WASH CHALLENGES IN SLUM AREAS OF DHAKA CITY
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Oxfam started its journey in Bangladesh by providing humanitarian support to cyclone affected people in 1970 and the support became stronger during the time of liberation war in 1971. Since then, Oxfam has been continuing its efforts to support Bangladesh’s poverty alleviation initiatives through humanitarian and development activities. In Bangladesh, until 2010, all of Oxfam’s efforts were mostly limited to rural areas. But now, Oxfam has started to increasingly focus on urban development as urban areas are now afflicted with innumerable problems ranging from the law and order situation to deteriorating environmental conditions due to unplanned rapid urbanization.

The urban population in Bangladesh is projected to grow by approximately 1.4 million people every year. It means that WASH services, infrastructure and livelihood opportunities will be needed for huge number of additional people. Unfortunately, our cities are not able to keep up with such demand for growth. The rapid urban growth has already made heavy demands and pressure on urban utilities and services like water, sanitation, sewerage, waste management, transport, and social services like health and education, etc. Bangladesh continues to experience the trend where an increasing number of people migrating to the cities from rural areas are finding themselves living in slum areas and their WASH related needs are often remaining unmet. This situation needs to change.

However, an improved water, sanitation and hygiene service to these low-income urban areas is a highly challenging and complex task. Traditional approaches have often failed to work. We need new approaches and fresh thinking. We need governments, donors and sector professionals coming together and genuinely committing to improve services in slum settlements. It’s challenging but it can be done!

Keeping this in mind, Oxfam endeavored to learn more on WASH challenges for slum dwellers as we feel that depriving slum people of basic services like WASH will not lead to Oxfam achieving its vision of a just world without poverty. We commissioned this study and ITN BUET kindly agreed to carry it out. OXFAM duly acknowledges the sincere efforts of entire team of ITN-BUET involved in this assignment and they have made an excellent effort to come out with this useful resource. The work is introductory in nature but has high potential to provide insight into different aspects relating to understanding the WASH challenges of slum dwellers in Dhaka. We feel that this study might be helpful for opening up windows for other scoping studies and to undertake further in-depth studies to deal with WASH challenges in the future. We hope that the study findings will be useful for undertaking improved WASH services for slum dwellers.

SNEHAL V. SONEJI
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Background
Although Bangladesh has achieved commendable success in overall coverage of water supply and sanitation services, still urban WASH (Water, Sanitation and Hygiene) remains a major challenge. While sanitation coverage in urban areas averages more than 90% (basic) and 55% (improved), only 12 - 30% of slum populations have access to hygienic sanitation facilities. Drinking water, sanitation, solid waste management and other basic services including health, education, and fire safety remain inaccessible due to gaps in relevant policies and disparity in development plans and strategies. Absence of specific policies and regulatory framework for development of slums and squatter settlements are also major barriers. People living in slums are often unaware of the ill effects of unsafe water, unhygienic latrines, and improper disposal of solid wastes and consequently suffer from diseases and burdens of health care costs. For improving WASH services, it is a prerequisite to have a clear understanding of the WASH challenges in urban slum areas. However, there is lack of reliable data/information on the current WASH situation in urban slum areas.

The objective of this study was to assess the current situation of WASH in four selected slums located in Ward no. 21, 24, 35 & 15 of Dhaka North City Corporation (DNCC). Specific objectives of this study were:

a) To establish evidence based strong rationale for improving access to WASH services for slum dwellers; and

b) To influence relevant stakeholders including GoB line departments, donors, I/NGOs and raise public awareness on sustainable water and sanitation interventions for slum dwellers.

Methodology
As a part of this study, relevant documents, particularly those on WASH situation in urban slums and national level surveys were reviewed. A questionnaire sample survey was conducted during April 2014 in four selected slums of Dhaka city. The questionnaire comprised of six major sections: Socio-economic condition, Water supply, Sanitation, Hygiene (including menstrual hygiene management), Financial Issues, and Other issues (e.g., solid waste management, drainage). Ten enumerators (five male and five female) and one supervisor were engaged for carrying out the questionnaire survey. Extensive training was provided to the field enumerators with the finalized survey instruments.

Four urban slums in Dhaka city were selected for the study: (i) Badda Shahjadpur Jheelpar slum (Ward no. 19), (ii) Boro Moghbazar 12 no. Peyarabagh slum (Ward no. 35), (iii) Vawalbagh (Nakhalpara) Rail line slum (Ward no. 24) and (iv) Vashantek 1 no. slum (Ward no. 15). The questionnaire survey covered 200 households, 50 from each slum. In addition, 4 Focus Group Discussions (FGDs) were carried out, one in each slum. The main purpose of the FGDs was to get views of slum dwellers on different aspects of WASH and other issues.
Participation of different stakeholders including member of different professions, age groups, gender and social groups were ensured in the FGDs. A workshop was organized on 19 June 2014 to share the draft report/findings of the study and to get feedback of the stakeholders. The draft report was finalized incorporating the feedbacks.

Findings

Slum Overview:
Among the four slums, Vashantek slum is the largest, with about 3600 households. This is followed by Badda slum with about 1200 households. Vawalbagh and Peyarabagh slums are similar in size, with about 300 and 350 households, respectively. Out of these four slums, three are located on Government-owned land, while one (Badda Jheelpar slum) is located on private land. Badda slum is located in a low-lying area, with many households built just above water body using bamboo platform. Both Vawalbagh and Peyarabagh slums are located on lands owned by Bangladesh Railway; the Vawalbagh slum is located along narrow strips of land on both sides of the rail line.

In Badda and Vawalbagh slums, no WASH intervention took place in the past, whereas in Peyarabur slum, intervention by an NGO (DSK) took place 5 to 6 years back. These three slums, where there is no ongoing service intervention activity, have been referred to as “non-intervened” slum. In Vashantek slum, WASH intervention has taken place in the past (e.g., by DCC) and currently WASH interventions is continuing by a number of organizations/NGOs (DSK, IPD, Water for All, UPPR); Vashantek slum has been referred to as “intervened” slum.

Socio-economic Condition:
In the studied slums, most (81%) of the household-heads are male. Majority of the household-heads are small business owner (15.8%), service holders (14.4%), rickshaw/van/court puller (12.9%) or construction laborer (12.2%). Average size of the surveyed households is 4.62. Around 8% of the families surveyed have a person with disabilities (PWD), primarily (72%) physical disabilities. Among the disabled people 48% are male, 32% are female and rest are children under age of 18. Around 79% of the surveyed households (HHS) are living in the respective slum for more than 6 years. About 57% of the respondent are living as tenants, while 42% have built their houses at their own cost. 97% of the HHs have electricity in their house.

Reported monthly income of surveyed households did not vary significantly among the four slums. Overall, 2% HHs earn less than 5000 taka, 49% earn between 5,000 to 10,000 taka, 38% earn between 10,001 to 15,000 taka, 10% earn between 15,001 to 20,000 taka and 2% earn more than 20,000 taka per month. 69.2% of the HHs have no monthly saving and only 5.5% save more than 5,000 taka per month. 39% of the HHs have only one earning member, 41% have two earning members, 16% have three and the rest 3% have four earning members.
**Water Supply:**

Slum dwellers in all four slums have access to water supply; DWASA connection, legal or illegal (as reported by the respondents), accounts for majority (94%) of water supply. Among the connections, 63% were legal and the rest were illegal. Besides, community based tube well and some other options are available in these slums. Sources of water supply for the slums are shown in Figure E.1. Daily HH water use varies from less than 100 L to over 400 L; majority reported water use between 100 and 300 L. Water connections are mostly metered (at community point, or at HHs level) in all slums and most platforms of water sources are made of concrete.

According to 56% respondents in intervened slum (Vashantek) and 58% respondents in non-intervened slums, mostly women and girls of the households collect water. The water point is located within 20 feet of the house for 51% cases in Vashantek slum, and around 83% HHs spend less than 60 minutes per day to collect water. Whereas in non-intervened slums the water point is located at distance 50 feet or more for 58% cases, and 73% HHs spend more than 60 minutes a day for collecting water. Thus, distance traveled to fetch water and time spent for collecting water do not appear to be unreasonable in the surveyed slums. Majority of respondents in all four slums reported that water quality is not being monitored regularly by any organization.

In Vashantek slum 18% of the respondents reported “fully satisfied”, 70% “somewhat satisfied”, and the rest 12% reported “neither satisfied nor dissatisfied” in overall performance of present water supply system. In the “non-intervened slums”, 18% are “fully satisfied”, 59% are “somewhat satisfied”, 14% are “neither satisfied nor dissatisfied”, 8% are “slightly dissatisfied” and the rest 1% are “highly dissatisfied” with the overall
performance of the present water supply system. Majority of the respondents are happy with the present system and did not feel any requirement for upgrading the system. However, about 30% of respondents in both “intervened” and “non-intervened” slums suggested improvement in certain areas, including making available new house connections, building storage facilities at household level, construction of platform at water point, water quality improvement, supplying water at lower cost and improving drainage system of wastewater.

Whereas access to water is relatively good in all four slums, there are significant disparities among slums with respect to nature of access. In privately-owned Badda Jheelpar slum, large number of households (25-30) use the same water point; one to one and a half hours often required for collecting a pitcher of water. In addition, there is significant problem in availability of water; sometimes there is no water or water comes in drops. In this slum there is no provision for separate payment for water; water bill is included in monthly house rent.

In Vawalbagh Rail-line slum, most people buy water from community water points managed by a section of influential community people; cost of water varies from taka 1 to taka 5 per Kolshi (each Kolshi holds about 10 to 12 Liters of water). Here, 80% respondents reported spending over 300 taka per month, and 46% reported spending over 500 taka per month for water. However, no major problem with availability and quality of water was reported. In Peyarabagh slum, residents collect water from tubewells connected to water supply lines; water is always available. About 67% respondents spend less than or equal to 200 taka, and 28% spend 200-300 taka per month for water. In Vashantek slum, an NGO “Water for All” is facilitating water supply from DWASA; all connections (about 500) given so far are metered.73% respondents spend taka 100 to 200, and 23% spend taka 200 to 300 per month for water. In general, no major complaints were made regarding quantity and quality of water.

In Vawalbagh Rail-line slum, most people buy water from community water points managed by a section of influential community people; cost of water varies from taka 1 to taka 5 per Kolshi (each Kolshi holds about 10 to 12 Liters of water). Here, 80% respondents reported spending over 300 taka per month, and 46% reported spending over 500 taka per month for water. However, no major problem with availability and quality of water was reported. In Peyarabagh slum, residents collect water from tubewells connected to water supply lines; water is always available. About 67% respondents spend less than or equal to 200 taka, and 28% spend 200-300 taka per month for water. In Vashantek slum, an NGO “Water for All” is facilitating water supply from DWASA; all connections (about 500) given so far are metered.73% respondents spend taka 100 to 200, and 23% spend taka 200 to 300 per month for water. In general, no major complaints were made regarding quantity and quality of water.

In Vashantek (with ongoing NGO intervention) and Peyarabagh (with past NGO intervention) slums, community people and NGOs played major role in selecting type of water supply. In Vawalbagh slum, both community people and a section of “influential people” in the community played major role in the selection process. In Badda slum, the only private slum among the four surveyed, there is virtually no role of community in selection of water supply option; the slum-owner takes decision regarding type of water supply option and site for water point. The same is true with regard to technical and financial support for the water supply system.

Responsibility of O&M of water points also varied among the slums depending on type of slum (on public or private land) and nature present/past intervention. In Vashantek slum, the beneficiaries (92%) are responsible for regular O&M and cleanliness of the water options. In Peyarabagh slum where NGO intervention took place in the past, caretaker, appointed by the community takes major responsibility (90%) of O&M of the water points. In Vawalbagh slum, community appointed
caretaker and a section of “influential people” who control the “water business” take care of O&M. In case of privately owned Badda slum, community people (74%) and caretaker (26%) are responsible for O&M of water points.

Sanitation:
While access to water supply was relatively good in all the surveyed slums, access to proper sanitation facilities has been found to vary significantly among the surveyed slums. The situation has been found to be particularly alarming in the privately owned Badda slum and Vawalbagh Rail-line slum, where no intervention has taken place in the past (see Figure E.2). In Badda slum, almost all (92%) latrines are unhygienic (i.e. without water seal and venting system). Open defecation is still practiced by some children living in the slum. In this privately owned slum, the slum-owner is not interested to install sanitary latrines, while slum people are not permitted to construct latrines. Because of this, a very unhealthy situation is prevailing in the slum.

