inadequate and a percentage of them use unimproved latrine. Most of latrines are shared with two or more households. Except in 2 to 3 indicators, hand-washing practices with soap and water at critical times is not fair. There is no proper system for solid and liquid waste management. At the time of menstruation, females with reproductive ages mostly use rag of cloth, followed by sanitary napkin to some extent. Although most the rag users wash the rags with soap and water but in most cases practice of drying the rag without sun light is not suitable for hygiene and disinfection of the rag. Disposal of sanitary napkin is largely indiscriminate not safe. Not all schools have their own water source. Sanitation facility is not adequate to the number of students. Although hand-washing place is there in most schools, soap at the hand-washing place was seen in few. In all school, latrines are not separated for boys and girls and where separated, latrine for girls does not have facility for MHM. The WASH conditions of community clinics are very poor. None of the community clinics have functional water supply. Sanitation facilities are also poor due lack of water ant latrines are not in a good shape for use. None of clinics have had-washing place. The empirical evidences generated through survey and other methods have produced a comprehensive picture of the current state of affairs of "WASH for Community Development in Banglabazar, Gazipur" project. The current section recapitulates the key findings and provides recommendations for future improvements.

1. Despite major source of water is improved in nature, a notable percentage of water sources lack of intact platform around the base of water source and contaminate source water. An initiative should be taken to sensitize the landlords about benefit of water-tight concrete platform and potential risk in absence of intact platform.
2. Since a percentage of source water as well as household stored water is found contaminated with Coliform group of organism, project beneficiary should be advised to treat water at household level before drinking water be it from sources or stored water. Simultaneously, due emphasis is also to be given for proper practice of water safety plan to avoid contamination of stored water.
3. Shallow tube-well is the major source of drinking water in the surveyed area. To other end, ground water table is going down rapidly everywhere. Given the circumstances, most of the resident, may suffer acute crisis of drinking water in near future. Therefore, advocacy with concerned authority is strongly solicited for surface piped water supply and rain water harvesting system as well.
4. Access to sanitation facilities is poor and service gap is wide as compared to water facilities. Since the infrastructure is costly, and construction of individual sanitation facility for each of the low income household may not be a realistic approach, this low income settlement can be provided with community latrine with maintenance by the

community. A sound operation and maintenance mechanism should be in place with monitoring and follow up from the local government.

5. Hand washing knowledge as well as practices is quite far from expected level. Education secession with the project beneficiary, especially with female members of the household should be arranged periodically through courtyard gathering. For the male it could be arranged at tea stall.
6. Children's open defecation and littering practice can be stopped through introducing "Potty training for children under-five" together with sensitizing the mothers/caregivers for safe disposal of child faeces.
7. Waste disposal is a less prioritized issue, and a considerable percentage of households dispose of the water discriminately. Since the waste disposal as well as its management is quite expensive and there is no possible solution of it from the GCC in near future, it can be collected by local arrangement for disposal to a distance place or an initiative can be taken from project in partnership with local government and local private entrepreneurs.
8. Lack of formal drainage is another priority issue. It should be addressed with due emphasis to avoid water logging of the area during rainy season as well as for proper disposal of liquid waste.
9. Menstrual hygiene training for the adolescents as well as women of reproductive age need to be introduced as an essential component in the project implementation.
10. Drinking water source of number of schools is found is microbiologically contaminated. Necessary steps are to be taken at earliest to stop consumption of unsafe water from the source in the surveyed schools where water source is detected as contaminated microbiologically.
11. Water and hand-washing places are essential for hygiene promotion and practicing. Therefore all schools to have hand washing places with adequate clean water and soap for students to practice hand-washing at school and madrasah.
12. Study findings shows that latrines including urinals are largely overcrowded and quite far from meeting the sanitation adequacy in Schools. More latrine and urinal is to be provided in the schools.
13. Lack of functional water source in both the surveyed community clinics is of concerns. Earliest possible intervention is solicited to this regard with clear mechanism of operation and maintenance. Community Group and Community Support Group of the respective CC are to be activated and should be involved in these processes.
14. Proper practice of hand-washing is crucial in general and in health service delivery facilities in particularly. Therefore, mere absence of hand-washing place needs the attention of concerned authority.

ANNEX: 01

Survey Based Data Tables

Table 1: Percentage distribution of respondents by gender

Gender	Percentage
Male	
Female	100.0
N	225

Table 2: Percentage Distribution of respondents by educational status

Level of education	Percentage
No education/Illiterate/can write name	26.2
Read and write only	2.2
Reading up to primary	0.4
Non-formal education	16.4
Primary passed	12.4
Reading up to secondary	27.6
SSC passed	7.6
Reading up to higher secondary	1.3
HSC passed	3.6
Reading up to BA/BSc/B.Com	0.9
BA/BSc/B.Com passed	0.9
Above B.A/.BSc/B.Com.	0.4
N	225

Table 3: Percentage Distribution of respondents by marital status

Marital status	Percentage
Unmarried	2.2
Married	92.9
Widow/widowed	3.1
Divorce	1.8
Separated	0.0
N	225

Table 4: Percentage distribution of respondents by construction materials of houses

Construction material	Percentage
Concrete [Brick and Cement]	1.3
Cement and brick walled house with tin in the roof	52.0
Tin made	41.8
House with bamboo/earthen made wall	2.7
Bamboo walled and tin on the roof	0.4
Polythine walled and bamboo roof	0.4
Floor made of earth and sand	1.3
Brick and cement floor	0.0
N	225

Table 5: Percentage distribution of respondents by status of household ownership and living status

Household ownership and living status	Percentage
Own house lonely	2.7
Own house with wife and other family members	36.0
Own house with wife	8.0
Rented house with wife	36.9
Rented house lonely	0.4
Own house on someone's land	0.4
Rented mess	0.4
Husband/ wife lonely as sublet	0.4
Rented house with relatives	14.2
Staff quarters of Garment Factory	
Others	0.4
N	225

Table 6: Percentage distribution of respondents by having electric connection in houses

Access to electricity	Percentage
Yes	98.2
No	1.8
N	225

Table 7: Percentage distribution of respondents by access to television

Access to TV	Percentage
Yes	62.7
No	37.3
N	225

Table 8: Percentage distribution of respondents by most favorite channel

Favourite TV Channel	Percentage
Star Jalsha	84.4
BTV	4.3
Bangla vision	2.8
Discovery	0.7
Zee bangla	2.8
Movie Bangla	0.7
Sony-8	1.4
My TV	0.7
NTB	0.7
10 Star plus	1.4
N [applicable]	141

Table 9: Percentage distribution of respondents by popular TV programs are watched

Popular program	Percentage
Bangladeshi drama/serial	8.5
Bangladeshi cinema	0.7
Indian bangle drama/serial	85.8
Bangladeshi cinema	
Hindi drama/serial	2.1
Hindi cinema	
Bangla reality show	0.7
Hindi reality show	
Local dish ckannel	
Discovery	0.7
Song	0.7
News	0.7
N [applicable]	141

Table 10: Percentage distribution of respondents by area in which they spend weekends

Area of spending weekends	Percentage
Watching television	16.9
Washing cloth	20.0
Roaming	3.1
Hang out with friends of	10.7
Going to village home	0.4
Watching cinema	3.1
Sleeping	17.3
Works in a shop	0.4
Works in tailoring house	0.4
No leave/No job	72.0
N	225

Note: Multiple response questions, total percentage may exceed 100

Table 11: Percentage distribution of respondents by having mobile phone

Access to mobile phone	Percentage
Yes	50.7
No	49.3
N	225

Table 12: Percentage distribution of respondents by different company's mobile phone they used

Different type of company	Percentage
NOKIA	16.7
SAMSUNG	7.0
SYMPHONY	45.6
WALTON	1.8
BY-2	0.9
HUAWEI	1.8
ALVIO	0.9
MYCELL	1.8
TINMO	0.9
RANGS	0.9
WINSTAR	1.8
AIRMAX	0.9
KINSTEAR	1.8
ITEL	1.8
SLEPER PHONE	0.9
OCTENN	0.9
ZELTA	0.9
PEACE PP-2	2.6
STRAWBERRY	0.9
MICROMAX	0.9
GPHONE	1.8
ELITE	0.9
WC	0.9
OKAPIA	0.9
GALAXY	0.9
OPPO	0.9
QPHONE	1.8
FORME	0.9
N [applicable]	114

Table 13: Percentage distribution of respondents by type of mobile phone

Type of mobile phone	Percentage
Smart phone	15.8
Normal mobile phone	84.2
N [applicable]	114

Table 14: Percentage distribution of respondents by status of taken mobile phone wherever they go

status of taken mobile phone	Percentage
Yes	92.1
No	7.9
N [applicable]	114

Table 15: Percentage distribution of respondents by tasks that they use mobile phone

Tasks	Percentage
Talking	99.1
Sending SMS	7.9
Photography	16.7
Mobile banking	0.9
Listening music	19.3
Watching cinema	0.9
Playing game	1.8
Face book	1.8
Skype	0.9
Imo	1.8
Internet	0.9
N [applicable]	114

Note: Multiple response questions, total percentage may exceed 100

Table 16: Percentage distribution of respondents by household expenditure in last month

Household expenditure in last month	N	Average
Food	223	6376
Clothes/dress	116	1615
House rent	131	2056
Education	113	2084
Health	114	1928
Travel	66	653
Electricity bill	118	1131
Gas/Fuel bill	107	735
Water/WASA bill	10	306
Use of toilet	2	300
Waste disposal	18	335
Pan/Battle nuts	89	563
Smoking/Tobacco	86	504
Send money to home	102	2408
Tiffin	82	513
Savings	136	4081
Cosmetics	72	325
Entertainment	90	280
Mobile phone	192	403
Paying debts	70	4015
Others	2	1225
Total expenditure (Average)	225	17530
Median	225	14000

Table 17: Percentage distribution of respondents by household income in last month

Household income in last month	N	Average
Salary	174	12795
Labour cost	17	10224
Labour cost [Food material]	4	5500
Overtime	97	2443
Rent from house/shop	47	10766
Rent from Van/Rikshaw/Auto Rikshaw/	11	12336
Grocery shop/small business	40	16698
Selling goods	1	1500
Overseas income	2	16500
Gifts	3	3667
Poultry	1	2260
Others	4	22125
Total income (Average)	225	18244
Median	225	15000

Table 18: Percentage distribution of HHs by their savings status

Savings status	Percentage
Yes	63.1
No	36.9
N	225

Table 19: Percentage distribution of respondents who provide information about savings

Status of giving information about savings	Percentage
Provided information	93.7
Don't know	2.8
Don't want to answer/No response	3.5
N [applicable]	142
Average amount of savings	29748.9

Table 20: Percentage distribution of HHs by main source of drinking water

Main source of water	Percentage
Deep Tube-well	1.8
Shallow TW [without marking]	96.0
Others	2.2
N	**225**

Table 21: Percentage distribution of HHs by the reason of not usable water source

Reason of not usable water source	Percentage
Not availability of water	100.0
Drowned into water	
Others	
N [applicable]	20

Table 22: Percentage distribution of respondents by status of having scope to avail 20 liters of water per person

Status of having scope	Percentage
Yes	100.0
No	
N	225

Table 23: Percentage distribution of households by sharing of main drinking water point

Shared water point	Percentage
Single household	19.6
More than one household	80.4
N	**225**

Table 24: Percentage Distribution of main water point by average number of household shared

Number household shared	Percentage
< 6	40.3
6-10	37.0
11-15	14.4
16-20	5.0
21-25	2.2
26+	1.1
Average number of household	7.8
N [applicable]	181

Table 25: Percentage distribution of households by ownership of the drinking water source

Ownership of drinking water source	Percentage
Owned	41.3
Owner of the household	53.8
Neighbor	4.0
Joint ownership	0.9
N	**225**

Table 26: Percentage distribution of households by status of payment to avail water

Payment status	Percentage
Yes	0.9
No	99.1
N	225
Average amount of cost [in Tk.] to avail	215.00
N [applicable]	3

Table 27: Percentage distribution of households by status of repairing the water source

Repairing status	Percentage
Yes	19.1
No	80.9
N	225

Table 28: Percentage distribution of households by reasons for repairing the water source

Reason for repairing	Percentage
Pipe had burst	55.8
Check-ball fallen/damaged	4.7
Pipe and bucket were damaged	2.3
Bucket was damaged	23.3
Cap was damaged	7.0
Motor was burnt	7.0
N	43

Table 29: Percentage distribution of households by amount of cost for repairing the water source

Reason for repairing	Percentage
Free of cost	28.6
< 20	4.8
21-50	2.4
201-500	14.3
501-1000	21.4
1001-2000	23.8
2001-4000	2.4
6001+	2.4
Average amount of repairing cost [in Tk.]	851.81
N [applicable]	43

Table 30: Percentage distribution of households by status of payment to maintenance the water source

Payment status	Percentage
Yes	
No	100.0
N	225

Table 31: Percentage distribution of HHs by practice of drinking water from the source

