



WASH Programme of BRAC: An Empirical Study of Dhamrai Upazila

A Dissertation by

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ID# 12172004

MAGD, 4th Batch

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Statement of the Candidate

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Abbreviations

ADP	Annual Development Program
CBO	Community Based Organization
DPHE	Department of Public Health and Engineering
FO	Field Officer
GDP	Gross Domestic Product
GoB	Government of Bangladesh
HHs	House Holds
ICDDR-B	International Centre for Diarrhoeal Disease Research- Bangladesh
LGD	Local Government Division
LGED	Local Government Engineering Department
LGRD&C	Local Government and Rural Development & Cooperative
MDG	Millennium Development Goals
MoE	Ministry of Education
MoEF	Ministry of Environment and Forest
MoHFW	Ministry of Health and Family Welfare
MoWR	Ministry of Water Resources
NGO	Non- Government Organization
NILG	National Institute for Local Government
NSS	National Sanitation Strategy
NWSS Policy	National Policy for Safe Water Supply and Sanitation
PA	Project Assistant
PO	Programme Officer

SDP	Sector Development Program
UP	Union Parishad
UNICEF	United Nation Children Emergency Fund
VERC	Village Education Resource Centre
VWC	Village WASH Committee
WASA	Water and Sewerage Authority
WASH	Water Sanitation and Hygiene
WATSAN	Water and Sanitation
WHO	World Health Organization

Abstract

Safe drinking water, sanitation facilities and hygiene practices have very profound impact on human life. Especially, Bangladesh faces multiple challenges in the water, sanitation and hygiene sectors. BRAC has been working in this sector as a programme named “WASH Programme of BRAC” with major support of Netherlands government since 2006 to achieve millennium development goals (goal 4 & 7) on safe drinking water and basic sanitation. WASH Programme can be classified into two phases. First phase is called WASH I programme (during May 2006 to April 2011) and the second phase is called WASH II programme (during October 2011 to April 2015). The first phase has fulfilled sanitary latrine coverage to 25.6 millions, hygiene education coverage 38.8 millions and safe drinking water coverage 1.78 millions of people within the period of 2006 to 2011. WASH programme (WASH II) is currently running in 254 Upazilas including 150 Upazilas of the first phase.

This research work aims to accomplish an empirical study of WASH programme in Dhamrai Upazila. The objective of this study is to find out whether the WASH programme is benefitting the health condition of the poor.

Many poor people of our country usually deprive of getting safe drinking water and sanitation facilities due to many impediments and problems that can be expressed by three indicators; these are accessibility, affordability and usability. The aim of this programme is to make every people accessible or affordable to get the benefit of safe drinking water and use of sanitary latrine. Hygiene knowledge and hygiene practices are important for better health status.

From the research findings, it has been revealed that, in Dhamrai, around ninety percent respondents were attacked by diarrhoeal diseases more than five times in a year. But due to the effective activities of WASH programme, this percentage has now reduced to zero percent. This is obviously a great achievement of WASH programme in Dhamrai Upazila. In spite of having such big achievements the WASH programme in research area is not out of flaws. According to the research survey, though this programme has significant success in sanitation and hygiene sector, it has not fulfilled the demand of safe drinking water.

However, the improvement of health condition of the poor people of Dhamrai Upazila through the WASH programme has been reflected by the respondent’s opinion on the question ‘overall satisfaction level of the respondent on WASH programme’. Among forty respondents, 62.5 percent are satisfied and 32.5 percent are highly satisfied with the programme activities. That is, all the respondents except five percent are either ‘satisfied’ or ‘highly satisfied’ with the WASH programme. Finally, some policy implications have been made in the last chapter as recommendation that would be helpful for the programme authority and policy planners concerned with water, sanitation and hygiene sector.

Chapter 01

1.0 Introduction

1.1 Background:

More than a quarter of people in the developing world lack access to safe drinking water sources, and more than half lack sanitation facilities (UNICEF and WHO, 2008). Safe water, sanitation facilities, and hygiene are pivotal for sustenance of life. These three things are related to every aspects of human activity. Lack of safe drinking water and sanitation has a profound effect on health of human beings. They are the root causes of waterborne or diarrhoeal diseases, which have a significant impact on children. It is estimated that around 3900 children die from waterborne diseases everyday (UNICEF and WHO, 2008). In recognition of these facts, the Millennium Development Goal (MDG) targets include the proportion of people having sustainable access to safe drinking water and sanitation between 1990 and 2015. Inadequate water, sanitation and hygiene account for a large part of the burden of illness and death in developing countries. Inadequate water and sanitation services primarily impact the poor in developing nations as contaminated drinking water and inadequate supply of water cause water borne diseases- especially to the poor in developing countries.