In Vawalbagh slum, the situation is even worse, with 20% respondents still practicing open defecation and majority of latrine being unhygienic. All sanitation facilities in this slum are located on the western side of the rail line, and people living on the eastern side of rail line have to cross the rail line for accessing toilet. This difficulty has contributed to the high prevalence of open defecation. The condition of toilets in this slum has been found to be very poor. Incidences of children falling into toilet were reported. Financial difficulties and temporary nature of settlement have been reported as reasons for not having better toilets.

The situation is much better in Peyarabagh and Vashantek slums; unhygienic latrines account for only 2% and 4% sanitation facilities, respectively in these two slums, and open defecation has been completely eliminated. In Peyarabagh slum, many toilets constructed during past intervention by DSK are still working satisfactorily. However, in Vashantek slum, many latrines constructed under earlier “intervention” are not functioning properly, and have become unhygienic.

![Figure E.2: Sanitation options in the surveyed slums](image-url)
In Vashantek slum, 98% HHs and in the three “non-intervened” slums 80% HHs dispose the feces of children in latrines. Persons with disability (PWD) in Vashantek slum defecate mostly in latrines (75%) or in other fixed place (25%). In the “non-intervened” slums, 62% of PWD defecate in latrine, 25% in other fixed places and rest practice open defecation. In Vashantek slum, 38% and in the “non-intervened slums” 13% latrine have stairs with railing to be used by the PWD or elderly people.

Separate toilet facilities are available for women and girls according to the 71% and 15% respondents in “intervened” (i.e., Vashantek) and “non-intervened” slums, respectively. 77% respondents of the three “non-intervened” slums reported that the location of latrine is not suitable for easy and convenient access for women and girls during night. In Vashantek slum, only 16% respondents opined that the toilet location is inconvenient. In all four surveyed slums, there are discrepancies in terms of opportunity of toilet use by women. Many respondents complained that women do not get the equal opportunity for using the toilet.

Number of households using the same toilet was found to be as high as 50 in Vashantek slum, and even higher in the “non-intervened” slums. In the morning when everybody tries to go to latrine, queue is developed, and this is a common scenario in all four slums. Queuing time varies from less than 10 minutes to 60 minutes; most of the respondents reported a waiting time of 10–20 minutes.

There is no organized fecal sludge management (FSM) service in any of the surveyed slum. When the pit or septic tank of sanitary latrine, sanitation block, and cluster latrine becomes full, the household/community call sweeper to clean the septic tank/pit manually or using mechanical equipment (only in Vashantek slum). The emptied sludge is directly discharged into drains, ditch/water bodies or low lying areas, causing serious environmental pollution and posing risks to public health. Desludging of pit/septic tank in an environment-friendly way is a major issue and in intervened slum 61% households want an environment-friendly pit emptying service and they are willing to pay for such service. However, in non-intervened slums, most of the households (74%) did not feel any necessity for such a service and they are not willing to pay for this service.

Similar to the case for water supply, significant variation has been observed in community participation in sanitation among the four slums. In Vashantek (with ongoing NGO intervention) and Peyarabagh (with past NGO intervention) slums, community people and NGOs played major role in selecting type of sanitation system. In Vawalbagh slum, both community people and house owners played major role in the selection process. In the privately owned Badda slum, there is virtually no role of the community in selection of sanitation option; the slum-owner takes decision regarding type of sanitation option. The same is true with regard to selection of site for sanitation facilities and technical and financial support for the sanitation system.
Responsibility of O&M of sanitation facilities also varied among the slums depending on type of slum (on public or private land) and nature present/past intervention (Figure E.3). In Vashantek slum with ongoing NGO intervention, the beneficiaries (98%) are primarily responsible for regular O&M and cleanliness of the sanitation facilities. In Payerabagh slum where NGO intervention took place in the past, caretaker, appointed by the community takes major responsibility (92%) of the O&M. In Vawalbagh slum, community people and (80%) and a section of “influential people” within the slum (18%) (referred to as “other” in figure) take care of O&M. In case of privately owned Badda slum, community people (56%) and caretaker (20%) are primarily responsible for O&M of sanitation facilities.

In Vashantek and Peyarabagh slums (with ongoing/past NGO intervention), where the community has a strong role in selection of type/site and O&M of sanitation facilities, the sanitation systems are in much better condition, compared to those in Badda and Vawalbagh slums where the community has virtually no role (Badda slum) or limited role (Vawalbagh slum).

**Hygiene Awareness and Practice:**

The reported hygiene practices by the households are comparatively better in Vashantek (i.e., “intervened”) slum. The reported hand washing practice by households before taking meals in the Vashantek slum is 100%, and after defecation 98%; whereas in non-intervened slums, these are 82% on an average in both cases. 100% household members reported wearing sandal (slipper) before going to latrine in Vashantek slum, compared to 96% in non-intervened slums. 98% respondents in Vashantek slum reported washing their hands before feeding and after anal cleansing of their children, which are slightly better in comparison to the non-intervened slums. Although the “reported hygiene behavior” is encouraging, it should be kept in mind that “actual hygiene practice” are often poor among communities, as revealed in the national hygiene survey 2014.
In Vashantek slum, about 78% households practice hand washing with soap and 10% with ash; the corresponding figures in the non-intervened slums are 47% and 3%, respectively (Figure E.4). 50% women and adolescent girls in intervened Vashantek slum and 46% in non-intervened slums area can take bath privately. In Vashantek slum, 90% and in non-intervened slums 67% household members cover their food. Sufferings from various waterborne diseases like diarrhea, dysentery in the four slums are almost similar. Majority of respondents (over 95%) in all four slums demanded more support in WASH for further improvement of hygiene practice in their community.

Though 89% of women have sound knowledge on menstrual hygiene management in the Vashantek slum, 49% of the respondents reported that they face different kinds of difficulties related to menstruation. In the non-intervened slums only 49% women on an average have sound knowledge on menstrual hygiene management and 51% respondents mentioned about difficulties during menstruation. The difficulties cited include drying of used clothes, washing of used clothes and physical illness.

**Other Relevant Aspects:**

Majority of respondents in the surveyed slums could not recognize existence of any systematic approach (such as composting or van collection) for solid waste management (SWM). Most of the households (83%) in the studied slums drain household wastewater in nearby drains or khals/lakes. Half of the respondents in intervened Vashantek slum and 32% respondents in the non-intervened slums have identified water logging as a major problem in their community.

Most of the respondents (61%) in the intervened slum and only 7% respondents in non-intervened slums opined that their communities have firefighting preparedness. However, majority of the respondents told that it would not be possible for the firefighting vehicles to enter into the slum due to narrow road. Fire outbreaks have been reported in
Vashantek slum (during FGD), which are usually taken care of by slum people themselves. High price and availability of fuelwood are important concerns. Indoor air pollution from cooking was not reported as a major problem. However, from observation of cooking practices (using traditional cookstoves) made during field visits (e.g., blackened surfaces of walls), it appears that indoor air pollution could be significant in the slums.

**Financial Aspects:**
Among the slums surveyed, residents of the privately owned Badda slum do not pay separately for water; it is included in their house rent. Most of the respondents of the other three slums pay for using water on a monthly basis (Vashantek and Peyarabagh slums) or buy water as needed (Vawalbagh slum).

Residents of Vashantek slum (with ongoing NGO intervention) and Peyarabagh slum (with past NGO intervention) contributed to the water supply options, either in the form of monetary contribution or labor. Only some residents of Vashantek and Vawalbagh slums reported contributing for sanitation options, in the form of monetary contribution, non-monetary (labor) or both.

**Major Challenges**
Based on the results of this study, the following major WASH challenges are identified:

1. Sanitation services in many slums are still poor; privately owned slums are of particular concern in this regard, where (WASH) interventions (by GO/NGOs) would be a challenge.
2. Absence of fecal sludge management (FSM) is endangering the sustainability of sanitation services as well as public health and environment; initiating FSM services in slums (as well as other city areas served by on-site sanitation systems) is imperative but would also be a major challenge.
3. Integrating gender issues (with respect to design and use) and addressing special needs (e.g. for persons with disability, young and the old) are yet to be mainstreamed in sanitation interventions.
4. In many slums, ensuring long-term sustainability of water supply and water source still remains a concern.
5. With respect to hygiene, significant efforts are needed for converting good knowledge/awareness (on hygiene behavior) into practice.
6. Integrated approach (i.e., covering diverse challenges, beyond WASH) for slum development is needed for sustainable improvement of slums.
Major Observations and Recommendations
The important observations from the present study and recommendations to address the major challenges are summarized below:

General Issues:
- WASH challenges vary significantly among slums; WASH challenges appear to be particularly acute in privately owned slums. Policy intervention is needed to make private slum owners accountable for providing adequate WASH services to the slum residents.
- Past and ongoing interventions have significant positive impacts; such interventions play a positive role in community mobilization and participation in decision making, in the development of facilities and their O & M.
- Active community participation promotes sustainability of WASH services. Future interventions should put more emphasis on community mobilization and participation of the community in implementation and management of WASH services.

Water Supply:
- Despite good access to water supply, there is significant scope for improvement, e.g., with respect to number and location of water points, price of water. DWASA-NGO interventions appear to be working well in expanding “legal” and sustainable water supply in slum areas. Initiative is needed to replicate such good practices.
- Water quality remains an area to be addressed more comprehensively in future interventions.
- Sustainability of water sources/options e.g. common reservoir, individual connections, etc. needs to be assessed in greater detail in future interventions. Entrepreneurship model for water point/water distribution management should be considered in future interventions.

Sanitation:
- Sanitation services are in a poor state in many slums, especially in non-intervened slums; the situation is particularly challenging in privately owned slums, where there is limitation in carrying out WASH intervention.
- Immediate intervention is needed to improve sanitation services in slums with poor sanitation coverage (e.g., privately owned slums), through involvement of City Corporation (who are responsible for on-site sanitation services), NGOs and the Development Partners.
- Sustainability of sanitation services is an important issue; both technology and management affect sustainability, and hence both should be addressed adequately in future interventions.
• Absence of fecal sludge management (FSM) services is affecting sustainability of sanitation services, and contributing to environmental pollution and spreading of diseases. FSM services should be included in future interventions.

Hygiene Practices:
• Despite having good knowledge about hygiene, poor hygiene practices, especially with regard to hand washing, appear to be a concern, and needs to be addressed in future interventions.
• Poor hygiene practices (e.g. disposal of children's faces, cloth in toilet) affect sustainability of sanitation services, and should be addressed in future interventions.