Drinking practice of water	Percentage
Drink water from source without treatment	96.9
Drink water with treatment	3.1
Drink water either after treatment or without treatment	
N	225

Table 32: Percentage distribution of HHs by practice of water purification

Indicators	Percentage
Don't purify	96.9
Boiling	1.3
Through filter	0.9
Strain by cloth	0.9
N	225

Table 33: Percentage distribution of respondents regarding time [minute] required to collect drinking water

Time in minute	Percentage
0 minute	43.1
<5 minutes	41.8
6-10 minutes	12.4
11-15 minutes	1.8
16-20 minutes	0.4
26-30 minutes	0.4
Average amount of time [in minutes]	2.6
N	225

Table 34: Percentage distribution of respondents regarding distance [feet] of the sources of drinking water from home

Distance [feet]	Percentage
No distance	67.6
<10 ft.	0.9
10-20 ft.	15.1
21-30 ft.	5.3
31-40 ft.	5.8
41-50 ft.	1.3
51-60 ft.	2.2
61-70 ft.	0.4
91+	1.3
Average distance [in ft.]	10.1
N	225

Table 35: Percentage distribution of HHs by the person who collect water

Person involved in collecting water	Percentage
Female members of the HH	
Male members of the HH	
Adolescent girls [10-18]	98.7
Adolescent boys [10-18]	1.3
Purchased water delivered at home	
Home maids	
Others	
N	**225**

Table 36: Percentage distribution of HHs by access to water at any time

Status of access to water	Percentage
Yes	86.2
No	13.8
N	225

Table 37: Percentage distribution of HHs by the problems faced while collecting water

Problems	Percentage
Lack of supply	
Too much gathering	71.0
The owner does not allow	
Lots of disagreements/quarrels	29.0
Institutional, water is not available when it is closed	
Water is not provided because money for repairing is not given	
Lack of security	
Others	
N [applicable]	31

Table 38: Percentage distribution of HHs by practice of washing the container with drinking water before collection of water

Wash container with clean water before collection of water	Percentage
Yes and always	83.6
Yes but off and on	11.6
No	2.2
Don't know/ can't say	2.7
N	225

Table 39: Percentage distribution of HHs by practice of covering container while carrying water to home from source

Cover the container while carrying water to home	Percentage
Yes and always	42.2
Yes but off and on	34.2
No	23.6
Don't know/ can't say	
N	225

Table 40: Percentage distribution of HHs by practice of covering container while storing water at home

Cover the pot while carrying water	Percentage
Yes	80.9
No	12.4
NA/ don't store water	6.7
N	225

Table 41: Percentage distribution of HHs by place of storing water

Place of storing water	Percentage
On the floor	64.0
At an elevated place	31.6
NA/ don't store water	4.4
N	225

Table 42: Percentage distribution of HHs by practice of lifting water from the container without touching water

Practice of lifting water	n	Percentage
Dipping down of finger inside the glass while pouring water	4	1.8
No dipping of finger into glass while pouring water	42	18.7
Lifting of water by putting finger into water	11	4.9
Lifting of water without putting finger inside the water	168	74.7
Hold/kept fingers at the top edge of the glass while serving water	31	13.8
No responses	3	1.3
N	225	

Note: Multiple response questions, total percentage may exceed 100

Table 43: Percentage distribution of HHs by the source of water for cooking

Sources of water for cooking	Percentage
Deep Tube-Well	1.8
Shallow tube well (without marking)	96.0
Shallow tube wells (green marked)	2.2
N	225

Note: Multiple response questions, total percentage may exceed 100

Table 44: Percentage distribution of HHs by the source of water for bathing and washing clothes

Sources of water for bathing and washing clothes	Percentage
Deep Tube-Well	1.8
Shallow tube well (without marking)	96.0
Shallow tube wells (green marked)	2.2
N	225

Note: Multiple response questions, total percentage may exceed 100

Table 45: Percentage distribution of HHs by the source of water for washing, cooking, utensils, pots and dishes

Sources of water for washing, cooking, utensils, pots and dishes	Percentage
Deep Tube-Well	1.8
Shallow tube well (without marking)	96.0
Shallow tube wells (green marked)	2.2
N	225

Note: Multiple response questions, total percentage may exceed 100

Table 46: Percentage distribution of respondents by knowledge about safe water

knowledge about safe water	Percentage
Transparent	96.9
Odorless	84.9
Tasteless	78.7
Foul smelling/Bad odor	8.4
Free from excessive iron	2.7
Arsenic-free	5.8
Free from harmful germs	4.4
N	225

Note: Multiple response questions, total percentage may exceed 100

Table 47: Percentage distribution of HHs by status of having latrine within 30 feet of the tube well

Status of having latrine within 30 feet of the tube well	Percentage
Yes	68.4
No	31.6
N	225

Table 48: Percentage distribution of HHs by status of cleanliness the base of the tube well

Cleanliness status	Percentage
Dirty	22.2
Clean	77.8
N	225

Table 49: Percentage distribution of HHs by status of any breakage around the platform of tube well

Breakage status	Percentage
Yes	17.8
No	72.4
No platform	9.8
N	225

Table 50: Percentage distribution of HHs by status of logging water over the platform of tube well

Status of logging water	Percentage
Yes	17.2
No	82.8
N [applicable]	203

Table 51: Percentage distribution of HHs by status of any breakage of the platform of tube well

Status of any breakage of the platform	Percentage
Yes	21.7
No	78.3
N [applicable]	203

Table 52: Percentage distribution of HHs by status of weakness of the base of tube well

Status of weakness	Percentage
Yes	11.6
No	88.4
N [applicable]	203

Table 53: Percentage distribution of HHs by status of any breakage around the tap

Status of any breakage around the tap	Percentage
Yes	13.6
No	86.4
N [applicable]	169

Table 54: Percentage distribution of HHs by status of logging water over the platform of the tap

Status of logging water	Percentage
Yes	13.0
No	80.5
No platform	6.5
N [applicable]	169

Table 55: Percentage distribution of HHs by status of any breakage of the platform of the tap

Status of any breakage of the platform	Percentage
Yes	11.8
No	81.7
No response	6.5
N [applicable]	169

Table 56: Percentage distribution of respondents regarding distance of the latrine from the household

Distance (feet)	Percentage
No distance	64.0
<6 ft.	0.9
6-10 ft.	2.7
11-20 ft.	12.4
21-30 ft.	5.8
31-40 ft.	6.7
41-50 ft.	2.7
51-60 ft.	1.8
61-70 ft.	1.8
71-80 ft.	0.4
91-100 ft.	0.9
Average distance [in feet]	11.8
N	225

Table 57: Percentage distribution of HHs by status of security for female at night

Status of security	Percentage
Secure	79.1
Insecure	20.9
N	225

Table 58: Percentage distribution of HHs by status of using latrine by others HH members

Status of using latrine	Percentage
Yes	67.6
No	32.4
N	225

Table 59: Average number of family and family member use the latrine

Average number of family	7.5
Average number of member of those families	23.4
N [applicable]	152

Table 60: Percentage distribution of HHs by status of having latrine only for female members

Status of having latrine only for female members	Percentage
Yes	9.8
No	90.2
N	225

Table 61: Average number of chamber, and the female members who use latrines those only for female members

Average number of chambers	1.3
Average number of female members use the chambers	17.2
N [applicable]	22

Table 62: Percentage distribution of HHs by ownership of the latrine

Ownership of the latrine	Percentage
Own	33.8
Jointly with neighbour	8.0
NGO	0.4
Public/ WASA	
Do not use latrine	
Landlord	57.8
Don't know	
N	**225**

Table 63: Percentage distribution of respondents by status of the necessity of repairing latrine

Status of the necessity	Percentage
Yes	12.0
No	88.0
N	225

Table 64: Percentage distribution of respondents by the reason behind repaired

Reasons behind repaired the latrine	Percentage
The latrine was blocked	18.5
The pit/septic tank was filled up	81.5
The platform had been broken	
The door was broken/repaired	
Water seal had to be repaired	
Others	
N [applicable]	27

Table 65: Percentage distribution of respondents by status of using sandals while going to latrine

Status of using sandals in latrine	Percentage
Yes	100.0
No	
N	225

Table 66: Percentage distribution of respondents by status of using latrine by physically disabled member

Status of using latrine by physically disabled member	Percentage
Yes	1.8
No	1.3
Not applicable	96.9
N	225

Table 67: Percentage distribution of respondents by the reason of not using latrine by physically disabled member

Reason	Percentage
Design is not elderly friendly	33.3
Fear of falling down	66.7
located in distant / high or low place	
Can not take the wheel chair inside	33.3
There is no specific collector	
Others	
N [applicable]	3

Note: Multiple response questions, total percentage may exceed 100

Table 68: Percentage distribution of respondents by status of arrangement of water inside the latrine

Status of arrangement of water	Percentage
Yes	63.6
No	36.4
N	225

Table 69: Percentage distribution of respondents by presence of soap inside the latrine

Status of having soap	Percentage
Yes	60.8
No	39.2
N applicable	143

Table 70: Percentage distribution of HHs by place of hand washing place near latrine and kitchen

Place of hand-washing near latrine and kitchen	Percentage	n (applicable)
Near latrine	79.0	138
Near kitchen	80.0	225

Table 71: Percentage distribution of HHs by place of hand washing place near latrine

Status of having soap at hand washing place	Percentage
Yes	23.9
No	76.1
N applicable	109

Table 72: Percentage distribution of HHs by the place of keeping soap

Place	Percentage
Kept inside the room	91.6
Outside the latrine	
Others (wash hand with ash and mud)	8.4
N [applicable]	83

Table 73: Percentage distribution of HHs by place of disposal of solid waste

Place of disposing wastage	Percentage	n
Specified in the / dustbin	15.1	34
Where and there	4.9	11
In the open field	4.4	10
Take out private sweeper	4.9	11
Sewer/drain /canal	9.3	21
In a specific pit	60.9	137
Collect locally	0.4	1
N	**100.0**	**225**

Table 74: Percentage distribution of HHs by place of disposing liquid waste from bathroom and kitchen

Place of disposing liquid waste	Percentage	n
Removed in public drain with the help of small sewer or pipes	0.4	1
Removed in soakage pit	2.2	5
Removed in the canal or bill with the help of drain	83.6	188
Removed in a pit/hole nearby	13.8	31
N	**100.0**	**225**

Table 75: Percentage distribution of the respondents by their knowledge on appropriate absorbent material to be used during the period

Appropriate material	Percentage
Cotton	0.4
Tissue paper	0.9
Rag of clothe/new cloth	57.8
Sanitary napkin	26.7
Panty	0.9
Period stopped	13.3
N	**225**

Table 76: Percentage distribution of the respondents by their practice of absorbent material to be used during the period

Material used	Percentage
Cotton	1.5
Tissue paper	1.0
Rag of clothe/new cloth	72.8
Sanitary napkin	23.6
Panty only	1.0
N [applicable]	**195**

Table 77: Percentage distribution of the respondents regarding management of used sanitary napkin

Management of used sanitary napkin	Percentage
Dispose into waste basket	17.6
Dispose into drain	23.5
Dispose into toilet	13.7
Buried	13.7
Not applicable	13.7
No response	17.6
N	**51**

Table 78: Percentage distribution of the respondents regarding amount of money spend for purchasing sanitary napkin per month

Amount of money	Percentage
Not cost	21.7
Tk. 25-50	41.3
Tk. 51-75	17.4
Tk. 76-100	19.6
Average cost per month [in tk.]	46.9
N [applicable]	46

Table 79: Percentage distribution of the respondents by the frequency of changing sanitary napkins at the time of menstruation

Frequency	Percentage
1 time	13.0
2 times	45.7
3 times	26.1
4 times and more	2.2
No response	13.0
N [applicable]	46

Table 80: Percentage distribution of the respondents by status of cleanliness of the outside part of genital area at the time of menstruation

Status of cleanliness of genital area	Percentage
Yes	93.8
No	6.2
N [applicable]	**195**

Table 81: Percentage distribution of the respondents by the frequency of cleaning outside part of genital area at the time of menstruation

Frequency	Percentage
1 time	2.6
2 times	18.5
3 times	30.3
4 times and more	41.0
No response	7.7
Average number to time to be changed	3.1
N [applicable]	195

Table 82: Percentage distribution of the respondents by status of facing problems to keep clean themselves at the time of menstruation

Status of facing problems	Percentage
Yes	
No	100.0
N [applicable]	195

Table 83: Percentage distribution of the working respondents by availability of place of disposal of absorbent/pad at work place during the period

Availability of place of disposal	Percentage
Yes	85.2
No	14.8
N [applicable]	**115**

Table 84: Percentage distribution of the working respondents by place of disposal of absorbent/pad at work place during the period in case of no place for disposal

Availability of place of disposal	Percentage
Randomly here and there	11.8
Bring home after wrapping paper inside a bag	23.5
NA [Use rag]	64.7
N [applicable]	**17**

Table 85: Percentage distribution of the respondents by the disposing practice of used cloth/ panty at work place during menstruation

Practice	Percentage
Bring home after washing	4.3
Dispose into basket	43.5
Throw into toilet	37.4
Bring home with unchanged in condition	1.7
No response	13.0
N [applicable]	**115**

Table 86: Percentage distribution of the respondents by the frequency of changing sanitary napkin at work place during menstruation

Frequency	Percentage
1 time	55.7
2 times	44.3
Average frequency of changing sanitary napkin	1.4
N [applicable]	115

School survey on assessment for WASH condition

Table 87: Percentage, type of gender of the school

Type of gender of the school	Primary school	Junior to secondary school	All
Both	100.0	100.0	100.0
Total	100.0	100.0	100.0
N	4	11	15

Table 88: Total and average number of teachers

Number of teachers	Primary school	Junior to secondary school	All
Average number of male teachers	2.5	6.1	5.1
Average number of female teachers	2.3	4.8	4.1
N	4	11	15

Table 89: Total and average number of students

Number of students	Primary school	Junior to secondary school	All
Average number of boys	162	180	175
Average number of girls	146	152	150
N	4	11	15

Table 90: Percentage, number of shift in the school

Number of shift in the school	Primary school	Junior to secondary school	All
One shift		27.3	20.0
Two shift	75.0	72.7	73.3
NA	25.0		6.7
N	4	11	15

Table 91: Average number of students (highest in the shift), water source and latrine for students

Number of students	Primary school	Junior to secondary school	All
Average number of students (highest in the shift + non-shift total)	184	228	216
Average number of functional water points	4.75	3.36	3.73
Average number of latrine for students	1.00	1.91	1.67
Average number of urinal for students	1.0	0.4	0.5
N	4	11	15

Table 92: Percentage distribution of school by status of payment to collect drinking water

Status of payment	Primary school	Junior to secondary school	All
Yes		27.3	20.0
No		18.2	13.3
Not applicable	100.0	54.5	66.7
N	4	11	15
Average amount of payment (Tk.)	NA	460	460
Applicable n	NA	5	5

Table 93: Average number of functional drinking water points

	Primary school	Junior to secondary school	All
Number of functional water points	4.75	3.36	3.73
N	4	11	15

Table 94: Percentage distribution of school by status of separate source for the male and female students to collect water

Separate sources of drinking water	Primary school	Junior to secondary school	All
Yes	25.0	9.1	13.3
No	75.0	81.8	80.0
Not applicable		9.1	6.7

N	4	11	15

Table 95: Percentage distribution of school by status of utensils used for drinking water

Status of utensils used	Primary school	Junior to secondary school	All
For male students			
Yes		18.2	13.3
Not applicable	100.0	81.8	86.7
Total	100.0	100.0	100.0
For female students			
Yes		18.2	13.3
Not applicable	100.0	81.8	86.7
Total	100.0	100.0	100.0
For both students			
Yes	100.0	72.7	80.0
Not applicable		27.3	20.0
Total	100.0	100.0	100.0
N	4	11	15

Table 96: Percentage distribution of school by quality of drinking water (multiple responses)

Quality of drinking water	Primary school	Junior to secondary school	All
Transparent, odourless, tasteless	100.0	90.9	93.3
Not applicable		9.1	6.7
N	4	11	15

Table 97: Percentage distribution of school by condition of water source as friendly and safe for children (multiple responses)

Status of water source	Primary school	Junior to secondary school	All
Easy to use	100.0	81.8	86.7
Can't use easily		9.1	6.7
Not applicable		9.1	6.7
N	4	11	15

Table 98: Percentage distribution of school by status of platform

Status of platform	Primary school	Junior to secondary school	All
Broken	25.0		16.7
Good	75.0	100.0	83.3
N	4	2	6

Table 99: Percentage distribution of school by status of water logging on and around the platform of the source of water

Status of water logging on and around the platform	Primary school	Junior to secondary school	All
Yes		40.0	22.2
No	100.0	60.0	77.8
N	4	5	9

Table 100: Percentage distribution of water sources by status of cleanliness of platform/around the water source

Status of cleanliness	Primary school	Junior to secondary school	All
Cleaned	50.0	60.0	55.6
Not cleaned	50.0	40.0	44.4

N	4	5	9

Table 101: Percentage distribution of school by status of having drainage system

Status of having drainage system	Primary school	Junior to secondary school	All
Yes	75.0	70.0	71.4
No	25.0	30.0	28.6
N	4	10	14

Table 102: Percentage distribution of school by types of drainage system

Types	Primary school	Junior to secondary school	All
Pucca drain/Connected with main drain or soak pit through pipe		28.6	20.0
Pucca drain/Not connected with main drain or soak pit if there is pipe	66.7	57.1	60.0
Earthen drain (kacha) not connected with main drain or soak pit	33.3		10.0
Drain/Canal/Ditch		14.3	10.0
N	3	7	10

Table 103: Percentage distribution of school by status of place of hand washing

Status of hand washing place	Primary school	Secondary school	All
Yes	100.0	72.7	80.0
No		27.3	20.0
N	4	11	15

Table 104: Percentage distribution of hand washing place in school by status of water supply system

Status of water supply system	Primary school	Secondary school	All
Yes	100.0	100.0	100.0
No			
N	4	8	12

Table 105: Percentage distribution of hand washing place in school by status of having any soap/ detergent

Status of having any soap/detergent	Primary school	Secondary school	All
Yes	25.0	25.0	25.0
No	75.0	75.0	75.0
N	4	8	12

Table 106: Percentage distribution of hand washing place in school by status of having jug or mug with handle

Status of having jug or mug	Primary school	Secondary school	All
Yes	25.0		8.3
No		25.0	16.7
Not applicable	75.0	75.0	75.0
N	4	8	12

Table 107: Percentage distribution of hand washing place in school by distance from latrine

Distance	Primary school	Secondary school	All
Less than 10 steps	100.0	100.0	100.0
More than 10 steps			
N	4	8	12

Table 108: Percentage distribution of hand washing place in school by status of water logging on that place

Status of water logging	Primary school	Secondary school	All
Yes		25.0	16.7
No	100.0	75.0	83.3
N	4	8	12

Table 109: Percentage distribution of hand washing place in school by status of cleanliness

Status of cleanliness	Primary school	Secondary school	All
Yes	75.0	62.5	66.7
No	25.0	37.5	33.3
N	4	8	12

Table 110: Percentage distribution of hand washing place in school by status of having drainage system

Status of having drainage system	Primary school	Secondary school	All
Yes	75.0	62.5	66.7
No	25.0	37.5	33.3
N	4	8	12

Table 111: Percentage distribution of hand washing place in school by types of the drainage system

Types	Primary school	Secondary school	All
Pucca drain/Connected with main drain or soak pit through pipe		20.0	12.5
Pucca drain/Not connected with main drain or soak pit if there is pipe	66.7	40.0	50.0
Earthen drain (kacha) connected with main drain or soak pit		20.0	12.5
Drain/Canal/Ditch	33.3	20.0	25.0
N	3	5	8

Table 112: Percentage distribution of school by availability of sanitation facility

Availability of sanitation facility	Primary school	Junior to Secondary school	All
Yes	100.0	90.9	93.3
No		9.1	6.7
N	4	11	15

Table 113: Percentage distribution of school by type of sanitation facility

Type of sanitation facility	Primary school	Junior to Secondary school	All
Latrine flushes faecal matter to septic tank	75.0	36.4	46.7
Pit latrine with slab and water seal	25.0		6.7
Pit latrine with slab and lid but without water seal		36.4	26.7
Pit latrine with slab and flap but without water seal		9.1	6.7
Feces flow into another /unknown place through pipe when water is flowed or flushed		9.1	6.7
Not having latrine		9.1	6.7
N	4	11	15

Table 114: Percentage distribution of school by status of having hand washing place within latrine

Status of hand washing place	Primary school	Junior to Secondary school	All
Yes	100.0	63.6	73.3
No		27.3	20.0
Not having latrine		9.1	6.7
N	4	11	15

Table 115: Percentage distribution of hand washing place within latrine in school by status of having soap

Status of having soap	Primary school	Junior to Secondary school	All
Yes	75.0	42.9	54.5
No	25.0	57.1	45.5
N	4	7	11

Table 116: Percentage distribution of school by status of having separate latrine for the male and female students

Status of having separate latrine	Primary school	Junior to Secondary school	All
Yes	25.0	45.5	40.0
No	75.0	45.5	53.3
Not having latrine		9.1	6.7
N	4	11	15

Table 117: Percentage distribution of school by condition of urinal

Status of	Primary school	Junior to Secondary school	All
Yes		18.2	13.3
No	100.0	72.7	80.0
Not having latrine		9.1	6.7
N	4	11	15

Table 118: Average number of latrine for students in school

	Primary school	Junior to Secondary school	All
	1.00	1.91	1.67
N	4	11	15

Table 119: Percentage distribution of school by status of having identification mark for male and female students at the entrance of latrines

Status of having identification mark	Primary school	Junior to Secondary school	All
Yes	100.0	60.0	66.7
No	-	40.0	33.3
N	1	5	6

Table 120: Percentage distribution of school by free access to latrine

	Primary school	Junior to Secondary school	All
All were opened	100.0	90.9	93.3
Not having latrine		9.1	6.7
N	4	11	15

Table 121: Percentage distribution of school by status of cleanliness of latrine

Status of cleanliness	Primary school	Junior to Secondary school	All
Yes	100.0	63.6	73.3
No		27.3	20.0
Not having latrine		9.1	6.7
N	4	11	15

Table 122: Percentage distribution of school by status of physical condition of the pan/platform

Status of physical condition	Primary school	Junior to Secondary school	All
Broken			
Not broken	100.0	90.9	93.3
Not having latrine		9.1	6.7
N	4	11	15

Table 123: Percentage distribution of school by status of having latrine for the disabled students and staff

Status of having latrine	Primary school	Junior to Secondary school	All
Yes		9.1	6.7
No	100.0	81.8	86.7
Not having latrine		9.1	6.7
N	4	11	15

Table 124: Average distance of the place of washing hands from the latrine for the students

	Primary school	Junior to Secondary school	All
Average distance (in feet)	0.0	3.5	2.5
N	4	10	14

Table 125: Average distance of the latrine from school building

Average distance (in feet)	Primary school	Junior to Secondary school	All
Latrine for male students	.00	41.40	34.50
n	1	5	6
Latrine for female students	.00	41.40	34.50
n	1	5	6
Latrine for both students	28.33	7.00	15.00
n	3	5	8

Table 126: Percentage distribution of school by status of privacy system for using latrine

Privacy system	Primary school	Junior to Secondary school	All
Having well fitting doors	100.0	81.8	86.7
The doors reached at the lower level of the floor		9.1	6.7
Doors can be closed from inside	100.0	18.2	40.0
Not having latrine		9.1	6.7
N	4	11	15

Table 127: Average number of latrines those could be used with privacy

	Primary school	Junior to Secondary school	All
Average number of latrine	2.0	1.91	1.93
N	4	11	15

Table 128: Percentage distribution of school by having a system to lock door of latrine from outside

Status of having system of locking up	Primary school	Junior to Secondary school	All
Yes	75.0	72.7	73.3
No	25.0	18.2	20.0
Not having latrine		9.1	6.7
N	4	11	15

Table 129: Percentage distribution of school by status of the path toward the latrine

Status of the path	Primary school	Junior to Secondary school	All
Safe & easy to walk	100.0	81.8	86.7
Unsafe & not easy to walk		9.1	6.7
Not having latrine		9.1	6.7
N	4	11	15

Table 130: Percentage distribution of school by status of having urinal for the students

Status of having urinary	Primary school	Junior to Secondary school	All
Yes	50.0	27.3	33.3
No	50.0	72.7	66.7
N	4	11	15

Table 131: Average number of urinal for the students in school

Average number of urinary	Primary school	Junior to Secondary school	All
For students	1.0	0.4	0.5
N	4	11	15

Table 132: Percentage distribution of school by status of cleanliness of the urinal

Status of cleanliness	Primary school	Junior to Secondary school	All

Yes	25.0	18.2	20.0
No	25.0	9.1	13.3
Not applicable	50.0	72.7	66.7
N	4	11	15

Table 133: Percentage distribution of school by status of having place to change cloth used at menstrual period

Status of having place	Primary school	Junior to Secondary school	All
Yes			
No	100.0	100.0	100.0
N	4	11	15

Table 134: Percentage distribution of school by status of having drainage system for removing out the rain water

Status of having drainage system	Primary school	Junior to Secondary school	All
Yes		18.2	13.3
No	100.0	81.8	86.7
N	4	11	15

Table 135: Percentage distribution of school by types of drainage system

Types of drainage system	Primary school	Junior to Secondary school	All
Packa and covered		18.2	13.3
Not applicable	100.0	81.8	86.7
N (applicable)	4	11	15

Table 136: Percentage distribution of school by availability of waste bucket in school for deposal of garbage/rubbish