Other Issues:
• Gender issues (e.g., separate toilets for women/girls, ensuring easy/convenient access of women/girls especially during night) and access of persons with disability (PWD) and children are often not addressed adequately. These issues need to be mainstreamed in future interventions.
• Drainage is a major problem, and should be addressed along with water supply and sanitation, considering micro (i.e., within the slum) - macro (i.e., surrounding the slum) drainage linkages. Increased wastewater due to improved water supply often aggravates drainage problem.
• Household garbage management including recycling should also be emphasized in future interventions to avoid clogging of drains as well as generate livelihood opportunities.
• Fire hazard, fuel wood, and indoor air pollution should be addressed in future interventions for inclusive development in slums.
• Other areas of development that were not within the scope of this study, e.g., internal road network and connectivity, access to electricity supply, education, etc. are also important issues to be addressed through integrated development approach to ensure sustainability.
# Table of Contents

**EXECUTIVE SUMMARY**

1. **INTRODUCTION**  
2. **STUDY OBJECTIVES**  
3. **APPROACH AND METHODOLOGY**  
   3.1 **CONSULTATIONS AND FIELD VISITS**  
   3.2 **DOCUMENT REVIEW**  
   3.3 **SURVEY**  
      3.3.1 Development of Survey Instruments  
      3.3.2 Field testing of Questionnaire  
      3.3.3 Training of Enumerators  
      3.3.4 Location and Sample Size Selection  
      3.3.5 Household Interviews  
      3.3.6 Data Processing  
   3.4 **FOCUS GROUP DISCUSSION**  
   3.5 **DATA ANALYSIS AND INTERPRETATION**  
   3.6 **WORKSHOP ON DRAFT FINDINGS**  

4. **FINDINGS**  
   4.1 **OVERVIEW OF SLUMS**  
   4.2 **SOCIO-ECONOMIC CONDITION**  
   4.3 **WATER SUPPLY**  
      4.3.1 Overall Scenario  
      4.3.2 Variation in Access to Water among Slums  
      4.3.3 Community Participation in Water Supply  
   4.4 **SANITATION**  
      4.4.1 Overall Scenario  
      4.4.2 Community Participation in Sanitation  
   4.5 **HYGIENE AWARENESS AND PRACTICES**  
   4.6 **OTHER RELEVANT ASPECTS**  
   4.7 **FINANCIAL ASPECTS**  
   4.8 **MAJOR CHALLENGES**  
   4.9 **MAJOR OBSERVATIONS AND RECOMMENDATIONS**

**REFERENCES**  
**ANNEXES**
## Abbreviations & Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUET</td>
<td>Bangladesh University of Engineering and Technology</td>
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<td>DNCC</td>
<td>Dhaka North City Corporation</td>
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<td>DSK</td>
<td>Dustha Shasthya Kendra</td>
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<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>FSM</td>
<td>Fecal Sludge Management</td>
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<td>FY</td>
<td>Financial Year</td>
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<td>GoB</td>
<td>Government of Bangladesh</td>
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<td>ITN</td>
<td>International Training Network</td>
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<td>Non-Government Organization</td>
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<td>Policy Support Unit</td>
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<td>Persons With Disability</td>
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<td>Sector Development Plan</td>
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<td>Solid Waste Management</td>
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<td>Water Supply and Sewerage Authority</td>
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<td>WASH</td>
<td>Water Sanitation and Hygiene</td>
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<td>WATSAN</td>
<td>Water Supply and Sanitation</td>
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<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WSUP</td>
<td>Water and Sanitation for Urban Poor</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

Although Bangladesh has achieved commendable success in overall coverage of water supply and sanitation services, still urban WASH (Water, Sanitation and Hygiene) remains a major challenge in the context of rapidly growing urbanization in Bangladesh. While sanitation coverage in urban areas averages more than 90% (basic) and 55% (improved), only 12 - 30% of slum populations have access to hygienic sanitation facilities. About 29 million people live in the “hard to reach areas” of Bangladesh. Water supply and sanitation coverage is particularly lower in “hard to reach areas”; urban slums belong to such areas, where access to and sustainability of WASH services are often extremely poor.

Slums in large cities and towns are growing at a rapid pace largely because of migration of people from disaster prone, vulnerable areas to urban centers in search of livelihood. About 40% of the total urban population of Bangladesh lives in slums with inadequate facilities. There are 3,500-4,000 big, medium, and small slums in Dhaka city alone. Bangladesh is one of the most densely populated countries in the world; the population density in urban slums particularly in Dhaka city ranges from 500 to 1500 persons per acre. Most slums on private or public lands are located on lowlands or wetlands and are faced with severe drainage problems particularly during monsoon. Most slum dwellers on public lands are deprived of utility services on the pretext of illegal occupation; private land owners are often ignorant about people’s need for services or unwilling to take initiative to provide services, despite collecting rents at a much higher rate.

Drinking water, sanitation, solid waste management and other basic services including health, education, fire safety, and security remain inaccessible due to gaps in relevant policies and disparity in development plans and strategies. Absence of specific policies and regulatory framework for development of slums and squatter settlements are also major barriers. People living in slums are often unaware of the ill effects of unsafe water, unhygienic latrines, and improper disposal of solid wastes and consequently suffer from diseases and burdens of health care costs.

For improving WASH services, it is a prerequisite to have a clear understanding of the WASH challenges in urban slum areas. However, there is lack of reliable data/information on the current WASH situation in urban slum areas.

2. STUDY OBJECTIVES

The objective of this study was to assess the current situation of WASH (water, sanitation and hygiene) in four (4) selected slums located in Ward no. 21, 24, 35 & 15 of Dhaka North City Corporation (DNCC).

Specific objectives of this study were:

a) To establish evidence based strong rationale for improving access to WASH services for slum dwellers; and
b) To influence relevant stakeholders including GoB line departments, donors, I/NGOs and raise public awareness on sustainable water and sanitation interventions for slum dwellers;

The study has generated first hand data/information on the access to WASH services and WASH challenges in slum areas in an effort to establish rationale for improving WASH facilities and services in urban slum areas.

3. APPROACH AND METHODOLOGY

The approach and methodology followed and major specific activities carried out under the study are summarized below:

3.1 CONSULTATIONS AND FIELD VISITS

The study team had a number of meetings with Oxfam officials. The meetings were very useful for better understanding of the assignment and getting a clear overview of the projects implemented by Oxfam. The study team finalized the modalities of work (including contents of questionnaire and areas to be focused in questionnaire survey) in consultation with Oxfam. Special emphasis was placed on the WASH facilities and challenges along with other important issues. After consultation with Oxfam, “access to WASH facilities for women” was given more importance in the questionnaire. The study team also visited the possible project locations to have an overview of the present situation in the field. Selection of sites for questionnaire sample survey and Focus Group Discussions (FGDs) were finalized based on the findings of the field visits by the study team and discussions carried out with Oxfam officials.

3.2 DOCUMENT REVIEW

The study team collected, compiled and reviewed necessary relevant documents, particularly those on WASH situation in urban slums and national level surveys (PMID-WSUP, 2013; PSU-ICDDR’B-WaterAid, 2014; WHO-Unicef, 2014). Significant efforts had been made to collect and compile available data and information.

3.3 SURVEY

A questionnaire sample survey was conducted during the month of April, 2014 in four selected slums of Dhaka city. The activities carried out under the survey are listed in the following section.

3.3.1 DEVELOPMENT OF SURVEY INSTRUMENTS

A draft questionnaire was developed considering the objectives of the study and applying best professional judgment. The questionnaire was designed with a view to collect information on all major aspects of this project. The questionnaire comprised of six major
sections: Socio-economic profile, Water supply, Sanitation, Hygiene (including menstrual hygiene management), Financial Issues, and Other issues (e.g., solid waste management, drainage). The questionnaire was designed to capture a clear picture about the present situation, gaps, challenges and sustainability of WASH facilities and cross-cutting issues. The questionnaire was also made flexible so that required information could be gathered from context-specific information using the same questionnaire. Provision was kept in the questionnaire for some technical assessment of interventions (e.g., latrines) by the enumerators. The draft questionnaire was shared with Oxfam. Based on the feedbacks from Oxfam and field tests, the draft questionnaire was finalized (see Annex-I).

### 3.3.2 Field testing of Questionnaire

On 21 April 2014, field testing of the draft questionnaire was performed in the Badda Shahjadpur Jheelpar slum area in Badda (under Ward no. 19). The primary objective of field testing of the draft questionnaire was to fine-tune the questionnaire for overcoming the difficulties that would have been faced otherwise, and facilitating smooth conduction of the questionnaire survey by the enumerators. The outcome of the field tests were used to finalize the questionnaire.

### 3.3.3 Training of Enumerators

A total of 10 enumerators (five male and five female) and one supervisor, working for Dustha Shastha Kendro (DSK), a national NGO having long experience of working in urban slums, were engaged considering their experience, qualification and availability to carry out the field survey works. To effectively bring out the required information from the study sites, extensive training was provided to the field enumerators with the finalized survey instruments so that the enumerators are aware of the major objectives of this project. Every question in the questionnaire was discussed with the enumerators so that no confusion arises during survey. Through discussions, the enumerators became clear on different questions/issues in the questionnaire. The ten enumerators were divided into five groups; each group had a female enumerator in order to facilitate interaction with female respondents.

### 3.3.4 Location and Sample Size Selection

In accordance to the Terms of Reference (ToR), four urban slums in Dhaka city were selected for the survey. The slums are (i) Badda Shahjadpur Jheelpar slum (Ward no. 19), (ii) Boro Moghbazar 12 no. Peyarabagh slum (Ward no. 35), (iii) Vawalbagh (Nakhalpara) Rail line slum (Ward no. 24) and (iv) Vashantek 1 no. slum (Ward no. 15).

In compliance with the ToR and discussion with Oxfam officials, a total of 200 households were interviewed in four slums (i.e., 50 households in each slum). Out of these four slums, no
WASH interventions took place by any organization in two slums (Badda Shahjadpur Jheelpar and Vawalbagh Rail line slums). In Boro Moghbazar 12 no. Peyarabur slum, intervention by an NGO (DSK) took place 5 to 6 years back. These three slums, where there is no ongoing service intervention activity, have been referred to as “non-intervened” slum. Vashantek slum has been referred to as “intervened” slum, where WASH interventions are being carried out by several organizations/NGOs.

### 3.3.5 Household Interviews

Based on the sampling protocol mentioned in the previous section, 200 households were interviewed using the finalized survey instruments. Special attention was given to develop a friendly relationship with the community so that correct information could be gathered through the household interview. The study team also supervised the interviews closely and helped to eliminate confusions, as and when one was encountered.

Most of the respondents were female (77%) and 93% of them were in the age group of 18-65 (see Figure 3.1 for details). As shown in Figure 3.2 about 45% of them were illiterate and 30% passed primary school. Most of the respondents were housewives (40.9%). Among others, as shown in Figure 3.3, domestic help (20.7%) and small businessmen (9.1%) were major profession of the respondents.

![Figure 3.1: Age of the respondents](image)
![Figure 3.2: Education status of the respondents](image)
![Figure 3.3: Profession of the respondents](image)
3.3.6 **Data Processing**

The data collected from the survey were scrutinized, processed and entered into a computer database system. The database was designed in accordance with the questionnaire, so that minimum effort is required to enter the data. The system was built keeping some provision for cross checking of data to minimize errors. The design also considered quick and effective analysis of data.

3.4 **Focus Group Discussion**

A total of 4 Focus Group Discussions (FGDs) in the 4 selected slums were carried out in accordance with the ToR. The main purpose of the FGDs was to get views of the people of the slums on different aspects of WASH and other issues (e.g., indoor air pollution, fuel-wood and cooking practices). Participation of different stakeholders including member of different professions, age groups, genders and social groups were ensured in the FGDs. Proceeding of the FGDs are presented in Annex II.

![Figure 3.4: FGDs being conducted at: (a) Peyarabagh slum, and (b) Vawalbagh slum](image)

3.5 **Data Analysis and Interpretation**

The primary data collected under the study were analyzed with a view to assess the present situation of WASH, and to identify gaps and challenges related to WASH. The objectives of this study were kept in mind during data analysis and interpretation. Different software packages like IBM SPSS Statistics 22 and MS Excel were used for data analysis.

3.6 **Workshop on Draft Findings**

A workshop was organized on 19 June 2014 to share the draft report/ findings of the study and to get feedback of the stakeholders. A total of 36 stakeholders, representing Government and Non-Government organizations, development partners and academic/research institutions participated in the workshop. Feedbacks from the stakeholders were recorded and the draft report was finalized incorporating these feedbacks.
4 FINDINGS

The following sections describe the major findings of the study, highlighting WASH challenges in urban slums of Dhaka city on the basis of the results of the questionnaire survey, information gathered in the FGDs, and discussions held with key personnel.

4.1 OVERVIEW OF SLUMS

In this study, field work (questionnaire survey and FGDs) was carried at in four slums located in DNCC areas; these are (i) Badda Shahjadpur Jheelpar slum (Ward no. 19), (ii) Boro Moghbazar 12 no. Peyarabagh slum (Ward no. 35), (iii) Vawalbagh (Nakhalpara) Rail line slum (Ward no. 24) and (iv) Vashantek 1 no. slum (Ward no. 15). Table 4.1 shows the location, number of households, land ownership and intervention status of the four slums.

Among the four slums, Vashantek slum (Figure 4.4) is the largest, with about 3600 households. This is followed by Badda slum (Figure 4.3) with about 1200 households. Vawalbagh (Figure 4.2) and Peyarabagh (Figure 4.3) slums are similar in size, with about 300 and 350 households, respectively. Out of these four slums, three are located on Government-owned land, while one (Badda Jheelpar slum) is located on private land. Badda slum is located in a low-lying area, with many households built just above water body using bamboo platform. Both Vawalbagh and Peyarabagh slums are located on lands owned by Bangladesh Railway; the Vawalbagh slum is located along narrow strips of land on both sides of the rail line (Figure 4.2).

As mentioned earlier, in Badda and Vawalbagh slums, no WASH intervention took place in the past by any organization, whereas in Boro Moghbazar 12 no. Peyarabur slum, intervention by an NGO (DSK) took place 5 to 6 years back. In Vashantek slum, WASH intervention had taken place in the past (e.g., by DCC) and currently WASH interventions is continuing by a number of organizations/NGOs (DSK, IPD, Water for All, UPPR); DWASA is also supporting an NGO in providing water supply in this slum.