Status of having bucket	Primary school	Junior to Secondary school	All
Having dustbin in every classroom	25.0	18.2	20.0
Dustbin having dustbin in some classrooms	25.0	36.4	33.3
Having latrine in some places	25.0	18.2	20.0
Nowhere any dustbin	25.0	27.3	26.7
N	4	11	15

Table 137: Percentage distribution of school by the status of size of the bucket

Status of suitability	Primary school	Junior to Secondary school	All
Yes	25.0	54.5	46.7
No	50.0	18.2	26.7
Not applicable	25.0	27.3	26.7
N	4	11	15

Table 138: Percentage distribution of school by status of having any garbage cart/car in *school*

Status of having garbage cart/car	Primary school	Junior to Secondary school	All
Yes		18.2	13.3

No	100.0	81.8	86.7
N	4	11	15

Table 139: Percentage distribution of school by status of having any specific arrangement for disposal of solid waste

Status of having arrangement	Primary school	Junior to Secondary school	All
Yes	25.0	18.2	20.0
No	75.0	81.8	80.0
N	4	11	15

Table 140: Percentage distribution of school by type of specific arrangement for disposal of solid waste

Types	Primary school	Junior to Secondary school	All
Pit/hole		9.1	6.7
Behind/beside the school building/	25.0		6.7
Ditch, pond, canal, river etc.		9.1	6.7
Not applicable	75.0	81.8	80.0
N	4	11	15

Table 141: Percentage distribution of school by mode of disposal of school garbage/rubbish

Modes	Primary school	Junior to Secondary school	All
Burnt	50.0	36.4	40.0
Disposed in a little far away	25.0	36.4	33.3
Taken by the municipality		9.1	6.7
Disposed into canal/ditch/drain nearby	25.0	9.1	13.3
Done nothing		9.1	6.7
N	4	11	15

Table 142: Percentage distribution of school by status of cleanliness of the class room

Status of cleanliness of classroom	Primary school	Junior to Secondary school	All
Clean	100.0	90.9	93.3
Presence of dust/piece of paper/remains of food/spider web		9.1	6.7
N	4	11	15

Table 143: Percentage distribution of school by status of cleanliness of the school premises

Status of cleanliness of school premises	Primary school	Junior to Secondary school	All
Clean	75.0	72.7	73.3
Presence of dirt around school premises	25.0	27.3	26.7
N	4	11	15

ANNEX: 02

Data Collection Instruments (DCIs)

HH ID				

Baseline Survey of WASH for community development in Banglabazar, Gazipur

Data Collection Instrument 1: Interview of female members of household

Availability of safe water and using hygienic latrines are considered as pre-conditions for a healthy and improved living. Similarly, following hygienic rules is also an important matter in this respect as one of the reasons behind human bodies get infected by diseases is not following the appropriate hygienic rules. Presently a project entitled – "WASH for community development in Banglabazar, Gazipur" is being implemented in your area through WaterAid Bangladesh with the joint initiative of H&M Bangladesh, Mohammadi Group, UN Women, UNDP, Solidariate Centre, Warwick University, and University of Dhaka. In this respect, Human Development Research Centre (HDRC) is conducting a research work to assess the baseline situation of the project. As a part of the research work, information is being collected from your area on availability of safe water, hygienic sanitation system, and current status of environmental cleanliness that will help in designing, implantation, and impact evaluation of the project.

Regarding this, we wish to collect information from your household on current socio-economic situation, availability of safe water, hygienic sanitation system, and environmental cleanliness. We also want to observe the source of water, water preservation system, type of latrines, environmental cleanliness and other related issues in your household. We may need an hour to complete these tasks of collection of data and observation of the related situation. We want to collect the data at your convenient time. And if needed, we will come for it on another time. We want to assure you that the information on your household will not be disclosed anywhere to protect the honor of you/your household. Rather, the participation of your household will help us in assessing the situation of safe water, hygienic sanitation system, and environmental cleanliness of this area which is important for the successful implementation of the project of "WASH for community development in Banglabazar, Gazipur". If you agree, we can start the interview.

Study undertaken for

WaterAid

WaterAid, Banani, Dhaka, Bangladesh

Study Conducted by

HDRC Human Development Research Centre
humane development through research and action

Road # 8, House #5, Mohammadia Housing Society,
Mohammadpur, Dhaka –1207, Bangladesh
Phone: (880 2) 8116972, 8157621, Fax: (880 2) 8157620
E-mail: info@hdrc-bd.com, Website: www.hdrc-bd.com

March, 2017

Interview Starting time: ..... Interview ending time: .....

Identification of the Respondent

1 Name of the Respondent:
2 Gender : Male =1, Female = 2
3 Age..... Years
4 Mobile Number:
5 Father's/Husband's Name:
6 Mother's Name:
7 Cluster/ Slum's Name:
8 Cluster Number
9 Ward Number

Check in Details – to be filled in by information collector**.**
I have checked this form completely and ensured that answers for all questions have been provided and necessary information have been recorded correctly and properly.

Officials	***Name***	***Date***
Interviewer		...../03/2017
Supervisor		...../03/2017
Quality Control Officer		...../03/2017

Instructions: Please encircle the answer or the code of the questions mentioned below carefully and properly that seems most consistent to you.

SECTION 1: BACKGROUND INFORMATION

Sl.	Questions	Answers	Code	Skips
101.	Educational Qualification	Illiterate/can write the name only/ Didn't attend school	1	
		Can read and write only	2	
		Non-formal education	3	
		Attended Primary	4	
		Passed Primary	5	
		Attended Secondary	6	
		Passed Secondary	7	
		Attended Higher Secondary	8	
		Passed Higher Secondary	9	
		Attended BA/BSc/BCom	10	
		Passed BA/BSc/BCom	11	
		Above BA/BSc/BCom	12	
102.	Marital status	Unmarried	1	
		Currently married	2	
		Widow/widower	3	
		Divorced	4	
		Separated	5	
		Others (Please specify)……	99	
103.	Type of room you are living.	Pacca	1	
		Semi-pacca	2	
		House made by tin	3	

Sl.	Questions	Answers	Code	Skips
		Wall made by bamboo/mud	4	
		Bamboo fence, tin roof	5	
		Polythene/ bamboo roof	6	
		Floor made by mud/sand	7	
		Floor made by bricks/cement	8	
		Others (Please specify)……	99	
104.	How/with whom do you live?	Alone in own house	1	
		With husband/wife and other family members	2	
		With husband/wife in own house	3	
		With husband/wife in rented house	4	
		Alone in rented house	5	
		Constructed house on other's land	6	
		With others in rented Mess	7	
		With only husband/ wife as sublet/ paying guest	8	
		With relatives in rented house	9	
		In garment's quarter	10	
		Others (Please specify)……	99	
105.	Do you have electricity in your house?	Yes	1	
		No	2	
106.	How do you pass your leisure time? (multiple answers)	Watching television	1	
		Roaming	2	109
		Hang out with friends of	3	
		Playing card	4	
		Watching cinema	5	
		Searching job	6	
		Sleeping	7	
		Others (Please specify)……	99	
107.	Which channel do you watch most?	……..Channel		
108.	What type of programmes do you watch most?	Bangladeshi drama/serial	1	
		Bangladeshi cinema	2	
		Indian bangla drama/serial	3	
		Indian bangla cinema	4	
		Hindi drama/serial	5	
		Hindi cinema	6	
		Bangla reality show	7	
		Hindi reality show	8	
		Local dish channel	9	
		Others (Please specify)……	99	
109.	How do you spend time in weekends? (multiple answers)	Watching television	1	
		Washing cloth	2	
		Roaming	3	
		Hang out with friends of	4	
		Going to village home	5	
		Playing card	6	
		Watching cinema	7	
		Searching job	8	
		Sleeping	9	

Sl.	Questions	Answers	Code	Skips
		Others (Please specify)……	99	
110.	Do you have mobile phone?	Yes	1	
		No	2	
111.	**Observe** Which company's mobile phone do you use?	Nokia	1	
		Samsung	2	
		Symphony	3	
		Walton	4	
		Microsoft	5	
		Others (Please specify)……	99	
112.	Is it a smart phone?	Yes	1	
		No	2	
113.	Do you take mobile phone wherever you go?	Yes	1	
		No	2	
114.	For which tasks do you use your mobile phone? (multiple answers)	Talking	1	
		Sending SMS	2	
		Taking Photos	3	
		Mobile banking	4	
		Listening music	5	
		Watching serial	6	
		Watching cinema	7	
		Playing game	8	
		Facebook	9	
		Skype	10	
		Imo	11	
		Internet	12	
		Viber	13	
		Sports news	14	
		Others (Please specify)……	99	

115	How much did you spend in last month in different sectors? (Keep the code/sector blank if there were no cost)	*Sl.*	*Items*	*Amount*	
		1	Food		
		2	Clothes		
		3	house- fare		
		4	Education		
		5	Health		
		6	Transportation		
		7	Electricity bill		
		8	Gas bill/ firewood		
		9	Water bill/cost		
		10	latrine		
		11	waste removal		
		12	Betel leaf-betel nut		
		13	Smoking/ Gul (a chewing tobacco product)		
		14	Send to home		
		15	Tiffin		
		16	Savings		
		17	Cosmetics		
		18	Entertainment		
		19	mobile cost		
		20	credit repay		
		21	Others (Please specify)……		

116	How much did you/your family earn in last month?	1	From salary		
		2	Wages (Tk.)		
		3	Wages (from food)		
		4	From overtime		
		5	Rent: room, shop		
		6	From rent of van, rickshaw, auto-rickshaw		
		7	From grocery store/Small business		
		8	Peddler/Hawker		
		9	Cottage industry/ handicrafts		
		10	Pensions		
		11	Foreign remittance		
		12	Gifts		
		13	Poultry rearing		
		14	Others (Please specify)……		
117	Do you have any savings in your household currently?	Yes		1	
		No		2	→201
118.	What is the amount of the saving currently?	Taka …….			
		Don't know		1	
		Don't want to answer		2	

SECTION 2: INFORMATION on WATER SUPPLY

Sl.	Questions	Answers	Code	Skips
201.	What is the source of your drinking water? (Multiple answers)	Water from supply (inside the house)	1	
		Water from supply (outside the house)	*2*	
		Deep Tube-Well	3	
		Shallow tube well (without any sign)	4	
		Tube wells (marked in green)	5	
		Tube wells (marked in red)	6	
		Water well with cover	7	
		Water well without cover	8	
		Rain water	9	
		Pond / Ditch water	10	
		Purchased water	11	
		Others (Please specify)……	99	
202.	What is the <u>main</u> source of your drinking water?	Water from supply (inside the house)	1	
		Water from supply (outside the house)	*2*	
		Deep Tube-Well	3	
		Shallow tube well (without any sign)	4	
		Tube wells (marked in green)	5	
		Tube wells (marked in red)	6	
		Water well with cover	7	
		Water well without cover	8	
		Rain water	9	
		Pond / Ditch water	10	
		Purchased water	11	
		Others (Please specify)……	99	
203.		Yes	1	→ 206

Sl.	Questions	Answers	Code	Skips
	Is the source of your drinking water usable throughout the year?	No	2	
204.	If no, for how many months in a year is it usable?	One month	1	
		Two months	2	
		Three months	3	
		Four months	4	
		Five months	5	
		Six months	6	
		More than six months	7	
		Often not usable	8	
205.	What is the reason if the source of your drinking water is not usable throughout the year?	Non-availability of water	1	
		Drowned into water	2	
		Others (Please specify)……	99	
206.	What is the quality of the drinking water that you take most of the time? (Multiple answers)	Transparent	1	
		Dirty /smoky	2	
		Odorless	3	
		Tasteless	4	
		Foul smelling/Bad odor	5	
		Metallic or unacceptable taste	6	
		Salty water	7	
		Sweet/ bitter in taste	8	
		Others (Please specify)……	99	
207.	For how many hours in a day do you get water from the main source of your drinking water? (Write 24, if water is available all the time)	…… Hours		
208.	Is there any scope to avail 20 liters of water per person (for drinking, cooking, washing and personal use) for the members of your household from the main source of your drinking water?	Yes	1	
		No	2	
209.	Do other people except your HH members collect water from the main source of your drinking water?	Yes	1	
		No	2	→211
210.	If yes, how many of the households including yours one, collect water from that source?	Number of HH ……..		
211.	Who is the owner of the source of your drinking water?	Own	1	
		Homeowner	2	
		Neighbor	3	
		Joint ownership	4	
		Government /WASA	5	
		NGO established	6	
		Others (Please specify)……	99	
212.	Do you have to pay anything to avail water from this source?	Yes	1	
		No	2	→214
213.	If yes, how much did you have to pay?	Taka …….		

Sl.	Questions	Answers	Code	Skips
214.	Did you have to repair the source of drinking water in last one year?	Yes	1	
		No	2	→217
215.	If yes, what was the reason of repairing it?	……		
216.	How much did you have to pay for repairing it?	Taka …….		
217.	Do you have to pay anything for the maintenance of the source of your drinking water?	Yes	1	
		No	2	→219
		Don't know/Can't say	3	
218.	How much do you have to pay per month for such maintenance?	Taka …….		
219.	Do you collect and then drink water directly from the source?	Yes	1	
		No	2	
		Sometimes	3	
220.	How do you purify the water? (Multiple Answers)	Don't purify	1	
		By boiling	2	
		By tablet	3	
		By mixing Bleaching powder	4	
		With Alum	5	
		Through filter	6	
		By straining through cloth	7	
		By sedimentation of water	8	
		Others (Please specify)……	99	
221.	How much time do you need to go to the source of water, stand in the queue for collecting water, and return back?	…….. Minutes		
222.	How far (in feet) is the source of water from your house? (Write '0', if the source of water is inside the house)	…… feet		
		Don't know/Can't say	99	
223.	Who collects the required water most of the time for using in the HH? (Circle only one answer)	Female members of the HH	1	
		Male members of the HH	2	
		Adolescent girls (10-18)	3	
		Adolescent boys (10-18)	4	
		Purchased water delivered at home	5	
		Home maids	6	
		Others (Please specify)……	99	
224.	Can you collect water from this source at any time?	Yes	1	→226
		No	2	
225.	What are the problems you face while collecting water?	Lack of supply	1	
		Too much gathering	2	
		The owner does not allow	3	
		Lots of disagreements/quarrels	4	
		Institutional, water is not available when it is closed	5	
		Water is not provided because money for repairing is not given	6	
		Lack of security	7	
		Others (Please specify)……	99	
226.		Yes, always	1	

Sl.	Questions	Answers	Code	Skips
	Do you wash the water pot with drinking water while collecting water?	Yes, sometimes	2	
		No	3	
		Don't know/Can't say	4	
227.	Do you cover the water pot after collecting water and bringing it?	Yes, always	1	
		Yes, sometimes	2	
		No	3	
		Don't know/Can't say	4	
228.	**After observation** Is the water pot being covered while being preserved?	Yes	1	
		No	2	
		Not applicable/Don't preserve water	3	
229.	Observe Where is the water pot for preserving drinking water being kept?	On the floor	1	
		At an elevated place	2	
		Not applicable/Don't preserve water	3	
230.	Request the respondent to provide you a glass of water and observe what she does while giving it. (Multiple Answers)	Squeezed finger into the glass while pouring water	1	
		Did not squeeze finger into the glass while pouring water	2	
		Poured water by dipping the finger into the water	3	
		Poured water but did not dip the finger into the water	4	
		Held the upper edge of glass by hand/fingers	5	
		Others (Please specify)……	99	
231.	What is the source of water for cooking? (Multiple Answers)	Water from supply (inside the house)	1	
		Water from supply (outside the house)	*2*	
		Deep Tube-Well	3	
		Shallow tube well (without any sign)	4	
		Tube wells (marked in green)	5	
		Tube wells (marked in red)	6	
		Water well with cover	7	
		Water well without cover	8	
		Rain water	9	
		Pond / Ditch water	10	
		Purchased water	11	
		Others (Please specify)……	99	
232.	What is the source of water for bathing and washing clothes? (Multiple Answers)	Water from supply (inside the house)	1	
		Water from supply (outside the house)	*2*	
		Deep Tube-Well	3	
		Shallow tube well (without any sign)	4	
		Tube wells (marked in green)	5	
		Tube wells (marked in red)	6	
		Water well with cover	7	
		Water well without cover	8	
		Rain water	9	
		Pond / Ditch water	10	
		Purchased water	11	
		Others (Please specify)……	99	

Sl.	Questions	Answers	Code	Skips
233.	What is the source of water for washing cooking utensils, pots and dishes? (Multiple Answers)	Water from supply (inside the house)	1	
		Water from supply (outside the house)	*2*	
		Deep Tube-Well	3	
		Shallow tube well (without any sign)	4	
		Tube wells (marked in green)	5	
		Tube wells (marked in red)	6	
		Water well with cover	7	
		Water well without cover	8	
		Rain water	9	
		Pond / Ditch water	10	
		Purchased water	11	
		Others (Please specify)……	99	
234.	In which part of the day you wash your hands with water and soap? **Do not Prompt** (Multiple Answers)	Before eating food	1	
		Before preparing/ cooking food	2	
		After defecation	3	
		After baby's defecation	4	
		Before and after feeding baby	5	
		Before serving food	6	
		After taking care of livestock	7	
		Others (Please specify)……	99	
235.	In which times do you think hands should be washed with water and soap? **Do not Prompt** (Multiple Answers)	Before eating food	1	
		Before preparing/ cooking food	2	
		After defecation	3	
		After baby's defecation	4	
		Before and after feeding baby	5	
		Before serving food	6	
		After taking care of livestock	7	
		Others (Please specify)……	99	
236.	What do you understand by safe water? **Do not Prompt** (Multiple Answers)	Transparent	1	
		Odorless	2	
		Tasteless	3	
		Foul smelling/Bad odor	4	
		Free from excessive iron	5	
		Arsenic-free	6	
		Free from harmful germs	7	
		Others (Please specify)……	99	

From Q. 237 to Q. 245 – please observe first and then encircle the code.

If the source of water is ***tube well***, then observe the following issues and then encircle the answer.

Sl.	Questions	Answers	Code	Skips
237.	Is there any latrine within 30 feet of the tube well?	Yes	1	
		No	2	
238.	Is the base of the tube well so dirty that the mosquitoes and other insects can breed easily?	Yes	1	
		No	2	
239.	Is there any breakage around the platform of the tube well through which water lines may cross-link with garbage?	Yes	1	
		No	2	
		No platform	3	→ 242
240.	Is water logged over the platform of the tube well?	Yes	1	
		No	2	

241.	Is there any breakage in the platform of the tube well?	Yes	1	
		No	2	
242.	Is the base of the tube well seems weak?	Yes	1	
		No	2	

If the source of water is ***tap***, then observe the following issues and then encircle the answer.

Sl.	Questions	Answers	Code	Skips
243.	Is there any breakage around the tap through which water lines may cross-link with garbage?	Yes	1	
		No	2	
244.	Is water logged over the platform of the tap?	Yes	1	
		No	2	
		No platform	3	→ 301
245.	Is there any breakage/cracks in the platform of the tap?	Yes	1	
		No	2	
		No platform	3	

SECTION 3: SANITATION AND HYGIENITY

Sl.	Questions	Answers	Code	Skips
301.	**Observe** What type of latrine is being used in the household?	Hygienic/improved latrines	1	
		Water sealed latrine that is connected to the Septic tanks	2	
		Water sealed latrine that is connected to the Sewerage lines	3	
		Water sealed latrine that is connected to the pit latrine with slab	4	
		Pit latrine with lid having slabs	5	
		Pit latrine without seal	6	
		Pit latrine but pit is broken	7	
		Pit latrine with slabs	8	
		Improved pit/ pit latrines with ventilation (VIP)	9	
		Composting latrine (separate chambers for defecation and urination)	10	
		Unhygienic/unimproved latrines	11	
		Any latrine whose stool pipe is open in an unknown place	12	
		Any latrine whose stool pipe is connected to a drain	13	
		Pit latrine without slabs	14	
		Pit latrine with broken slabs	15	
		Any latrine whose stool falls in a canal or drain	16	
		Hanging latrine	17	
		Latrine with installation of bucket	18	
		Open place	19	
		Others (Please specify)……	99	
302.	How far is the latrine you use from the household? (Write '0', if the latrine is inside the house)	…… feet		
303.	Is it safe for the female members to use it in the night?	Yes	1	
		No	2	
304.		Yes	1	

Sl.	Questions	Answers	Code	Skips
	Do others use this latrine except your HH members?	No	2	→ 307
305.	How many families use this latrine?	Number of families ……		
306.	How many people live in these families?	Number of family members ……		
307.	Is there any latrine that can be used by the female members only?	Yes	1	
		No	2	→ 310
308.	How many chambers are there to be used by the female members?	Number of chambers ……		
309.	How many female members in total use these chambers?	Number of female members ……		
310.	**Observe** How is the cleanliness of the latrines?	Clean	1	
		Fairly clean	2	
		Stool-urine are spreaded around the platform/slabs	3	
		Faeces have been seen in pan of latrine	4	
		Stool emission pit of pan is filled with faeces	5	
		Foul smelling/Bad odor	6	
		Others (Please specify)……	99	
311.	Who is the owner of the latrine you use?	Own	1	
		Jointly with neibour	2	
		Community latrine provided by NGO	3	
		Public latrine	4	
		Don't use latrine	5	
		Homeowner	6	
		Don't know	7	
312.	Do you think there is any problem in using it?	Yes	1	
		No	2	→ 314
313.	What kind of problems? (Multiple Answers)	Dirty/Filthy	1	
		Foul smelling/Bad odor	2	
		No door / broken door / hole in the door	3	
		Filled quickly	4	
		Security problem (for women)	5	
		Occupied by men	6	
		Need to be in hustle	7	
		Women and men need to be in queue together	8	
		Others (Please specify)……	99	
314.	Did you need to repair the latrine you use in last one year?	Yes	1	
		No	2	→ 317
315.	If yes, what was the reason the latrine needed to be repaired?	The latrine was blocked	1	
		The pit/septic tank was filled up	2	
		The platform had been broken	3	
		The door was broken/repaired	4	
		Water seal had to be repaired	5	
		Others (Please specify)……	99	
316.		Taka ……		

Sl.	Questions	Answers	Code	Skips
	How much did you have to pay for the repairing?	I did not pay anything	0	
		Don't know/Can't say	9	
317.	Do you need to pay anything for the maintenance of the latrine?	Yes	1	
		No	2	→ 319
318.	If yes, how much do you have to pay per month for such maintenance?	Taka ……		
		I do not pay anything	0	
		Don't know/Can't say	9	
319.	Is the latrine you use usable throughout the year?	Yes	1	→ 321
		No	2	
320.	If no, which parts/times of the year? **Do not Prompt** (Multiple Answers)	Always	1	
		In rainy season	2	
		In winter	3	
		Others (Please specify)……	99	
321.	Do you use sandals while going to the latrine?	Yes	1	
		No	2	
322.	Does the physically disabled member of the HH use latrine?	Yes	1	
		No	2	→ 324
		Not Applicable	3	
323.	If no, what is the reason? (Multiple Answers)	Design is not elderly friendly	1	
		Fear of falling down	2	
		located in distant / high or low place	3	
		Can not take the wheel chair inside	4	
		There is no specific collector	5	
		Others (Please specify)……	99	
324.	**Record after observation** Is there any arrangement of water inside the latrine?	Yes	1	→ 326
		No	2	
325.	**Observe** If no, is there any arrangement of washing hands within 10 steps of the latrine?	Yes	1	
		No	2	
326.	**Observe** Is there any arrangement of washing hands within 10 steps of the kitchen?	Yes	1	
		No	2	
327.	**Observe** Is there any arrangement of water and soap in that place?	Yes	1	→ 329
		No	2	
328.	If soap is not seen in the place of washing hands, then ask about the place where the soap is kept. **Do not Prompt**	Inside the latrine	1	
		Kept inside room	2	
		Outside the latrine	3	
		Not Applicable	9	
		Others (Please specify)……	99	
329.	With what do you wash your hands after defecation? **Do not Prompt**	Don't wash hands	1	
		With water only	2	
		With water and mud	3	
		With water and ash	4	
		One hand with soap and water	5	
		Two hands with soap and water	6	
		Not Applicable	9	

Sl.	Questions	Answers	Code	Skips
		Others (Please specify)……	99	

SECTION 4: WASTE DISPOSAL

Sl.	Questions	Answers	Code	Skips
401.	Where do you dispose of the garbage of your HH?	In specific place/dustbin	1	
		Here and there	2	
		In the open field	3	
		Informal sweeper takes away	4	
		Sewer/ drain/ canal	5	
		In specific pit	6	
		Collected locally	7	
		Others (Please specify)……	99	
402.	How do you remove the liquid wastes from the bathroom and kitchen?	Removed through pipe or smaller drain into the public drain	1	
		Removed through drain into the showcase pit	2	
		Removed through the drain into the canal or swamp	3	
		Others (Please specify)……	99	

SECTION 5: MANAGEMENT OF MENASTRUAL HYGEINE

Sl.	Questions	Answers	Code	Skips
501.	Which of the materials seems most suitable or best to you at the time of menstruation?	Cotton	1	
		Tissue paper	2	
		Small piece of cloth/ old cloth	3	
		Sanitary Napkin (pad)	4	
		Only panty	5	
		Not in menstruation currently	6	→ The end
		Others (Please specify)……	99	
502.	Which of the materials do you use generally at the time of menstruation?	Small piece of cloth/ old cloth	1	
		Only panty	2	
		Cotton	3	→ 506
		Tissue paper	4	
		Sanitary Napkin (pad)	5	
		Others (Please specify)……	99	
503.	With what do you generally wash the piece of cloth you use at the time of menstruation? **<u>Only one answer</u>**	With water only	1	
		With soap and water	2	
		With soap, antiseptic (dettol, savlon) and water	3	
		Others (Please specify)……	99	
504.	Where do you dry the piece of cloth you use at the time of menstruation after washing it? (Multiple Answers)	In shadow	1	
		Under sun light inside the house	2	
		Under sun light but under the cloth	3	
		Dry in such way that no one can see it	4	
		Others (Please specify)……	99	
505.	How do you maintain the piece of cloth/panty that you use at the time of menstruation till next cycle?	It is disposed of	1	
		It is kept under the bedding	2	
		It is put trunk/ box/ bag	3	
		It is kept in the almirah	4	
		It is kept in such way that no one can see it	5	
		Others (Please specify)……	99	
506.		In the garbage bin	1	