Table 4.1: Location, household number, land ownership and intervention status of slums

<table>
<thead>
<tr>
<th>Name of Slum</th>
<th>Location/Address</th>
<th>No. of HHs</th>
<th>Land Ownership</th>
<th>Intervention Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badda (Shahjadpur) Jheelpar Slum</td>
<td>East side of Gulshan lake, Ward No. 21, Dhaka North City Corporation</td>
<td>1200</td>
<td>Private</td>
<td>No intervention</td>
</tr>
<tr>
<td>Vawalbagh (Nakhalpara) Rail line Slum</td>
<td>Tejgaon Industrial Area, Ward No. 24, Dhaka North City Corporation</td>
<td>300</td>
<td>Govt. (Railway)</td>
<td>No intervention</td>
</tr>
<tr>
<td>Boro Mogbazar 12 No. Peyarabagh Slum</td>
<td>Boro Magbazar, Ward no. 35., Dhaka North City Corporation</td>
<td>350</td>
<td>Govt. (Railway)</td>
<td>6-7 years back (by DSK)</td>
</tr>
<tr>
<td>Vashantek 1 No. Slum</td>
<td>Vashantek, Dhaka Cantonment, Ward no. 15, Dhaka North City Corporation</td>
<td>3600</td>
<td>Govt.</td>
<td>Ongoing intervention (IPD, DSK, Water for Life and UPPR); DCC</td>
</tr>
</tbody>
</table>
Figure 4.1: Badda Jheelpar Slum

Figure 4.2: Vawalbagh Rail-line Slum

Figure 4.3: Moghbazar Peyarabagh Slum

Figure 4.4: Vashantek slum
4.2 SOCIO-ECONOMIC CONDITION

In the studied slums, most (81%) of the household-heads are male. Majority of the household-heads are small business owner (15.8%), service holders (14.4%), rickshaw/van/curt puller (12.9%) or construction laborer (12.2%). Details of profession of household-heads are presented in Figure 4.5. Average size of the surveyed households is 4.62, comprising of 34% male, 36% female and rest children under age of 18 (Figure 4.6). Around 8% of the families surveyed have a person with disabilities (PWD), primarily (72%) physical disabilities. As shown in Figure 4.7, other types of disabilities that prevail include mental disability, deafness and blindness. Among the disabled people, 48% are male, 32% are female and rest are children under age of 18.

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**Figure 4.5: Profession of the Head of the Household**

**Figure 4.6: Composition of Families**

**Figure 4.7: Type of Disability**
Around 79% of the surveyed households are living in the respective slum for more than 6 years (see details in Figure 4.8). About 57% of the respondents are living as tenants, while 42% have built their houses at their own cost. 97% of the HHs have electricity in their house, and 14% HHs (among those who pay house rents) do not pay electricity bill separately. Electricity bill payment by households is shown in Figure 4.9; it shows that 26% HHs pay more than 600 taka per month for electricity.

Reported monthly income of surveyed households did not vary significantly among the four slums. Overall, 2% HHs earn less than 5000 taka, 49% earn between 5,000 to 10,000 taka, 38% earn between 10,001 to 15,000 taka, 10% earn between 15,001 to 20,000 taka and 2% earn more than 20,000 taka per month (Figure 4.10). 69.2% of the HHs have no monthly saving and only 5.5% save more than 5,000 taka per month. Details of monthly savings by HHs are presented in Figure 4.11. 39% of the HHs have only one earning member, 41% have two earning members, 16% have three and the rest 3% have four earning members.
4.3 WATER SUPPLY

4.3.1 OVERALL SCENARIO

Slum dwellers in all four slums have access to water supply; DWASA connection, legal or illegal (as reported by the respondents), accounts for majority (94%) of water supply. Among the connections, 63% were legal and the rest were illegal. In Vashantek intervened slum, 51% are illegal connections and 47% are legal connections. In the other three (“non-intervened”) slums, legal DWASA connections accounts for about 69% and illegal connection accounts for 25% of water supply. Besides these two types of sources, community based tube well and some other options are available in these slums. Different sources of water supply for the slums are shown in Figure 4.12.

![Figure 4.12: Drinking water supply source in the slums](image)

Most of the households in the surveyed slums have good access to water. This was reported by 96% respondents of Vashantek slum and 68% respondents of the other three “non-intervened” slums. Details of water availability for households are presented in Figure 4.13. Daily HH water use varies from less than 100 L to over 400 L; majority reported water use between 100 to 300 L. Slightly higher water-use was reported in Peyarabagh and Vashantek slums. Details of water use in liters by households are shown in Figure 4.14. For all slums, water connections are mostly metered (at community point, or at HHs level) and most platforms of water sources are made of concrete.

Wastewater generated from water use is discharged into nearby surface drains by most of the HHs in the surveyed slums; 88% in Vashantek slum and 63% in the other three non-intervened slums. Discharging to low lying areas/water bodies, nearby lake/pond or ditches are other common options for drainage of wastewater. Different practices
regarding drainage of wastewater are shown in Figure 4.15. Generation of wastewater increases with increase in water use; however, disposal of wastewater is seldom addressed along with water supply in any intervention.

According to 56% respondents in Vashantek slum and 58% respondents in non-intervened slums, mostly women and girls of the households collect water. However, 42% and 38% respondents in intervened (i.e., Vashantek) and non-intervened slums, respectively opined that both men and women collect water. The water point is located within 20 feet of the house for 51% cases in intervened (Vashantek) slum. Around 83% HHs spend less than 60 minutes per day to collect water. Whereas in non-intervened slums, the water point is located at distance 50 feet or more for 58% cases; and 73% HHs spend more than 60 minutes a day for collecting water. Distance of water source form house and time spent for collecting water is presented in Figure 4.16 and Figure 4.17, respectively. Thus, distance traveled to fetch water, and time spent for collecting water do not appear to be unreasonable in the surveyed slums.
Majority of respondents in all four slums reported that water quality is not being monitored regularly by any organization. Around 20–29% of the respondents in the surveyed slums reported testing of water quality by some organization. However, most of them (61%) had no idea about the organization that tested the water quality; some of them (32%) reported that it was the NGO that installed the water options and few (7%) reported that the water utility did the tests. Some (6% and 19%, respectively in intervened and non-intervened slums) reported that they were informed about the result of the tests. Water quality is an important issue, and should be given more emphasis if positive impacts of interventions are to be achieved.

Sources of water before introduction of the present system were collection from mosque/pump houses, neighboring houses, tubewells or purchase from street vendors. In Vashantek slum, tubewell (41%) was a major option along with pump house or mosque (13%), neighboring house (15%), and collection from a distant place (17%). On the other hand, in the three “non-intervened slum”, collection from a distant place (26%), mosque and pump house (20%) were the major options. Sources of water before introduction of the present water system are shown in Figure 4.18. Thus, sustainability of water sources remains a major issue and needs to be addressed in future interventions.
Respondents identified various issues regarding the water options they used previously. In Vashantek slum, the major problems (before intervention) reported by the respondents included not getting sufficient water (25%), water point at a distant place (16%), long time required for water collection (19%), water not always available (18%) and dirty water (12%). Different problems of previous water supply system are shown in Figure 4.19. In the three “non-intervened” slum, the problems identified with previous water supply system included water point at a distant location (27%), long time required for collection (23%) and not getting sufficient water (21%), along with some other problems.

![Figure 4.19: Major problems in the previous water options](image)

The major benefit of present water supply options as reported by the respondents is water availability; it was reported by 58% respondents in intervened (i.e., Vashantek) and 45% respondents in the “non-intervened” slums. Some other benefits mentioned by the respondents and detailed out in Figure 4.20 include less time required to fetch water and travelling of less distance to collect water. Majority of the respondents are happy with the present system and did not feel any requirement for upgrading the system. About 30% of respondents in both “intervened” and “non-intervened” slums opined for some improvement of the changing the present system. Major improvements suggested by the respondents included making available new house connections, building storage facilities at household level, construction of platform at water point, water quality improvement, supplying water at lower cost and improving drainage system of wastewater. In the intervened (Vashantek) slum, 18% of the respondents reported “fully satisfied”, 70% “somewhat satisfied”, and the rest 12% reported “neither satisfied nor dissatisfied” in overall performance of present water supply system. In the “non-intervened slum”, 18% are “fully satisfied”, 59% are “somewhat satisfied”, 14% are “neither satisfied nor dissatisfied”, 8% are “slightly dissatisfied” and the
rest 1% are “highly dissatisfied” with the overall performance of the present water supply system. Level of satisfaction of the households in terms of the overall performance of the present water supply system in addition to some other aspects like water quality, management and service delivery for intervened and non-intervened slums are shown in Figure 4.21. In crisis situation like when the present water supply system is broken or become non-functional, the households collect water from other sources, which include collecting from neighboring households, from pump-houses and mosques or buying water from street vendors.

Figure 4.20: Benefits of present water supply system

Figure 4.21: Level of satisfaction with present water supply system (Intervened and non intervened slum)
4.3.2 Variation in Access to Water among Slums

Whereas access to water is relatively good in all four slums, there are significant disparities among slums with respect to nature of access. In Badda Jheelpar slum (only private slum among the four slums surveyed), large number of households (25-30) use the same water point; one to one and a half hours is often required for collecting a pitcher of water. During FGD, the Badda slum dwellers also reported significant problem in availability of water; sometimes there is no water or water comes in drops. In the absence of water, people are often forced to take bath in the nearby Gulshan Lake. In this slum, which is built on private land, there is no provision for separate payment for water; water bill is included in the monthly rent of houses.

In Vawalbagh Rail-line slum, most people buy water from community water points managed by a section of influential community people; cost of water varies from taka 1 to taka 5 per Kolshi (each Kolshi can hold about 10 to 12 Liters of water). Water requirement varies from 10 to 20 Kolshi per day. Here, 80% respondents reported spending over 300 taka per month, and 46% reported spending over 500 taka per month for water. However, no major problem with availability and quality of water was reported by the respondents.

In Moghbazar Peyarabagh slum, residents collect water from tubewells connected to water supply lines; water is always available. About 67% respondents spend less than or equal to 200 taka, and 28% spend 200-300 taka per month for water.

In Vashantek slum, an NGO “Water for All” is facilitating water supply from DWASA; all connections (about 500) given so far are metered. 73% respondents spend taka 100 to 200, and 23% spend taka 200 to 300 per month for water. In general, no major complaints were made regarding quantity and quality of water.

4.3.3 Community Participation in Water Supply

In general, considerable numbers of HHs in both intervened (43%) as well as non-intervened (41%) slums were involved in the selection of the type of the water supply system. In the intervened slum (i.e., Vashantek) financial and technical support for installation of water option came primarily NGOs (49%); whereas in the “non-intervened” slums, both community (38%)
and the house owners (36%) played important roles. In the intervened slum (i.e., Vashantek), the beneficiaries (92%) are the main drivers for regular operation, maintenance and cleanliness of the water options. In case of the “non-intervened slum”, caretaker, appointed by the community takes major responsibility (56%) along with the community people in the operation, maintenance and cleanliness of the water points.

An in-depth analysis revealed significant variation in community participation in water supply among the four slums. Figure 4.24 shows roles of different stakeholders in selection of type of water supply system. In Vashantek (with ongoing NGO intervention) and Peyarabagh (with past NGO intervention) slums, community people and NGOs played major role in selecting type of water supply. In Vawalbagh slum, both community people and a section of “influential people” in the community (referred to in the figure as “other”) played major role in the selection process. In Badda slum, the only private slum among the four surveyed, there is virtually no role of community in selection of water supply option; the slum-owner takes decision regarding type of water supply option and site for water point.

Figure 4.24: Roles of different stakeholders in selection of water supply system in the slums

Figure 4.25: Roles of different stakeholders in selection of site for water points in the slums
The same is true with regard to selection of site for water point (Figure 4.25) and technical and financial support for the water supply system (Figure 4.26). In Vashantek and Perayabagh slums (with ongoing/ past NGO interventions), both the community and NGO played major role in selection of site for water point and providing financial/technical support for installation of water points. In Vawalbagh slum, a section of “influential people” (referred to in the Figure as “other”) within the slum played important role along with the community. On the other hand, in the “privately owned” Badda slum, the community had virtually no role in either selection of site for water point or providing financial/technical support for water point installation.

Responsibility of O&M of water points also varied among the slums depending on type of slum (on public or private land) and nature present/past intervention (Figure 4.27). As noted earlier, in Vashantek slum with ongoing NGO intervention, the beneficiaries (92%) are the main drivers for regular O&M and cleanliness of the water options. In Peyarabagh slum where NGO intervention took place in the past, caretaker, appointed by the community takes major responsibility (90%) along with the community people (10%) in the O&M and cleanliness of the water points. In Vawalbagh slum, community appointed caretaker and a section of “influential people” (referred to as “other in Figure 4.27) who control the “water business” take care of O&M. In case of privately owned Badda slum, community people (74%) and caretaker (26%) are responsible for O&M of water points.
4.4 SANITATION

4.4.1 OVERALL SCENARIO

While access to water supply was relatively good in all the surveyed slums (as discussed in Section 4.3), access to proper sanitation facilities has been found to vary significantly among the surveyed slums (Figure 4.28). The situation has been found to be particularly alarming in the privately owned Badda slum and Vawalbagh Rail-line slum. It should be noted that no intervention has taken place in the past in these two slums. In Badda slum, almost all (92%) latrines are unhygienic (i.e. without water-seal pan and venting system) latrines (Figure 4.29); only 6% latrines are sanitary (i.e., with water-seal & pan). During FGD, participants reported that open defecation is still practiced by some children living in the slum. In this privately owned slum, the slum owner is not interested to install sanitary latrine, while slum people are not permitted to construct latrines. Because of this, a very unhealthy situation is prevailing in the slum (Figure 4.30).

![Figure 4.28: Sanitation options in the surveyed slums](image)
In Vawalbagh slum, the situation is even worse, where 20% of the respondents are still practicing open defecation and majority of the latrines are unhygienic (i.e., without water-seal pan and venting system). All sanitation facilities in this slum are located on the western side of the rail line, and people living on the eastern side of rain line have to cross the rail line for accessing toilets. This difficulty has contributed to the high prevalence of open defecation. The condition of toilets in this slum has been found to be very poor (see Figure 4.31). Incidences of children falling into toilet were reported by participants in the FGD. Financial difficulties and temporary nature of settlement were reported as reasons for not having better toilets.
The situation is much better in Peyarabagh and Vashantek slums; unhygienic (i.e., without water-seal pan and venting system) latrines account for only 2% and 4% sanitation facilities, respectively in these two slums. Open defecation has been completely eliminated from these two slums. In Peyarabagh slum, many of the toilets constructed during past intervention by DSK are still working satisfactorily. However, queue is often seen in front of the toilets in the morning. In Vashantek slum, 37 sanitary latrines have been installed by DSK under the ongoing intervention. However, it has been reported during FGD that many of the latrines constructed under earlier “intervention” are not functioning properly, and have become unhygienic.

In Vashantek (“intervened”) slum, 98% HHs and in the three “non-intervened” slums 80% HHs disposes the feces of children in latrines. 14% HHs in the “non-intervened” slums were found to practice unhygienic means of disposing feces of children. Person with disability (PWD) in Vashantek slum defecates mostly in latrines (75%) or in other fixed place (25%). In the “non-intervened” slums, 62% of persons with disability defecate in latrine, 25% in other fixed places and rest practice open defecation. In Vashantek slum, 38% latrines and in the “non-intervened slums” 13% latrine have stairs with railing to be used by the persons with disability (PWD) or elderly people.

Separate toilet facilities are available for women and girls according to the 71% and 15% respondents in “intervened”(i.e., Vashantek) and “non-intervened” slums, respectively. 77% respondents of the three “non-intervened” slum reported that the location of latrine is not suitable for easy and convenient access by women and girls during night. In Vashantek slum, only 16% respondents opined that the toilet location is inconvenient. In all four surveyed slums, there are discrepancies in terms of opportunity of toilet use by women. 18% respondents in intervened Vashantek slum and 48% respondents in non-intervened slums complained that women do not get the equal opportunity for using the toilet.
Number of households using the same toilet was found to be as high as 50 in Vashantek slum, and even higher in the “non-intervened” slums. In the morning when everybody tries to go to latrine, queue is developed, and this is a common scenario in all four slums. Queuing time varies from less than 10 minutes to 60 minutes; most of the respondents reported a waiting time of 10-20 minutes. In Vashantek slum, 72% of latrines are located within 30 feet of water point, while in “non-intervened slums”, 57% are located within 30 feet (Figure 4.32).

Most of the households (64%) in Vashantek slum used to defecate in unhygienic latrines before installation of present sanitation system; open defecation was also significant (8%). The present system is satisfactory to 86% respondents of Vashantek slum, while 77% respondents of the non-intervened slums are not satisfied with their present sanitation options. Major benefit of present sanitation system as identified by 42% of the respondents in Vashantek slum was odor free environment.

There is no organized fecal sludge management (FSM) service in any of the surveyed slums. When the pit or septic tank of sanitary latrine, sanitation block, and cluster latrine becomes full, then the household/community call sweeper to clean the septic tank/pit manually or sometimes they utilize mechanical equipment (only in Vashantek slum, as reported by 54% respondents). Pit emptying practices in the slums are shown in Figure 4.33. The emptied sludge is directly discharge into drains, ditch/water bodies or low lying areas,
as reported by 25% and 55% HHs, respectively in the intervened (Vashantek) and non-intervened slums. This practice is causing serious environmental pollution and posing risks to public health. Very few reported discharge into municipal sewer network and a significant number of households have no idea/knowledge on this issue. Details are shown in Figure 4.34. Desludging of pit/septic tank in an environmentally friendly way is a major issue and in intervened slum 61% households want an environment friendly pit emptying service and they are willing to pay for such service. However, in non-intervened slums, most of the households (74%) did not feel any necessity for such a service and they are not willing to pay for this service.

![Figure 4.33: Emptying scenario of pit/septic tank](image)

![Figure 4.34: Dumping practice of septic tank/pit sludge of emptying](image)

### 4.4.2 Community Participation in Sanitation

Similar to the case for water supply, significant variation has been observed in community participation in sanitation among the four slums. Figure 4.35 shows roles of different stakeholders in selection of type of sanitation system. In Vashantek (with ongoing NGO intervention) and Peyarabagh (with past NGO intervention) slums, community people and NGOs played major role in selecting type of sanitation system. In Vawalbagh slum, both community people and house owners played major role in the selection process. In the privately owned Badda slum, there is virtually no role of the community in selection of sanitation option; the slum-owner takes decision regarding type of sanitation option.
The same is true with regard to selection of site for sanitation facilities (Figure 4.36) and technical and financial support for the sanitation system (Figure 4.37). In Vashantek and Perayabagh slums (with ongoing/past NGO interventions), both the community and NGO played major role in selection of site for latrines and providing financial/technical support for installation of latrines. In Vawalbagh slum, community people and house-owners play major role, while in the “privately owned” Badda slum, the community has virtually no role and slum-owner controls everything.

Responsibility of O&M of sanitation facilities also varied among the slums depending on type of slum (on public or private land) and nature present/past intervention (Figure 4.38). As noted earlier, in Vashantek slum with ongoing NGO intervention, the beneficiaries (92%) are primarily responsible for regular O&M and cleanliness of the sanitation facilities. In Peyarabagh slum where NGO intervention took place in the past, caretaker, appointed by the community takes major responsibility (92%) along with the community people (8%) in the O&M of sanitation facilities. In Vawalbagh slum, community people and (80%) and a section of “influential people” within the slum (18%) (referred to as “other” in figure) take care of O&M. In case of privately owned Badda slum, community people (56%) and caretaker (20%) are primarily responsible for O&M of sanitation facilities.

In Vashantek and Peyarabagh slums (with ongoing/past NGO intervention), where the community has a strong role in selection of type/site and O&M of sanitation facilities, the sanitation systems are in much better condition, compared to those in Badda and Vawalbagh slums where the community has virtually no role (Badda slum) or limited role (Vawalbagh slum).

![Figure 4.35: Role of stakeholders in selection of specific type of latrine](image-url)
Figure 4.36: Role of different stakeholders selection for the installation of latrine

Figure 4.37: Initial financial and technical support provided for installation of latrine

Figure 4.38: Responsibility for O&M and cleanliness of the latrine
4.5 HYGIENE AWARENESS AND PRACTICES

According to survey results, the reported hygiene practices by the households are comparatively poor in the non-intervened slums. The reported hand washing practice by households before taking meals in the intervened (Vashantek) slum is 100%, and after defecation 98%; whereas in non-intervened slums, these are 82% on an average in both cases (see Figure 4.39 and Figure 4.40). Vawalbagh slum appears to be lagging behind the others in this respect. 100% household members reported wearing sandal (slipper) before going to latrine in Vashantek slum, compared to 96% in non-intervened slums. The survey also revealed that in intervened slum, 98% household members wash their hands before feeding and after anal cleansing of their children, which are slightly better in comparison to the non-intervened slums, where the figures are 82% and 78%, respectively (see Figure 4.41 and Figure 4.42). Although the “reported hygiene behavior” is encouraging, it should be kept in mind that “actual hygiene practice” are often poor among communities, as revealed in the national hygiene survey (PSU-ICDDR’B-WaterAid, 2014).

In Vashantek slum, about 78% households practice hand washing with soap and 10% with ash; the corresponding figures in the non-intervened slums are 47% and 3%, respectively (Figure 4.43). In intervened slum, all (100%) households have enough water for bathing and washing clothes and 98% can take bath every day; whereas in non-intervened slums, these figures are 76% and 95%, respectively. 50% women and adolescent girls in intervened Vashantek slum and 46% in non-intervened slums can take bath privately. In Vashantek slum, 90% and in non-intervened slums 67% household members cover their food (Figure 4.44).

![Figure 4.39: Hand washing practice hands before taking meal](image)

![Figure 4.40: Hand washing practice after defecation](image)
Sufferings from various waterborne diseases like diarrhea, dysentery in the four slums are almost similar. 41% of households in intervened Vashantek slum and 27% in the non-intervened slums think that their behavior on hygiene practices has been changed gradually. Majority (over 95%) of the respondents in all four slums demanded more support in
WASH for further improvement of hygiene practice in their community. Though 89% of women have sound knowledge on menstrual hygiene management in the Vashantek slum, 49% of the respondents reported that they face different kind of difficulties related to menstruation. In the non-intervened slums only 49% women on an average have sound knowledge on menstrual hygiene management and 51% respondents mentioned about difficulties during menstruation. The difficulties cited include (Figure 4.45) drying of used clothes, washing of used clothes and physical illness. In intervened Vashantek slum 45% women and in the non-intervened slums only 15% women said that safe and suitable menstrual hygiene management facilities are available and women and adolescent girls can manage their menstruation hygienic maintaining privacy.

![Figure 4.45: Difficulties faced in menstrual hygiene management](image)

### 4.6 OTHER RELEVANT ASPECTS

Majority of respondents in the surveyed slums (96% in Vashantek slum and 68% in the non-intervened slums) could not recognize the existence of any systematic approach (such as composting or van collection) for solid waste management (SWM). Overall about 20% respondents participated in campaigns or awareness raising sessions on Solid Waste Management.

Most of the households (83%) in the studied slums drain household wastewater in nearby drains or khals/lakes. As shown in Figure 4.46, the other options for draining the wastewater are platform of the water-point, railway track, low lying area and WASA’s sewer network. Half of the respondents in intervened Vashantek slum (Figure 4.47) and 32% respondents in the non-intervened slums have identified water logging as a major problem.
in their community. According to 14% respondents in Vashantek slum and 39% in the non-intervened slums, this problem at present is being taken care of by manual drainage of wastewater at distant location; about 25% respondents in all four slums said that they just clean the existing drains. Many respondents expressed their concerns for no action in this regard, which is exacerbating their sufferings. Details are showed in Figure 4.48.

![Figure 4.46: Drainage of household waste water](image1)

![Figure 4.47: Water logging/ drainage congestion at Vashantek slum](image2)
Most of the respondents (61%) in intervened slum and only 7% respondents in non-intervened slums opined that their communities have firefighting preparedness. However, majority of the respondents (80%) in intervened Vashantek slum and 45% respondents in the non-intervened slums told that it would not be possible for the firefighting vehicles to enter into the slum due to narrow road. Fire outbreaks have been reported in Vashantek slum (during FGD), which are usually taken care of by slum people themselves.