Sl.	Questions	Answers	Code	Skips
	Where do you generally dispose of the cotton/tissue paper that you use at the time of menstruation?	In the drain	2	
		In the toilet	3	
		Throw away here and there	4	
		It is buried in the ground hole	5	
		Not Applicable	9	
		Others (Please specify)……	99	
507.	What do you do with the used sanitary napkin? **<u>Only one answer</u>**	In the garbage bin	1	
		In the drain	2	
		In the toilet	3	
		Throw away here and there	4	
		Not Applicable	9	
		Others (Please specify)……	99	
508.	How much do you spend in purchasing the sanitary napkin per month?	Taka …….		
		There is no cost	0	
		Not Applicable	9	
509.	How many times do you need to change the sanitary napkin at the time of menstruation?	……. Times		
510.	Do you clean the outside part of your genital area at the time of menstruation?	Yes	1	
		No	2	→ 512
511.	How many times in a day do you clean the outside part of your genital area at the time of menstruation?	……. Times		
512.	Do you face any problem in keeping yourself clean at the time of menstruation?	Yes	1	
		No	2	→ 514
513.	We will be obliged if you can tell about the problems that you face. …… …… ……			
514.	Is there any specific arrangement in your workplace for disposal of sanitary napkin?	Yes	1	
		No	2	The end
		Not Applicable	3	→ end
515.	What do you do with the used sanitary napkin if there is no specific arrangement in the workplace?	In the garbage bin	1	
		In the drain	2	
		In the toilet	3	
		Throw away here and there	4	
		Bring that home in a bag	5	
		Others (Please specify)……	99	
516.	What do you do with the sanitary napkin after changing it while you are in the workplace?	……		
517.	How many times do you need to change the sanitary napkin/cotton/tissue paper/piece of cloth at the time of menstruation while you are in the workplace?	……. Times		→ The end

Enumerator: **Give thanks to the respondents for their invaluable time, hospitality and cooperation extended throughout the interview process. Wish them all the best in life.**

DCI-2

Baseline Survey of WASH for Community Development in Banglabazar, Gazipur

Check-list for assessment of WASH condition in Community Clinic

Time of starting the observation | | | Hours | | | Minutes

Officials	*Name*	*Signature*	*Date*
Interviewer			
Supervisor			
QCO			

Study Undertaken for

WaterAid Bangladesh

Study Conducted by

Human Development Research Centre
House 5, Road 8, Mohammadia Housing Society,
Mohammadpur, Dhaka 1207
Phone: (88 02) 8116972, 8157621, Fax: (88 02) 8157620
Email: hdrc.bd@gmail.com, info@hdrc-bd.com
Website: www.hdrc-bd.com

March 2017

General information about community clinic		
Sl No.	**Information**	**Answer**
A1	Name of the community clinic	.....
A2	ID number of the community clinic	..... ……
A3	Name of the community health care provider	.....
A4	Location of the community clinic	Cluster No.....
A5	Year of establishment	
A6	Number of others service provider	Male..... Female .....
A7	Average number of patients daily	Male..... Female..... Children.....
A8	How many children aged less than 5 years took treatment for diarrhea in last week? (Record by observing the patient's record book)	Number.....

SECTION 1: OBSERVATION FOR WATER SUPPLY

Sl.	Issue	Observation note		Code	Skips
101	Is there any source of water supply?	Yes		1	
		No		2 →	201
102	What is the source of drinking water?	*Type*	*Number*		
		Water supplied through tap or pipe		1	
		Deep tube well (more than 500 feet)		2	
		Shallow tube well (less than 500 feet) without any mark		3	
		Shallow tube well (less than 500 feet) with green mark		4	
		Shallow tube well (less than 500 feet) with red mark		5	
		Tara pump		6	
		Rain water		7	
		Well with ring (reserved)		8	
		Well with ring (not reserved)		9	
		Any surface water (rivers, ponds, canals, etc.)		10	
		Filter water		11	
		Purchased water		12	
		Others (Please specify)……		99	
103	Number of active source of drinking water. (Please press the tube well or open the tap to observe whether water flows out or not)	Types (Take codes from 102)	number		
		…… Code	☐		
		…… Code	☐		
		…… Code	☐		
104	Number of inactive or broken source of drinking water.	Types (Take codes from 102)	number		
		…… Code	☐		
		…… Code	☐		
		…… Code	☐		
105	What is the reason of being inactive?	Machine of tap or pipe is damaged		0	
		There is no flows out of water in the tap or pipes		1	
		There is no upper part of tube well		2	
		There is no handle in tube well		3	
		Tube well water dirty and odorous		4	
		Spiner of tube well is damaged		5	
		There is no flows out of water in tube well		6	
		Don’t know		7	
		Others (please specify) ……..……		9	
106	Is there any separate source for the male and female to collect water?	Yes		1	
		No		2	

Sl.	Issue	Observation note			Code	Skips
107	Are utensils (glass, cup, and mug) for drinking water being used? (Yes=1, No=2, Not applicable=3)	Male	Female	Both		
		1 2 3	1 2 3	1 2 3		
108	Quality of the drinking water. (Multiple Answers)	Transparent			1	
		Odorless			2	
		Tasteless			3	
		Turbid			4	

		Metallic/saline	5	
		Foul smelling/Bad odor	6	
109	Distance of source of water from latrine. (measurement should be taken from soak well if there is a sanitary tank, and from pit if there is a pit latrine)	……. ……. feet ……. ……. feet ……. ……. feet		
110	Is there any platform if the source of water is tube well?	Yes	1	
		No	2 →	114
		Not applicable	9 →	114
111	If yes, how many of the sources of water have platforms?	Number of sources with platform / Number of sources without platform		
112	Is the platform broken?	Yes	1	
		No	2 →	114
113	If yes, how many of the platforms are broken?	Number of broken platform / Number of good platform		
114	Is water logged around the platform of the source of water?	Yes	1	
		No	2	
115	Is the platform/place near the source of water clean? (Take the animal dung and garbage into consideration)	Yes	1	
		No	2	
116	Is there any drainage system?	Yes	1	
		No	2 →	201
117	How is the drainage system?	Pucka drain that is connected to the main drain or soak pit through pipe	1	
		Though Pucka drain/pipe exists, but that is not connected to the main drain or soak pit	2	
		Drain made by mud (kacha), but is connected to the main drain or soak pit	3	
		Drain made by mud (kacha), but is not connected to the main drain or soak pit	4	
		Sewer/canal/pool	5	
		Broken drain	6	
		Others (Please specify)……	99	

SECTION 2: OBSERVATION FOR HAND WASHING PLACE(S)

Sl.	Issue	Observation note	Code	Skips
201	Is there any place for washing hands?	Yes	1	
		No	2 →	301
202	Is there any system of supplying water in the place of washing hands? (Please press the tube well or open the tap to observe whether water flows out or not. If there is any water bucket or other container, observe it to see whether water is there or not.)	Yes	1	
		No	2	
203	Is there soap, and detergents in the place of washing hands?	Bar soap	1	
		Detergent (powder/liquid)	2	
		Nothing	4	
204	Is there any separate place for service provider for washing hands?	Yes	1	
		No	2	
205		Yes	1	

	Is there soap and detergents for service provider in the place of washing hands?	No	2	
206	If there is water bucket, or other container, please observe whether there is jug or mug with handle.	Yes	1	
		No	2	
		Not applicable	9	
207	Is the place closer to latrine? (Distance is 10 steps or less)	Yes	1	
		No	2	
208	Is water logged around the place of washing hands?	Yes	1	
		No	2	
209	Is the place of washing hands/platform clean? (Take the animal dung and garbage into consideration)	Yes	1	
		No	2	
210	Is there any existence of drainage system?	Yes	1	
		No	2 →	301
211	What is the type of the drainage system?	Pucka drain that is connected to the main drain or soak pit through pipe	1	
		Though Pucka drain/pipe exists, but that is not connected to the main drain or soak pit	2	
		Drain made by mud (kacha), but is connected to the main drain or soak pit	3	
		Drain made by mud (kacha), but is not connected to the main drain or soak pit	4	
		Sewer/canal/pool	5	
		Broken drain	6	
		Others (Please specify)……	99	

SECTION 3: OBSERVATION FOR SANITATION AND WASTE DISPOSAL

Sl.	Issue	Observation note	Code	Skips
301	Is there any latrine in clinic?	Yes	1	
		No	2 →	317
302	What is the type of the latrine? Where does the waste go after flushing? Take permission to monitor it.	Feces fall into the sewerage line through pipe when water is flowed or flushed	1	
		Feces are deposited in the septic tank through pipe when water is flowed or flushed	2	
		Feces flow into another /unknown place through pipe when water is flowed or flushed	3	
		Pit latrine with slab and water seal	4	
		Pit latrine without slab and water seal	5	
		Pit latrine but broken	6	
		Ventilated improved pit latrine (VIP)	7	
		Pit latrine with slab and cover but no water seal	8	
		Pit latrine with slab but no cover and water seal	9	
		Pit latrine with slab and flap but no water seal	10	
		Pit latrine without slab/open pit	11	
		Bucket latrine	12	
		Hanging latrine	13	
		No arrangement of latrines, open defecation	14	
		Others (Please specify)……	99	
303	Is there any separate latrine for men and women?	Yes	1	
		No	2	

Sl.	Issue	Observation note			Code	Skips
304	Is there another latrine for the staffs?	Yes			1	
		No			2	
305	Is there any separate latrine for men and women staffs?	Yes			1	
		No			2	
306	Is there any system to identify the latrines for men and women?	Yes			1	
		No			2	
307	Are the latrines open for using?	All were opened			1	
		All			2	
		Staffs were closed			3	
		Some were closed			4	
		Others (Please specify)……			99	
308	Are the latrines clean? (Are feces, dirt or insects seen inside or near to the pan?) (Yes=1, No=2, Not applicable=3)	Latrines for men	Latrines for women	Latrines for both		
		1 2 3	1 2 3	1 2 3		
309	Is the pan or platform broken or cracked? (Yes=1, No=2, Not applicable=3)	1 2 3	1 2 3	1 2 3		
310	Is there any latrine for the disabled men, women, and staffs? (Located in the ground level, having wide door for access of wheel chair, having system of keeping hands etc.)	Yes			1	
		No			2	
311	What is the distance of the place of washing hands from the latrine?	Latrines for men	Latrines for women	Latrines for both		
		.....Feet	..... Feet	..... Feet		
312	How far is latrine from the clinic building?	.....Feet	..... Feet	..... Feet		
313	How is the privacy of using latrines? (multiple responses)	Have doors that are shut properly			1	
		The door is extended to the floor level length			2	
		The door can be shut from inside			3	
		Separated			4	
314	How many latrines can be used by maintain privacy?	Number.....				
315	Is there any system of locking up the latrine door from outside? (So that it cannot be used after the clinic is closed)	Yes			1	
		No			2	
316	How is the path of going to latrine?	Safe and easy to walk			1	
		Unsafe and Not easy to walk			2	
317	Is there good drainage system in clinic for removing out the rain water?	Yes			1	
		No			2→	319
318	How is the drainage system?	Packa and covered			1	
		Packa but open			2	
		Kacha and open			3	
		No drain			4	
		Others (Please specify)……			99	
319	Is there any arrangement of bucket/basket or other materials like that in clinic for depositing garbage?	Every room has dustbins			1	
		Some of the rooms have dustbins			2	
		There is only one dustbin			3	
		No dustbins anywhere			4→	321
		Others (Please specify)……			99	
320		Yes			1	

Sl.	Issue	Observation note	Code	Skips
	If there is bucket/basket for depositing garbage of the clinic, is the size suitable to hold all the garbage?	No	2	
321	Is there any specific arrangement in clinic for disposal of solid waste?	Yes	1	
		No	2	→ 323
322	What is the type of that specific arrangement?	Pit	1	
		Dram	2	
		Beside the road	3	
		In a corner of the clinic	4	
		Behind / beside the clinic building	5	
		Drain	6	
		Ditches, ponds, canals, rivers, etc.	7	
		Others (Please specify)……	99	
323	Is the place of disposal of garbage enclosed with fence?	Yes	1	
		No	2	
324	What is done with the clinic garbage?	Burned	1	
		Buried	2	
		Thrown away in neighboring canals/ditches/drains	3	
		Thrown away	4	
		Taken away by municipality	5	
		Nothing	6	