High price and availability of fuelwood are important concerns. Indoor air pollution from cooking was not reported as a major problem. However, from observation of cooking practices (using traditional cookstoves) made during field visits (e.g., blackened surfaces of walls, Figure 4.49), it appears that indoor air pollution could be significant in the slums. This needs to be addressed through introduction of improved cooking stoves (ICSs) and other interventions.
4.7 FINANCIAL ASPECTS

Among the slums surveyed, residents of the privately owned Badda slum do not pay separately for water; it is included in their house rent. Most of the respondents of the other three slums pay for using water on a monthly basis (Vashantek and Peyarabagh slums) or buy water as needed (Vawalbagh slum). Figure 4.50 shows amount of money spent by households for water. The water bill is collected by the members of the Water Management Committee in 65% cases and by NGOs in 35% cases in Vashantek slum. Only 37% residents of Peyarabagh slum reported paying for use of latrines. The reported payment varies from less than Taka 30 to more than Taka 150 per month (Figure 4.51).

![Figure 4.50: Amount paid by HHs per month for water](image)

![Figure 4.51: Amount paid by HHs per month for using latrine](image)

Residents of Vashantek slum (with ongoing NGO intervention) and Peyarabagh slum (with past NGO intervention) contributed to the water supply options. 23% respondents of Vashantek slum and 15% respondents of Peyarabagh slum reported contributing for installation of present water options. Among the contributors, 34% were only monetary contribution, 11% were non-monetary and 55% were both monetary and non-monetary contribution (labor) 85% of those who made monetary contribution paid more than 500 taka in the Vashantek slum. In Peyarabagh slum, only 13% of those HHs that made monetary contribution paid more than 500 taka. The monetary contribution for water supply option is
presented in Figure 4.52. Only some residents of Vashantek and Vawalbagh slums reported contributing for sanitation options, in the form of monetary contribution, non-monetary (labor) or both. Figure 4.53 shows the monetary contribution for sanitation options.

![Figure 4.52: Amount contributed by HHs during installation of water point](image)

![Figure 4.53: Amount contributed by HHs for installing sanitation option](image)

4.8 MAJOR CHALLENGES

Based on the results of this study, the following major WASH challenges are identified:

1. Sanitation services in many slums are still poor; privately owned slums are of particular concern in this regard, where WASH interventions (by GO/NGOs) would be a challenge.

2. Absence of fecal sludge management (FSM) is endangering the sustainability of sanitation services as well as public health and environment; initiating FSM services in slums (as well as other city areas served by on-site sanitation systems) is imperative but would also be a major challenge.

3. Integrating gender issues (with respect to design and use) and addressing special needs (e.g., for persons with disability, young and the old) are yet to be mainstreamed in sanitation interventions.

4. In many slums, ensuring long-term sustainability of water supply and water source still remains a concern.
5. With respect to hygiene, significant efforts are needed for converting good knowledge/awareness on hygiene behavior into practice.
6. Integrated approach (i.e., covering diverse challenges, beyond WASH) for slum development is needed for sustainable improvement of slums.

4.9 MAJOR OBSERVATIONS AND RECOMMENDATIONS

The important observations from the present study and recommendations to address the major challenges are summarized follows:

General Issues:
- WASH challenges vary significantly among slums; WASH challenges appear to be particularly acute in privately owned slums. Policy intervention is needed to make private slum owners accountable for providing adequate WASH services to the slum residents.
- Past and ongoing interventions have significant positive impacts; such interventions play a positive role in community mobilization and participation in decision making, in the development of facilities and their O & M.
- Active community participation promotes sustainability of WASH services. Future interventions should put more emphasis on community mobilization and participation of the community in implementation and management of WASH services.

Water Supply:
- Despite good access to water supply, there is significant scope for improvement, e.g., with respect to number and location of water points, price of water. DWASA-NGO interventions appear to be working well in expanding “legal” and sustainable water supply in slum areas. Initiative is needed to replicate such good practices.
- Water quality remains an area to be addressed more comprehensively in future interventions.
- Sustainability of water sources/options e.g., common reservoir, individual connections, etc. needs to be assessed in greater detail in future interventions. Entrepreneurship model for water point/water distribution management should be considered in future interventions.

Sanitation:
- Sanitation services are in a poor state in many slums, especially in non-intervened slums; the situation is particularly challenging in privately owned slums, where there is limitation in carrying out WASH intervention.
• Immediate intervention is needed to improve sanitation services in slums with poor sanitation coverage (e.g., privately owned slums), through involvement of City Corporation (who are responsible for on-site sanitation services), NGOs and the Development Partners.

• Sustainability of sanitation services is an important issue; both technology and management affect sustainability, and hence both should be addressed adequately in future interventions.

• Absence of fecal sludge management (FSM) services is affecting sustainability of sanitation services, and contributing to environmental pollution and spreading of diseases. FSM services should be included in future interventions.

Hygiene Practices:

• Despite having good knowledge about hygiene, poor hygiene practices, especially with regard to hand washing, appear to be a concern, and needs to be addressed in future interventions.

• Poor hygiene practices (e.g., disposal of childrens faces, cloth in toilet) affect sustainability of sanitation services, and should be addressed in future interventions.

Other Issues:

• Gender issues (e.g., separate toilets for women/girls, ensuring easy/convenient access of women/girls especially during night) and access of persons with disability (PWD) and children are often not addressed adequately. These issues need to be mainstreamed in future interventions.

• Drainage is a major problem, and should be addressed along with water supply and sanitation, considering micro (i.e., within the slum) - macro (i.e., surrounding the slum) drainage linkages. Increased wastewater due to improved water supply often aggravates drainage problem.

• Household garbage management including recycling should also be emphasized in future interventions to avoid clogging of drains as well as generate livelihood opportunities.

• Fire hazard, fuel wood, and indoor air pollution should be addressed in future interventions for inclusive development in slums.

• Other areas of development that were not within the scope of this study, e.g, internal road network and connectivity, access to electricity supply, education, etc. are also important issues to be addressed through integrated development approach to ensure sustainability.
References


ANNEX-I SURVEY QUESTIONNAIRE (ENGLISH VERSION)

WASH (WATER, SANITATION AND HYGIENE) CHALLENGES IN SLUM AREAS OF DHAKA CITY

Household Survey Questionnaire

Questionnaire number: ____________________________
Date: ____________________________

Name of the Location: ____________________________
House Address of the Respondent: ____________________________

1. Socio-economic Condition of the Respondent

Q1.1 Name of the Respondent: ____________________________
Q1.2 Does the respondent and the head of the household same person?  Yes  No
Q1.3 Age of the Respondent: (Completed Years) ____________________________
Q1.4 Gender of the Respondent: Male  Female
Q1.5 Educational Qualification: ____________________________

<table>
<thead>
<tr>
<th>Illiterate = 1</th>
<th>NFE = 2</th>
<th>Class I-V = 3</th>
<th>Class VI-VIII = 4</th>
<th>Other (specify) = 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC = 5</td>
<td>HSC = 6</td>
<td>13</td>
<td>14</td>
<td>15</td>
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<tr>
<td>16</td>
<td>17</td>
<td>18</td>
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</tbody>
</table>

Q1.6 Profession of the Respondent:

| Hawker | Rickshaw/Van/Cart puller | 7 | Handicraft /Small Cottage industry | 13 |
|________|_________________________|___|__________________________________|____|
| Laborer (Hotel) | Driver | 8 | Boatman | 14 |
| Laborer (Industry) | Servant service | 9 | Unemployed | 15 |
| Laborer (Construction) | Small Businessman | 10 | Retired/Aged | 16 |
| Laborer (Transportation) | No specific profession | 11 | House wife | 17 |
| Laborer (Garment) | Service | 12 | Other (specify) | 18 |

Q1.7 Profession of the Head of the Household (if not the same person): ____________________________
Q1.8 Gender of the Head of the Household (if not the same person): Male  Female
Q1.9 Family Members:

<table>
<thead>
<tr>
<th>Demography</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Children (below 18 years)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Q1.10 Number of person(s) with disability in the family</td>
<td></td>
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<td>-------------------------------------------------------</td>
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<tr>
<td>Demography</td>
<td>No.</td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
<td>[Blank]</td>
</tr>
<tr>
<td>Boys (below 18 years)</td>
<td>[Blank]</td>
</tr>
<tr>
<td>Girls (below 18 years)</td>
<td>[Blank]</td>
</tr>
<tr>
<td>Total</td>
<td>[Blank]</td>
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<table>
<thead>
<tr>
<th>Q1.11 Type of disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness</td>
</tr>
<tr>
<td>Deaf</td>
</tr>
<tr>
<td>Dumb</td>
</tr>
<tr>
<td>Other physical</td>
</tr>
<tr>
<td>Mental</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Q1.12 For how long you are living in the present community/ slum?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q1.13 House ownership:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner = 1</td>
</tr>
<tr>
<td>Tenant = 2</td>
</tr>
<tr>
<td>Other = 3</td>
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<table>
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<tr>
<th>Q1.14 Total Number of Earning Members:</th>
</tr>
</thead>
</table>

| Q1.15 Total Monthly Family Expenditure: |
| Tk. |

| Q1.16 Monthly saving: |
| Tk. |

| Q1.17 Total Monthly Income: |
| Tk. |

<table>
<thead>
<tr>
<th>Q1.18 Do you have you electricity connection in your house?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

If yes, then ask the next question, otherwise go to section 2

<table>
<thead>
<tr>
<th>Q1.19 How much you pay monthly for electricity? TK.</th>
</tr>
</thead>
</table>

2. Information about the Water Supply System

<table>
<thead>
<tr>
<th>Q2.1 What is the main source of drinking water for daily use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community based piped water supply (Legal connection-WASA)</td>
</tr>
<tr>
<td>Personal tube well</td>
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<tr>
<td>Community based tube well</td>
</tr>
<tr>
<td>Illegal piped water supply Connection- WASH</td>
</tr>
<tr>
<td>Pond/canal/river/surface water</td>
</tr>
<tr>
<td>Other, specify</td>
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<table>
<thead>
<tr>
<th>Q2.2 How many Households collect water from the same water source?</th>
</tr>
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<tbody>
<tr>
<td>Number of Households</td>
</tr>
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</table>

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<tr>
<th>Q2.3 Information about the Water Supply System</th>
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<tr>
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</tbody>
</table>
Q2.3  How many times and liters water do you get per day?

<table>
<thead>
<tr>
<th>Times</th>
<th>Times</th>
<th>Total Liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always / No limit</td>
<td>1 Two times a day</td>
<td>2</td>
</tr>
<tr>
<td>Three times a day</td>
<td>3 Other, specify</td>
<td>4</td>
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<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total Liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucket Big (50)</td>
<td></td>
</tr>
<tr>
<td>Bucket Medium (30)</td>
<td></td>
</tr>
<tr>
<td>Bucket Small (20)</td>
<td></td>
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<tr>
<td>Pitcher Big (30)</td>
<td></td>
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<tr>
<td>Pitcher Medium (20)</td>
<td></td>
</tr>
<tr>
<td>Pitcher Small (15)</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
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</tbody>
</table>

Q2.4 Is there a meter connection for the water line?

- Yes
- No

Q2.5 Is the platform around water point concrete made?

- Yes
- No

Q2.6 Where does the waste waters generated from the water source drain?

- 

Q2.7 Who selected the present water system?

- People of the community 1
- House owner 4
- Government organizations 2
- Other, specify 5
- NGO 3

Q2.8 Who provided initial financial & technical support to install water point at your Community?

- People of the community 1
- House owner 4
- Government organizations 2
- Other, specify 5
- NGO 3

Q2.9 Who selected the site for the installation of the water point?

- People of the community 1
- House owner 4
- Government organizations 2
- Other, specify 5
- NGO 3

Q2.10 Who is responsible for O&M and cleanliness of the water point?

- User Households 1
- Caretaker 2
- Other, specify 3

Q2.11 Who usually collects water for your household?

- Women/Girl of households
- Man/Boy of households
- Both
Q2.12 How far is the water source from your house (approximately)?
Please, specify ________ feet

Q2.13 Usually, how much time do you spend for the collection of water (approximately)?
Please, specify __________ Hour __________ Minute

Q2.14 Does the quality of water tested by any organizations?
Yes [ ] No [ ]

(If “Yes”, go to the next question; otherwise, go to Q2.18)

Q2.15 Please mention the name of the organizations that tested water quality:
________________________________________________________
________________________________________________________

Q2.16 Did you get the result of the tested water?
Yes [ ] No [ ]

Q2.17 Do they test the quality of water on a regular basis?
Yes [ ] No [ ]

Q2.18 What were the sources of collecting drinking water before introducing the present water system?
________________________________________________________
________________________________________________________

Q2.19 Please, mention major problems of the previously used water system.
________________________________________________________
________________________________________________________

Q2.20 How you have benefited from the present water system?
________________________________________________________
________________________________________________________

Q2.21 Do you think that there are scopes to improve the present water system?
Yes [ ] No [ ]

(If “Yes”, go to the next question; otherwise, go to Q2.23)

Q2.22 How the system can be improved?
________________________________________________________
________________________________________________________
Q2.23 Are you satisfied with the present water system; please mention the level of your satisfaction.

<table>
<thead>
<tr>
<th>Code</th>
<th>Water Quality</th>
<th>Fully Satisfied</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water Quantity</td>
<td>Somewhat Satisfied</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>Neither Satisfied nor dissatisfied</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>Somewhat Dissatisfied</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Overall performance</td>
<td>Fully Dissatisfied</td>
<td>5</td>
</tr>
</tbody>
</table>

Q2.24 If the water system is broken, what is your alternative source of water?

3. Information about the Sanitary Latrine system

Q3.1 Where do you defecate?

| Cluster Latrine | 1 |
| Sanitary Latrine | 2 |
| Sanitation Block | 3 |
| Unhygienic latrine (hanging) | 4 |
| Open Place | 5 |
| Other, specify | 6 |

Q3.2 Where do you dispose feces of children?

| Latrine | 1 |
| Other fixed place | 2 |
| No fixed place | 3 |

Q3.3 Is there any person with disability (PWD) in your family?

If yes, where they defecate?

| Latrine | 1 |
| Other fixed place | 2 |
| No fixed place | 3 |

Q3.4 Is there any ramp or stair facility in the toilet for disable or elderly people? If yes, what

| Ramp | 1 |
| Stair with railing | 2 |
| No extra facilities | 3 |
| Other, Specify | 4 |

Q3.5 How far is the latrine from the water source (approximately)?

Please, specify ___ feet ___

Q3.6 Do the women/girls have separate toilet?

Yes ___ No ___

Q3.7 Do you think the location and distance is easily accessible for women especially at night?

Yes ___ No ___
Q 3.8 Do all the women get the equal opportunity for using toilet?
Yes [ ] No [ ]

Q 3.9 How many Households use the sanitary latrine?

Number of Households [ ]

Q 3.10 Do you need to queue up for using toilet?
Yes [ ] No [ ]

If yes, when and how long you have to queue up? [ ]

Q 3.11 Who selected the specific type of latrine?

<table>
<thead>
<tr>
<th>People of the Community</th>
<th>Government organizations</th>
<th>NGOs</th>
<th>Both Community &amp; NGOs</th>
<th>House owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q 3.12 Who provided initial financial & technical support to install the latrine at your community?

<table>
<thead>
<tr>
<th>People of the Community</th>
<th>Government organizations</th>
<th>NGOs</th>
<th>Both Community &amp; NGOs</th>
<th>House owner</th>
<th>Other, specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q 3.13 Who selected the site for the installation of latrine?

<table>
<thead>
<tr>
<th>People of the Community</th>
<th>Government organizations</th>
<th>NGOs</th>
<th>Both Community &amp; NGOs</th>
<th>House owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q 3.14 Who is responsible for O&M and cleanliness of the latrine?

<table>
<thead>
<tr>
<th>User Households</th>
<th>Caretaker</th>
<th>House owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q 3.15 If answer of the above question is “1”, then who performs this duty in the household?

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Q 3.16 Where did you defecate before using the present sanitary latrine?

______________________________________________________________________________

Q 3.17 Do you feel better after using the present latrine?
Yes [ ] No [ ]

Q 3.18 How you have benefited using the present sanitary latrine?
______________________________________________________________________________
Q3.19 Are you satisfied with the present latrine option; please mention the level of your satisfaction.

<table>
<thead>
<tr>
<th>Level</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Satisfied</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat Satisfied</td>
<td>2</td>
</tr>
<tr>
<td>Neither Satisfied nor dissatisfied</td>
<td>3</td>
</tr>
<tr>
<td>Somewhat Dissatisfied</td>
<td>4</td>
</tr>
<tr>
<td>Fully Dissatisfied</td>
<td>5</td>
</tr>
</tbody>
</table>

Q3.20 What do you do when the pit/ septic tank of your latrine is full?

- Clean manually (Sweeper) 1
- Use mechanical equipment (e.g., vacutag) 2

Q3.21 Where is the pit/ septic tank sludge dumped?

<table>
<thead>
<tr>
<th>Option</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>In open drains, ditches/ water bodies, low lying areas</td>
<td>1</td>
</tr>
<tr>
<td>Have no idea</td>
<td>4</td>
</tr>
<tr>
<td>In municipal sewer network</td>
<td>2</td>
</tr>
<tr>
<td>Other (specify)</td>
<td>5</td>
</tr>
<tr>
<td>In treatment plant</td>
<td>3</td>
</tr>
</tbody>
</table>

Q3.22 Do you need to pay for pit emptying service?

- Yes
- No

Q3.23 Do you want such pit emptying service in your area?

- Yes
- No

(If "Yes" then ask the next question; otherwise go to section 4)

Q3.24 Are you willing to pay for the service?

- Yes
- No

4. Other relevant aspects

Q4.1 Is there any system for solid waste management in your community (e.g. Composting, Van collection)?

- Yes
- No

Q4.2 Have you received any training/awareness sessions on Solid Waste Management?

- Yes
- No

Q4.3 Do you think the overall environmental situation has been improved for adopting solid waste management process in your community?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Q4.4 Where do you drain household (kitchen, washing clothes) waste water?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

WASH Challenges in Slum Areas of Dhaka City
Q4.5 Do you have water logging problem in your community?
Yes [ ] No [ ]

Q4.6 What have you (or your community) done for solving the water logging problem?

Q4.7 Do you (or your community) have any preparation for fire hazard in your community/slum?
Yes [ ] No [ ]

Q4.8 In case of a fire event, would fire fighting vehicles be able to enter your community for fire extinguishing (i.e., are the existing roads wide enough for entry of fire trucks)?
Yes [ ] No [ ] Not know [ ]

5. Community’s contribution and financial aspects

Tubewell / Water Point

Q5.1 Do you pay water tariff for used water on a monthly basis?
Yes [ ] No [ ]

(If “Yes” then ask the next question; otherwise go to Q5.4)

Q5.2 How much money do you pay each month for water used?
Tk. ______ Per month ______

Q5.3 Who collect the monthly water bill for water used?

Member of the Water Mgt. Committee [ ] NGO [ ] House owner [ ]

Q5.4 Did you have any contribution to install the water point / tubewell?
Yes [ ] No [ ]

(If “Yes”, go to the next question and if “No”, go to Q5.11)

Q5.5 What kind of contribution you had to install the water point / tubewell?

Monetary [ ] Both (Money and labor, land, food grain, time) [ ] Non-Monetary (Labor, land, food grain, time) [ ]

(If answer “1 or 2”, ask the following question, otherwise go to Q5.11)

Q5.6 How much money did you contribute at the installation phase for building the water point?
Amount in Tk. ______

Q5.7 Do you have access to see all the documents of the water management committee including finance?
Yes [ ] No [ ]
Sanitary Latrine

Q5.8 Do you need to pay for usage of latrine?
   Yes ☐ No ☐

Q5.9 If yes, how much? ☐

Q5.10 Did you contribute in any form to install the latrine at the installation phase?
   Yes ☐ No ☐
   (If “Yes”, go to the next question and if “No”, go to Q6.1)

Q5.11 What kind of contribution you made to install the latrine?

<table>
<thead>
<tr>
<th>Monetary</th>
<th>1</th>
<th>Both (Money and labor, land, food grain, time)</th>
<th>2</th>
<th>Non-Monetary (Labor, land, food grain, time)</th>
<th>3</th>
</tr>
</thead>
</table>

(If answer “1 or 2”, ask the following question, otherwise go to Q6.1)

Q5.12 How much money did you contribute at the installation phase for building the latrine?
   Amount in Tk. ☐

Q5.13 Did you pay the money at a time?
   Yes ☐ No ☐

Q5.14 Do you have access to see all the documents of the sanitation management committee including finance?
   Yes ☐ No ☐

Q5.15 Did you pay the money at a time?
   Yes ☐ No ☐

6. Hygiene awareness and practices

Q6.1 Do you wash your hands regularly before taking meals?
   Yes ☐ No ☐ Sometimes ☐

Q6.2 Do you wash your hands before feeding your children?
   Yes ☐ No ☐ Sometimes ☐

Q6.3 Do you use sandal/shoe in the latrine?
   Yes ☐ No ☐ Sometimes ☐

Q6.4 Do you wash your hands after defecation?
   Yes ☐ No ☐ Sometimes ☐

Q6.5 Do you wash your hands after anal cleansing of your children?
   Yes ☐ No ☐ Sometimes ☐
   (If answer of Q6.4 or Q6.5 is “Yes”, go to the next question; otherwise go to Q6.7)
Q6.6 What do you use to wash your hands?

| Only Water | 1 |
| Soap | 2 |
| Ash | 3 |
| Soil | 2 |
| With available item | 5 |
| Other, specify | 6 |

Q6.7 Can you take bath every day?

Yes No

Q6.8 Do you get enough water for bathing and washing clothes?

Yes No

Q6.9 Can women and adolescent girls bathe privately?

Yes No

Q6.10 How do you preserve your meal?

| Always use cover on foods | 1 |
| Sometimes use cover on foods | 2 |
| Do not use any cover on foods | 3 |
| Do not give importance on the issue | 4 |

Q6.11 Do you or your family members suffered from water borne diseases (e.g., diarrhea) in last two (2) months?

Yes No

Q6.12 Do you think your behavior has been changed on hygiene practices gradually in your community in last ½ months?

Yes No

Q6.13 In future, what kind of support you needed in WASH related issues for further improvement of your community?


Please ask the following questions, if the respondent is women

Q6.14 Do you have sound knowledge on menstrual hygiene management?

Yes No

Q6.15 Do they face any kind of difficulties?

Yes No

Q6.16 What are the difficulties?
Q6.17 How safe and suitable menstrual hygiene management are available?
Yes [ ] No [ ]

Q6.18 Is there enough space and facility for women and adolescent girls to manage their menstruation in a hygienic and private way?
Yes [ ] No [ ]

General Observations:
Present situation of Latrine: _____________________________________________________
___________________________________________________________________________

Present situation of water: _____________________________________________________
___________________________________________________________________________

Thank you for your cooperation

Name of the Enumerator: ________________________________
Signature: ________________________________

Name of the Supervisor: ________________________________
Signature: ________________________________
Date: ________________________________
Focus Group Discussion (FGD)
Name of the slum: Badda Shahjadpur Jheelpar Slum
Ward No.: 21

Duration: 8:54 am to 9:30 am       Date: 22 April, 2014
Total presence: 14 persons;       Female: 7       Male: 7
Present community people are:

Md. Abdul Halim  Nazim Uddin
Asiya Khatun     Ms. Samia Khatun
Ms. Bokul        Abdur Rashid
Rubina Khatun    Hafizul Islam
Kona Akter       Nasima Khatun
Md. Shahjahan    Abdus Shohid
Akhi Khatun      Md. Roni

At the beginning of the discussion, Mr. Dhanesh from DSK welcomed and thanked all from coming at this discussion. He also explained the objectives of this FGD and sought their kind help by giving the required information. Mr. Dhanesh conducted the FGD and Mr. Md. Azizur Rahman from ITN-BUET documented the information/comments of the participants. Information was collected from the community people by asking questions on different aspects of WASH challenges like availability of water, quality of water, practices of collection of water; available sanitation facilities, hygiene practices and many other issues. The major findings are summarized below:

**Water Supply**
Community people told that they collect water from a water point. This water point is connected with the WASA new water line and this connection is metered. This meter is issued against the name of the household owner. Almost 95 household collects water from this only available water point. It takes about one to one and half hour for collection of one pitcher full of water. Almost all the time, there is a problem of availability of water at the water point because of low pressure and others pump water from the same line throughout the length of the pipe. Only one water point does not meet up their water requirement and they need more water point; at least one additional water need to be installed immediately.
They use this same water for drinking, cooking and bathing. They drink this water directly without boiling because they do not have enough fuel to boil the water. They have no gas connection but they have electricity. They did not pay water bill or electricity bill separately but these bills are included in their house rent. The household owner pays the electricity and water bill. Community people have no complaint against water quality but they have complaints against quantity. Sometimes in the afternoon they come back from work and need to take bath, but find no water in the water point or very little drops of water is falling from the tap and peoples are collecting that water standing in a queue. Then they have no option but to take bath with the polluted water of Gulshan lake (Jheel). They know this bad water could harm their body but they have no alternate.