SECTION 4: OBSERVATION FOR CLEANLINESS OF CLINIC COMPOUND

Sl.	Issue	Observation note	Code	Skips
401	How clean is the rooms of clinic?	Clean	1	
		Dust/torn paper/food scraps/ spider web	2	
402	How clean is the clinic compound/ courtyard?	Clean	1	
		Dirt/garbage is scattered here and there	2	
		Animal dung and garbage are there	3	
		Human feces are there	4	
		Sharp objects are there	5	
		Other solid waste are there	6	

Ending time of the observation

Hours	Minutes

Baseline Survey of WASH for community development in Banglabazar, Gazipur

Data Collection Instrument 3: Check-list for assessment of WASH condition in school

Date of observation | | | | | | | | |

Time of starting the observation | | Hours | | Minutes

Officials	*Name*	*Signature*	*Date*
Interviewer			
Supervisor			
QCO			

Study undertaken for

WaterAid

WaterAid, Banani, Dhaka, Bangladesh

Study Conducted by

HDRC Human Development Research Centre
humane development through research and action

Road # 8, House #5, Mohammadia Housing Society,
Mohammadpur, Dhaka –1207, Bangladesh
Phone: (880 2) 8116972, 8157621, Fax: (880 2) 8157620
E-mail: info@hdrc-bd.com, Website: www.hdrc-bd.com

March, 2017

General information about School			
Sl.	**Information**	**Answers**	**Code**
A1	Name of School	……	
A2	ID number of school	……	
A3	Type of school (in terms of gender)	School for male student	1
		School for female student	2
		Co-education School	3
A4	Type of school (in terms of academic criteria)	Government School	
		Pre-primary School	1
		Primary School	2
		Secondary school	3
		Non-government School	
		Registered Primary School	4
		Non-registered Primary School	5
		Secondary School	6
		Ebtedayee Madrasah	7
		Dakhil Madrasah	8
A5	Name of the Head Teacher	……	
A6	Location of school	Cluster number ……	
A7	Year of establishment	☐☐☐☐	
A8	Number of teachers	Male ……	
		Female ……	
A9	Number of students	Male students ……	
		Female students ……	
A10	Number of shifts	One	1
		two	2
		Not applicable	9
A11	Shift in between the two that highest number of students attend	……	

SECTION 1: OBSERVATION FOR WATER SUPPLY

Information on water supply in school					
Sl.	**Issue**	**Observation note**		**Code**	**Skips**
101.	Is there any source of water supply?	Yes		1	
		No		2	→201
102.	What is the source of drinking water?	***Types***	***Number***		
		Water supplied through tap or pipe		1	
		Deep tube well (more than 500 feet)		2	
		Shallow tube well (less than 500 feet) without any mark		3	
		Shallow tube well (less than 500 feet) with green mark		4	
		Shallow tube well (less than 500 feet) with red mark		5	
		Tara pump		6	
		Rain water		7	
		Well with ring (reserved)		8	
		Well with ring (not reserved)		9	
		Any surface water (rivers, ponds, canals, etc.)		10	

		Filter water		11	
		Purchased water		12	
		Others (Please specify)……		99	
103.	Number of active source of drinking water. (Please press the tube well or open the tap to observe whether water flows out or not)	Types (Take codes from 102)	***Number***		
		…… code	☐		
		…… code	☐		
104.	Is there any separate source for the male and female student to collect water?	Yes		1	
		No		2 →	106
105.	If yes, what is the type of that source?	Male students (Take codes from 102 for types)	***Number***		
		…… code	☐		
		…… code	☐		
		Female students (Take codes from 102 for types)	***Number***		
		…… code	☐		
		…… code	☐		
106.	Are utensils (glass, cup, and mug) for drinking water being used? (Yes=1, No=2, Not applicable=3)	Male students: 1 2 3	Female students: 1 2 3	Both: 1 2 3	
107.	Quality of the drinking water. (Multiple Answers)	Transparent		1	
		Inodorous		2	
		Tasteless		3	
		Turbid		4	
		Metallic/saline		5	
		Foul smelling/Bad odor		6	
108.	Is the source of water child-friendly and safe? (Multiple Answers)	The place of source of water is not slippery		1	
		If dug well, it is protected/covered		2	
		Easy to use		3	
		Can't use easily		4	
109.	Distance of source of water from latrine. (measurement should be taken from soak well if there is a sanitary tank, and from pit if there is a pit latrine)	…… feet			
		…… feet			
		…… feet			
110.	Is there any platform if the source of water is tube well?	Yes		1	
		No		2	114
		Not applicable		3	
111.	If yes, how many of the sources of water have platforms?	Number of sources with platform	Number of sources without platform		
112.	Is the platform broken?	Yes		1	
		No		2 →	114
113.	If yes, how many of the platforms are broken?	Number of broken platform	Number of good platform		
114.	Is water logged around the platform of the source of water?	Yes		1	
		No		2	
115.		Yes		1	

	Is the platform/place near the source of water clean? (Take the animal dung and garbage into consideration)	No	2	
116.	Is there any drainage system?	Yes	1	
		No	2	→ 201
117.	How is the drainage system?	Pucka drain that is connected to the main drain or soak pit through pipe	1	
		Though Pucka drain/pipe exists, but that is not connected to the main drain or soak pit	2	
		Drain made by mud (kacha), but is connected to the main drain or soak pit	3	
		Drain made by mud (kacha), but is not connected to the main drain or soak pit	4	
		Sewer/canal/pool	5	
		Broken drain	6	
		Others (Please specify)……	99	

SECTION 2: OBSERVATION FOR HAND WASHING PLACE(S)

Sl.	Issue	Observation note	Code	Skips
201.	Is there any place for washing hands?	Yes	1	
		No	2	→ 301
202.	Is there any system of supplying water in the place of washing hands? (Please press the tube well or open the tap to observe whether water flows out or not. If there is any water bucket or other container, observe it to see whether water is there or not.)	Yes	1	
		No	2	
203.	Is there soap, and detergents in the place of washing hands?	Bar soap	1	
		Detergent (powder/liquid)	2	
		Nothing	4	
204.	If there is water bucket, or other container, please observe whether there is jug or mug with handle.	Yes	1	
		No	2	
		Not applicable	9	
205.	Is the place closer to latrine? (Distance is 10 steps or less)	Yes	1	
		No	2	
206.	Is water logged around the place of washing hands?	Yes	1	
		No	2	
207.	Is the place of washing hands/platform clean? (Take the animal dung and garbage into consideration)	Yes	1	
		No	2	
208.	Is there any existence of drainage system?	Yes	1	
		No	2	→ 301
209.	What is the type of the drainage system?	Pucka drain that is connected to the main drain or soak pit through pipe	1	

Sl.	Issue	Observation note	Code	Skips
		Though Pucka drain/pipe exists, but that is not connected to the main drain or soak pit	2	
		Drain made by mud (kacha), but is connected to the main drain or soak pit	3	
		Drain made by mud (kacha), but is not connected to the main drain or soak pit	4	
		Sewer/canal/pool	5	
		Broken drain	6	
		Others (Please specify)……	99	

SECTION 3: OBSERVATION FOR SANITATION AND WASTE DISPOSAL

Sl.	Questions	Answers	Code	Skips
301.	Is there latrine in school?	Yes	1	
		No	2	→ 315
302.	What is the type of the latrine? Where does the waste go after flushing? Take permission to monitor it.	Feces fall into the sewerage line through pipe when water is flowed or flushed	1	
		Feces are deposited in the septic tank through pipe when water is flowed or flushed	2	
		Feces flow into another /unknown place through pipe when water is flowed or flushed	3	
		Pit latrine with slab and water seal	4	
		Pit latrine without slab and water seal	5	
		Pit latrine but broken	6	
		Ventilated improved pit latrine (VIP)	7	
		Pit latrine with slab and cover but no water seal	8	
		Pit latrine with slab but no cover and water seal	9	
		Pit latrine with slab and flap but no water seal	10	
		Pit latrine without slab/open pit	11	
		Bucket latrine	12	
		Hanging latrine	13	
		No arrangement of latrines, open defecation	14	
303.	Is there any separate latrine for the male and female students?	Yes	1	
		No	2	
		Not applicable	9	
304.	What is the number of the latrines in school?	For male students	☐	
		For female students	☐	
		For both male and female students	☐	
		For male staffs	☐	
		For male students and male staffs	☐	
		For female staffs	☐	
		For female students and female staffs	☐	
			☐	
			☐	

Sl.	Questions	Answers	Code	Skips
		For male and female staffs		
		for all staffs and students		
305.	Is there any system to identify the latrines for male and female students?	Yes	1	
		No	2	
		Not applicable	9	
306.	Are the latrines open for using?	All were opened	1	
		All were closed	2	
		Latrines for the male students were closed	3	
		Latrines for the female students were closed	4	
		Latrines for both the male and female students were closed	5	
		Some were closed	6	
		Others (Please specify)……	99	
307.	Are the latrines clean? (Are feces, dirt or insects seen inside or near to the pan?) (Yes=1, No=2, Not applicable=3)	Latrines for male students: 1 2 3 / Latrines for female students: 1 2 3 / Latrines for both students: 1 2 3		
308.	Is the pan or platform broken or cracked? Yes=1, No=2	Latrines for male students: 1 2 / Latrines for female students: 1 2 / Latrines for both students: 1 2		
309.	Is there any latrine for the disabled students and staffs? (Located in the ground level, having wide door for access of wheel chair, having system of keeping hands etc.)	Yes	1	
		No	2	
310.	What is the distance of the place of washing hands from the latrine for the students?	Latrines for male students: ..... feet / Latrines for female students: ..... feet / Latrines for both students: ..... feet		
311.	How far is latrine from the school building?	Latrines for male students: ..... feet / Latrines for female students: ..... feet / Latrines for both students: ..... feet		
312.	How is the privacy of using latrines?	Have doors that are shut properly	1	
		The door is extended to the floor level length	2	
		The door can be shut from inside	3	
		Separated	4	
313.	How many latrines can be used by maintain privacy?	Number …….		
314.	Is there any system of locking up the latrine door from outside? (So that it cannot be used after the school is closed)	Yes	1	
		No	2	
315.	How is the path of going to latrine?	Safe and easy to walk	1	
		Unsafe and Not easy to walk	2	
316.	Is there latrine for the students?	Yes	1	
		No	2	→ 318
317.	What is the number of latrines?	For male students ……..		

Sl.	Questions	Answers	Code	Skips
		For female students ……..		
		For all students ……..		
318.	Are the latrines clean?	Yes	1	
		No	2	
319.	Is there any arrangement for the girls if they need to change piece of cloth/panty at the time of their menstruation while they are at school?	Yes	1	
		No	2	
320.	**Observe** Is the arrangement enough for the maintaining of privacy?	Yes	1	
		No	2	
321.	Is there good drainage system in school for removing out the rain water?	Yes	1	
		No	2	→ 323
322.	How is the drainage system?	Packa and covered	1	
		Packa but open	2	
		Kacha and open	3	
		No drain	4	
		Others (Please specify)……	99	
323.	Is there any arrangement of bucket/basket or other materials like that in school for depositing garbage?	Every class rooms have dustbins	1	
		Some of the class rooms have dustbins	2	
		Female latrines have dustbins	3	
		Some specific places have dustbins	4	
		No dustbins anywhere	5	→ 325
		Others (Please specify)……	99	
324.	If there is bucket/basket for depositing garbage of the school, is the size suitable to hold all the garbage?	Yes	1	
		No	2	
325.	Is there any garbage cart/car in school?	Yes	1	
		No	2	
326.	Is there any specific arrangement in school for disposal of solid waste?	Yes	1	
		No	2	→ 328
327.	What is the type of that specific arrangement?	Pit	1	
		Dram	2	
		Beside the road	3	
		In a corner of the school	4	
		Behind / beside the School building	5	
		Drain	6	
		Ditches, ponds, canals, rivers, etc.	7	
		Others (Please specify)……	99	
328.	Is the place of disposal of garbage enclosed with fence?	Yes	1	
		No	2	
329.	What is done with the school garbage?	Burned	1	
		Buried	2	
		Thrown away	3	
		Taken away by municipality	4	

Sl.	Questions	Answers	Code	Skips
		Thrown away in neighboring canals/ditches/drains	5	
		Nothing	6	

SECTION 4: OBSERVATION FOR CLEANLINESS OF SCHOOL COMPOUND

Sl.	Questions	Answers	Code	Skips
401.	How clean is the class room?	Clean	1	
		Dust/torn paper/food scraps/spider web	2	
		Broken chairs/tables are scattered inside the classroom	3	
402.	How clean is the school compound/courtyard?	Clean	1	
		Dirt/garbage is scattered here and there	2	
		Animal dung and garbage are there	3	
		Human feces are there	4	
		Sharp objects are there	5	
		Other solid waste are there	6	
403.	Observe the **female students** directly about washing their hands after using the latrine.	***Please put Tally marks***	***Total***	
	Washing two hands with soap			
	Washing one hand with soap			
	Washing two hands with water only			
	Washing one hand with water only			
	Do not wash the hands			
	Observe the **male students** directly about washing their hands after using the latrine.	***Please put Tally marks***	***Total***	
	Washing two hands with soap			
	Washing one hand with soap			
	Washing two hands with water only			
	Washing one hand with water only			
	Do not wash the hands			
Observe the rate of washing their hands before taking food at Tiffin time or middle break.				
404.	Observe the **female students** directly about washing their hands after using the latrine.	***Please put Tally marks***	***Total***	
	Washing two hands with soap			
	Washing one hand with soap			
	Washing two hands with water only			
	Washing one hand with water only			
	Do not wash the hands			
405.	Observe the **male students** directly about washing their hands after using the latrine.	***Please put Tally marks***	***Total***	
	Washing two hands with soap			
	Washing one hand with soap			

	Washing two hands with water only				
	Washing one hand with water only				
	Do not wash the hands				

Ending time of the observation

	Hours

	Minutes

ANNEX:03

DPHE Zonal Laboratory, Tongi
Water Test Report of Human Development Research Centre (HDRC)

DPHE Zonal Laboratory, Tongi
Water Test Report of Human Development Research Centre
Ref. Memo: Nil & Dated:05/03/2017 by Dr. Abhijit Poddar, Director, Research, HDRC, Dhaka.
Sample Receiving Date: 07/03/2017, 08/03/2017, 13/03/2017 & 14/03/2017 **Date of Testing:07/03/2017-16/03/2017**

Sl No.	Sample ID	District	City Corporation	Ward No.	Village	Owner's Name	Owner's Father/Husband Name	Collection Date	As (mg/L)	Fe (mg/L)	TC (CFU)
1	1	Gazipur	Gazipur	22	Bahadurpur	Purbo Bahadurpur GPS	Azharul Islam	07/03/2017	<0.001	0.89	6
2	2	Gazipur	Gazipur	22	Gazariapara	Monir Hossain	Nur Miah	07/03/2017	<0.001	0.58	0
3	3	Gazipur	Gazipur	22	Gazariapara	Nazrul	Abu Munsur	07/03/2017	<0.001	0.80	10
4	4	Gazipur	Gazipur	22	Gazariapara	Ashraful	Abdur Rahman	07/03/2017	<0.001	0.52	0
5	5	Gazipur	Gazipur	22	Gazariapara	Nurun Nabi	Abdur Rahim	07/03/2017	<0.001	0.29	0
6	6	Gazipur	Gazipur	22	Gazariapara	Nurun Nabi	Abdur Rahim	07/03/2017	<0.001	0.75	0
7	7	Gazipur	Gazipur	22	Gazariapara	Kajol	Abul Munsur	07/03/2017	<0.001	0.50	0
8	8	Gazipur	Gazipur	22	Jangaliapara	Nazim Uddin	Bariwala Nazimuddin	07/03/2017	<0.001	0.90	0
9	9	Gazipur	Gazipur	22	Jangaliapara	Rajon Roy	Dharoni Roy	07/03/2017	<0.001	0.70	0
10	10	Gazipur	Gazipur	22	Jangaliapara	Tutul Baul	Kajol Baul	07/03/2017	<0.001	0.88	0
11	11	Gazipur	Gazipur	22	Jangaliapara Khaspara	Kamal	Osman	07/03/2017	<0.001	0.74	0
12	12	Gazipur	Gazipur	22	Jangaliapara Khaspara	Bachchu	Abu Hanif	07/03/2017	<0.001	0.76	0
13	13	Gazipur	Gazipur	22	Jangaliapara Khaspara	Roich	Shamsuddin	07/03/2017	<0.001	0.76	0
14	14	Gazipur	Gazipur	22	Jangaliapara	Jangaliapara Community Clinic	Lokman Hossain	08/03/2017	<0.001	0.72	0
15	15	Gazipur	Gazipur	22	Nanduail	Abdul Khaleque	Zahoor Uddin	08/03/2017	<0.001	0.77	0
16	16	Gazipur	Gazipur	22	Nanduail	Abdul Khaleque	Zahoor Uddin	08/03/2017	<0.001	0.65	0
17	17	Gazipur	Gazipur	22	Nanduail	Showkat	Abdul Khaleque	08/03/2017	<0.001	0.61	0
18	18	Gazipur	Gazipur	22	Nanduail	Nanduail GPS	Md. Mojibur Rahamn	08/03/2017	<0.001	0.56	0
19	19	Gazipur	Gazipur	22	Nanduail Babuler Chala	Babul	Abdur Rashid	08/03/2017	<0.001	0.23	0
20	20	Gazipur	Gazipur	22	Nanduail	Babul	Abdur Rashid	08/03/2017	<0.001	0.68	0
21	21	Gazipur	Gazipur	22	Nanduail	Abul Kashem	Moyez Uddin	08/03/2017	<0.001	0.40	0
22	22	Gazipur	Gazipur	22	Nanduail uttar para	Vutto Doctor	Sikder Saber Ali	08/03/2017	<0.001	0.60	0
23	23	Gazipur	Gazipur	22	Nanduail uttar para	Vutto Doctor	Sikder Saber Ali	08/03/2017	<0.001	0.50	0
24	24	Gazipur	Gazipur	22	Nanduail uttar para	Mobarok	Jobbar	08/03/2017	<0.001	0.45	8
25	25	Gazipur	Gazipur	22	Tulsi Vita Sikder Bari	Abul Mohori	NM	13/03/2017	<0.001	0.36	0
26	26	Gazipur	Gazipur	22	Tulsi Vita Sikder Bari	Rozina	Atiqul	13/03/2017	<0.001	0.20	60
27	27	Gazipur	Gazipur	22	Tulsi Vita Sikder Bari	Delowar	Abul Mohori	13/03/2017	<0.001	0.15	62
28	28	Gazipur	Gazipur	22	Tulsi Vita Sagor Market	Israfil	Sadem Ali	13/03/2017	<0.001	0.30	18
29	29	Gazipur	Gazipur	22	Tulsi Vita Sagor Market	Shahidul	Dilip	13/03/2017	<0.001	0.10	30
30	30	Gazipur	Gazipur	22	Tulsi Vita Sagor Market	Momin	Shamsul Haque	13/03/2017	<0.001	0.32	52
31	31	Gazipur	Gazipur	22	Purbo Bahadurpur	Holy Child Pre Cadet School	Mahfuzur Rahamn	13/03/2017	<0.001	0.25	0
32	32	Gazipur	Gazipur	22	Purbo Bahadurpur	Purbo Bahadurpur Model Academ	Afsar Uddin	13/03/2017	<0.001	0.20	0

22/03/17

16/03/2017

16.03.2017

Sl No.	Sample/ Lab ID	District	City Corporation	Ward No.	Village	Owner's Name	Owner's Father/Husband Name	Collection Date	As (mg/L)	Fe (mg/L)	TC (CFU)
33	33	Gazipur	Gazipur	22	Purbo Bahadurpur	ATM Anowar Model School	Masum Chowdhury	13/03/2017	<0.001	0.13	16
34	34	Gazipur	Gazipur	22	Gazariapara	Gazaria para hamidia Dakhil Madrasa	Mawlana Abdul Motin	13/03/2017	<0.001	0.12	0
35	35	Gazipur	Gazipur	22	Gazariapara	Gazariapara Model Academy	Anima Das	13/03/2017	<0.001	0.20	0
36	36	Gazipur	Gazipur	22	Gazariapara	Sarkar Mujibur Rahman Adarsha S	Zayeda Akter Sumi	13/03/2017	<0.001	0.14	20
37	37	Gazipur	Gazipur	22	Bahadurpur	Purbo Bahadurpur Darul Ulum KM	Md. Kamal Hossain	13/03/2017	<0.001	0.21	30
38	38	Gazipur	Gazipur	22	Bahadurpur	Kabir	Rahmot Ali	13/03/2017	<0.001	0.42	18
39	39	Gazipur	Gazipur	22	Bahadurpur	Kabir	Rahmot Ali	13/03/2017	<0.001	0.45	82
40	40	Gazipur	Gazipur	22	Bahadurpur	Jakir Hossain	Toiyob Ali Molla	13/03/2017	<0.001	0.43	12
41	41	Gazipur	Gazipur	22	Jangaliapara	Sristy Laboratory School	Somej Al Mamun	14/03/2017	<0.001	0.25	0
42	42	Gazipur	Gazipur	22	Jangaliapara	Wahab Ideal School	Md. Abdul Wahab	14/03/2017	<0.001	0.22	0
43	43	Gazipur	Gazipur	22	Jangaliapara	Banglabazar Shishu Kishor Ac	Rokonuzzaman	14/03/2017	<0.001	0.18	0
44	44	Gazipur	Gazipur	22	Jangaliapara Banglabazar	Abed Ali Bapari Girls DM	Bela Khatun	14/03/2017	<0.001	0.53	0
45	45	Gazipur	Gazipur	22	Bahadurpur	Bahadurpur Community Clinic	NM	14/03/2017	<0.001	0.34	0
46	46	Gazipur	Gazipur	22	Bahadurpur	Paschim Bahadurpur GPS	Nazim Uddin	14/03/2017	<0.001	0.40	0
47	47	Gazipur	Gazipur	22	Jangaliapara	Banglabazar Uttaron Academy	Golam Mostofa	14/03/2017	<0.001	0.15	68
48	48	Gazipur	Gazipur	22	Jangaliapara	Hasan Ali	Abdul Goni	14/03/2017	<0.001	0.18	0
49	49	Gazipur	Gazipur	22	Jangaliapara	Salma	Kuddus Ali	14/03/2017	<0.001	0.16	0
50	50	Gazipur	Gazipur	22	Jangaliapara	Shafiqul	Mofizul	14/03/2017	<0.001	0.20	16

Comments: Samples were collected & supplied by client. As, Fe parameters are tested by Atomic Absorption Spectrophotometer(AAS) & Total Coliform(TC) is tested by Membrane Filtration Method. Bangladesh Standard for As-0.05 mg/L, Fe-(0.3-1.0) mg/L & TC-(0 CFU/100mL). LOQ of As-0.001 mg/L & Fe-0.05 mg/L.
TC: Total Coliform, CFU: Colony Forming Unit, LOQ: Limit Of Quantitation, NM: Not Mentioned.

মোহাম্মদ মুহিফর রহমান
নমুনা বিশ্লেষক
জনস্বাস্থ্য প্রকৌশল অধিদপ্তর
আঞ্চলিক গবেষণাগার, টঙ্গী।

(এস.এম. পারভেজ তালুকদার)
নমুনা বিশ্লেষক, জনস্বাস্থ্য প্রকৌশল
আঞ্চলিক গবেষণাগার, টঙ্গী, গাজীপুর

মোঃ মিন্টু মিঞা
সিনিয়র কেমিস্ট
জনস্বাস্থ্য প্রকৌশল অধিদপ্তর
আঞ্চলিক পরীক্ষাগার টংগী, গাজীপুর

ANNEX:04

WATER AID:
NAME OF THE SCHOOL and MADRASHA

WATER AID: NAME OF THE SCHOOL and MADRASHA

Sl. no.	Name of the School
1	Wahab Ideal Public School
2	Sristilabrotary school
3	Abed Ali Bebari Girls Dakhil Madrassa
4	PurbaBahadurpurDarulUlumQuami Madrassa
5	GazariaparaHamidiaDakhil Madrassa
6	Holly Child Pre-Cadet School
7	PurbaBahadurpur Model Academy
8	Gazariapara Model Academy
9	ATM Anowar Model School
10	SarkarMujiburRahmanAdarsha School
11	PaschimBahadurpur Govt. Primary School
12	Nanduain Govt. Primary School
13	PurbaBahadurpur Govt. Primary School
14	BanglabazarUttaran Academy
15	BanglabazarShishu Kishore Academy

ANNEX:05

MEMBERS OF THE STUDY TEAM

MEMBERS OF THE STUDY TEAM

Team Leader
Golam Mahiyuddin, *MBBS, MPH*

Consultants
Manzuma Ahsan, *MSS*
Faisal Mohammad Ahmad, *MSS*

Research Associate
Md. Abdus Sobhan, *MS*
Ms. Nurunnahar, *MS*

Systems Analyst
ASM Obaidur Rahman
Ajoy Kumar Saha

Finance Support
Abu Taleb
Md. Arif Miah

Administrative Support
Md. Kabiruzzaman
Md. Sabed Ali
Md. Mozammel Hoque

Field Team Leader
Md. Rashadul Islam
Suraiya Parvin Trishna

Field Interview
Md. Golam Mustofa Shamim
Md. Shamsul Hoque
Tawhida Khanam
Most. Sogena Khatun
Goury Howlader
Rujina Akter
Dilruba Rahman
Rokeya Akhter

Data Entry Operator
Nahid Ahmed
Forhad Alam
Ashraf Uddin
Shuhrid Hossain