Prior to the present water point, they used to collect water from the other water point that was far away from their home and sometimes bought water from the van at Gulshan. At present when sometimes water supply becomes interrupted then they buy water from van at Gulshan, this is more costly then the supply water though that water does not meet up their demand.

**Sanitation**

In this community there is no sanitary latrine. Only three unhygienic latrines are available for the 95 households. They have no scope of using sanitary latrine because the slum owner has no intention to make a sanitary latrine. They have no permission to construct a latrine. Human waste is polluting environment and the households those who are living beside these unhygienic latrine are becoming sick day by day due to bad smell from those latrines. They are using those unhygienic latrines because they have no other options. The children are using those toilets and some practices open defecation. Sometime they suffer from diarrheal and other water borne diseases due to this poor sanitation.

**Hygiene**

Community women told that she know the hygiene practice but they did not follow properly and many times they could not practice due to lack of facilities. Most of them told that they know little bit about hygiene practice. No NGO activity is running at present in this slum.

**Other Issues**

There was an outbreak of fire 5-6 years back. Now they are more aware and they use water for stopping the flame of fire after cooking. There is a chance of eviction because the slum owner has already contracted with a developer company for building multistoried building in this place where this slum is placed.
Focus Group Discussion (FGD)
Name of the slum: Boro Moghbazar 12 No. Peyarabag Slum
Ward No.: 35

Duration: 8:50 am to 9:20 am       Date: 22 April, 2014
Total presence: 13 persons;       Female: 9       Male: 4

Present community people are:
Md. Mozammel Huq       Abdur Rahman
Md. Habu               Nazma Khatun
Jahanara Begum         Mst. Sukuri Khatun
Mst. Nurjahan          Mohammad Ali
Mst. Jahanara Begum    Mst. Kulsum
Mst. Eti khatun        Fatema Begum
Mst. Haowa Begum

At the beginning of the discussion, Mr. Dhanesh from DSK welcomed and thanked all for coming at the focus group discussion. He also explained the objectives of this FGD and sought their kind help. Mr. Dhanesh conducted the FGD and Mr. Md. Azizur Rahman from ITN-BUET documented the information/comments of the participants. Information was collected from the community people by asking them questions on different aspects of WASH challenge. The major findings are as follows:

This slum was established a long time back in the land acquired by Bangladesh Railway. Most of the community people of this slum are from Madaripur district. Most of the householders are day laborer, riskshaw puller and most of the house wife’s serve as domestic help. Some of them also work in the garment industry.

Water Supply
No NGO work at present in this slum. There are three (3) supply lines of WASA. They pay bill monthly. They collect water from tubewells that are connected to the supply lines. Community people shared the cost of installation of tube wells. They always get water. The quantity of water is sufficient for fulfilling their demand; and quality is quite satisfactory except sometimes they get an unpleasant odor in the tubewell water. They store water in drum in their house premises for use. The responsibility of collection of water from the tube well or water point mostly lies with women and child of the houses. The community people told that the water was tested but they could not tell name of any organization who tested the water. They take bath at the court yard of the tube well and the platform of the tube well
was made of concrete and its height is relatively low and need to be raised. In some places the platform has been scoured. Waste water is drained by a concrete conduit constructed by a NGO, DSK in the last 6-7 years and this is the predominant option of drainage; along with this they take steps by manually drain the stagnant water in front of their houses during rain water.

Sanitation
DSK constructed 16 nos. of toilet and almost 14 nos. are using at present and the rest 2 nos. is used as storage room of materials that are used by the sweeper in the cleaning of toilet. The numbers of toilet almost fulfill the demand of the slum dwellers. Sometimes queue is seen in the morning at 7:00am to 8:00am when it is time to go out for work. Superstructure is still good and sanitation facilities are quite satisfactory in terms of water availability and cleanliness inside the toilet but septic tanks do not functional at present and fecal sludge management is not satisfactory. sweeper regularly clean the toilet and when tank of the toilet become full then the sweeper manually clean the tank and dump the human waste into the nearby available space that cause environmental pollution.

Hygiene
No NGO activity is running at present in this slum and no hygiene promotion activity is continuing at present but they know a little bit from their indigenous knowledge.

Other Issues
The slum dwellers do not get any facilities from the government side. Facilities they obtained from the NGO interventions a few years back, they shear those among them. They are having difficulties in cooking because they have no gas connection, although they are willing to pay for gas connection. For continuing study of children of the slum dwellers it is urgent to establish a school, they informed. In the summer season, sometimes load shedding occurs. The respondents informed that there is no chance of eviction from this place in the near future.
Focus Group Discussion (FGD)
Name of the slum: Vashantek slum
Ward No.: 15

Duration: 8:25am to 9:17 am
Total presence: 18 persons; Female: 14 Male: 4

Date: 26 April, 2014

Present community people are:

Ms. Nurjahan     Ms. Monowara Begum, Member, Ward no: 1
Ms. Jubeda Khatun     Ms. Ayatunnesa
Ms. Nurunnahar     Ms. Kohinur
Ms. Amena Khatun     Ms. Eyasmin
Ms. Jesmin     Ms. Rupban
Ms. Swapna     Nadia Khatun
Md. Abdul Momin, Vice-Chairmen     Ms. Shahida Khatun, CBO Member
Ms. Anjoli     Mr. Babul
Mr. Khokon Miah     Md. Golam Sarowar

At the beginning of the discussion, Mr. Dhanesh from DSK welcomed and thanked all from coming at this discussion. He also explained the objectives of this FGD and sought their kind help. Mr. Dhanesh conducted the FGD; Dr. Muhammad Ashraf Ali from BUET gave his input in conducting FGD and Mr. Md. Azizur Rahman from ITN-BUET documented the information/comments of the participants. Information was collected from the community people by asking questions on different aspects of WASH challenges like availability of water, quantity of water; sanitation facilities, hygiene practices and many other issues. The major findings of this FGD are summarized below.

**Water Supply**

Before the introduction of present water supply system, the community people used to collect water from nearby areas, including Dewan Para. But at now a NGO named “Water for All” is facilitating water supply in the slum with support from DWASA. Elevated water tanks have been constructed adjacent to the slum for storing water supplied from legal DWASA connections. Water is supplied to households via flexible pipes connected to water meters. The community people pay bill for water. Water for All is working in this slum since last two years and so far covered as section of the slum. For proper water supply, operation and
maintenance, a committee has been formed. Community people told that now they are now paying slightly more for water, but they are satisfied with the quantity and quality of water. The present supplied water is safe and there is more pressure in the pipe lines.

Water for All is collected the cost of meter and pipe line from the community people. They had made initial investment for this water supply. They are responsible for operation and maintenance of this water supply and they are taking one taka per day as service charge.

The community people use the water for drinking, cooking and bathing. They drink this water directly without boiling because they do not have sufficient fuel to boil water. They have no gas connection but they have electricity

Sanitation
In this community people know about sanitary latrine because of past interventions by different organizations. DSK provided 37 sanitary latrines and City Corporation provided about 400 latrines in the past. However, most of the latrines provided by City Corporation are now non-functional. DPHE also provided some latrines but that are not hygienic. DSK is providing limited DWATS services in the slum.

Currently, DSK is working in this community. 10-15 family applies for a latrine through CBO to DSK. DSK assess demand and then select site for installation of latrine together with the community. The user families are responsible for maintenance of latrines. The community people contribute 30 percent of the initial investment of the latrines. DSK is providing this service since last two years.

When the tank or pit of the latrine becomes full, the committee report to the CBO and they take steps to empty the tank. They are familiar with Vacutug service. It costs about BDT 1000 for emptying a tank, and the community people bear this expense. Local sweeper or labor also empty tanks manually, where Vacutug cannot enter; they dispose the fecal sludge in nearby low lying lands. Waste generated from the latrine goes to the storm water drain and other low-lying areas around the slum.

Hygiene
Community people are aware of hygiene practices because of past and ongoing NGO interventions in this slum. They wear sandals when they go to toilet and after coming back from toilet they wash their hands with soap. They cover food and water. The children are also aware of hygienic practice. Faces of the babies are disposed of into latrine. Hygiene practice has improved their health condition. Most of the participants received training on hygiene. The environment of the community at present is quite good.
Other Issues

Drainage congestion is a major problem in the slum and needs to be addressed immediately. Proper solid waste management is also needed. Gas connection is needed. The slum is located on government-owned land and there is risk of eviction. Community people received training on firefighting from the Fire Department. Fire incidences occur in the slum. Young people in the slum play major role in extinguishing fire.
Focus Group Discussion (FDG)
Name of the slum: Vawalbagh (Nakhalpara) Railline slum
Ward No.: 24

Duration: 8:44am to 9:24 am
Total presence: 19 persons; Female: 8, Male: 11
Present community people are:

Md. Ayez
Mr. Abdul Hamid
Mr. Zakir
Ms. Aiena Khatun
Md. Hossain Miah
Ms. Mukta
Ms. Morium Khatun
Ms. Sabana
Ms. Mala Khatun
Mr. Tazul Islam
Md. Zayedul
Mr. Bayazid
Mr. Shaharaz Miah
Mr. Abdul Hai
Mr. Mongol Miah
Ms. Feroza Khatun
Ms. Pervin
Ms. Jabeda Khatun
Mr. Moyen Uddin

At the beginning of the discussion, Mr. Dhanesh from DSK welcomed and thanked all from coming at this discussion. He also explained the objectives of this FGD and sought their kind help. Mr. Dhanesh conducted the FGD; Dr. Mahbubor Rahman Choudhury from BUET gave his input in conducting FGD and Mr. Md. Azizur Rahman from ITN-BUET documented the information/comments of the participants. Information was collected from the community people by asking questions on different aspects of WASH challenges like availability of water, quantity of water, sanitation facilities, hygiene practices and many other issues. The major findings of this FGD are summarized below.

Water Supply

Community people buy water from a water point. The installation cost of this water point was borne by the community people. The community people buy water at the rate of one taka per kolshi (pitcher) and almost 10 to 20 kolshi of water is required for cooking, washing and sanitation purposes. The households of this community are quite satisfied with the quality of supplied water, but sometimes sludge/iron is observed. Mostly women collects water from the water point and often there is queue for collection of water. It takes at least 20 minutes to collect water from the water point. Often there is a problem in availability of...
water at the water point because of low pressure and power failure. Only one water point does not meet up water requirement and they need more water points; at least one additional water point needs to be installed immediately.

The water is used for drinking, cooking and bathing. Community people drink water directly without boiling because they do not have enough fuel to boil water. They have no gas connection but they have electricity. Monthly electricity bill is about taka 200 to 300 for one fan, one light and one television. It takes five taka per person for bathing at the water point and some people take bath at the household by collecting water from the water point.

**Sanitation**

In this community there is no sanitary latrine. Only unhygienic latrine with poor superstructure is available. The superstructure is made of bamboo chatai enclosed with polyethylene sheet all around. The unhygienic latrine is built on the drain. Total 8 to 10 latrines are available at present. The installation cost of these latrines is borne by the community people of this slum. Location of these toilets is not so convenient for the children and women, especially at night because people living on the eastern side of rail line have to cross the rail line to access toilets located on the other side of the rail line. On a number of occasions, children fell into the toilet. Physically challenged people or the children go to toilet with the assistance of their parents. The community people could not install sanitary latrine because of financial crisis and temporary nature of the settlement. They dispose the household kitchen waste into drains because no collection service is available in the slum.

**Hygiene**

The community people told that they are aware of hygiene practice because some NGO peoples came to them and taught hygiene practice; however, they cannot not practice it properly because of unavailability of hygiene materials such as soap. Many in the community including children do not use sandals at toilet.

**Other Issues**

Two fire incidences occurred in the slum in the past year, and the community managed to extinguish the fire. The slum dwellers suffered eviction a few times in the past.