There are several reasons why the low levels of safe drinking water and poor sanitation exist in such countries. According to human development report (UNDP 2009), poor sanitation can be a result of institutional fragmentation, weak national planning and low political status. Poverty is another barrier to progress. The poor households often lack the financing capacity to purchase sanitation facilities. This may lead to lack of appropriate and well- maintained excreta disposal facilities and inadequate control of vectors. Again, limited quantity and poor quality of water for hygiene purposes, low level of hygiene understanding, poor hygiene practice, and poor housing and drainage are the reasons that can increase disease prevalence in a community. Women tend to attach more importance to sanitation than men, but female priorities carry less weight in household budgeting in developing countries (UNDP 2009). The impact of inadequate water and sanitation services falls primarily on the poor, women and the children who are the main victims of poor health and sanitation due to unsafe drinking water.

The consequences of all collective failures to tackle water and sanitation problems have dimmed the developmental prospects for billions of people locked in a cycle of poverty and diseases. In adopting the Millennium Development Goal (MDG), the countries of the world pledged to reduce by half the proportion of people without access of safe drinking water and basic sanitation. Many developing countries are well on their way to meet the drinking water target by 2015. How does Bangladesh fare in achieving those goals? This study will try to look into that.

Improved hygiene (Hand Washing) and sanitation (latrine) have more impact than drinking water quality on health outcomes. These practices can reduce diarrhoea, parasitic infections, morbidity and mortality, and child growth (WHO: 1993).

Changing hygiene behavior is quite complex. Hygiene promotion is most successful when it targets a few aspects of behaviors with the most potential for impact. Based on extensive research, WHO and UNICEF (2008) have identified hand washing with soap (or ash or other aid) after defecation and before preparing food; safe disposal of faeces and use of latrines; and safe weaning food preparation, water handling and storage as the key hygiene behaviors. A recent review of all the evidences suggested that hand washing with soap could reduce diarrhea incidence by 47 percent and save at least one million lives per year. The same study found that most endemic diarrhoea is not water- borne, but transmitted from person to person by poor hygiene practices. So, only constructing water supply and sanitation facilities is not enough to improve health condition. Sanitation and hygiene promotion must be accompanied with the infrastructure investments.

Since 1972, BRAC has been working with its twin objectives of poverty alleviation and empowering the poor with a holistic developmental approach. It has made notable contributions in the field of micro finance, health and education. In order to achieve the MDG (Goal 4 and 7) of reducing child mortality and halving the number of people without sustainable access to safe drinking water and basic sanitation by 2015, BRAC initiated the Water, Sanitation and Hygiene (WASH) Programme in 2006. With the support of the Government of The Netherlands, BRAC WASH Programme plans to assist in achieving the target set forth by the Government of Bangladesh to fulfill the Millennium Development Goals. The programme is being executed in two phases. The first phase has been completed within the period of 2006 to 2011 benefiting hygiene education of 38.8 million people, safe drinking water coverage 1.78 millions, and sanitation coverage of 25.6 million people. The duration of second phase (WASH II) is from 2011 to 2015. This programme aims to contribute to the attainment of the Millennium Development Goals (MDGs) by providing integrated water services, sanitation and hygiene promotion expanding to underserved population in collaboration with Government of Bangladesh and other stakeholders as well as continuing activities of WASH I programme.

1.2 Problem Statement:

BRAC plans to achieve its goals on WASH Programme through participation and collaboration with people from national to village levels, where hygiene practices is the backbone of the programme supported by improved sanitation and safe water supplies. Capacity building workshop and training for different stakeholders, including government officials, local representatives and village leaders, are being organized for better and sustainable implementation of the programme. The WASH Programme has five major components;

1. Water: Renovation of existing/ traditional water sources, small piped water supply schemes by bore holes/ surface water, capacity development, innovation and technical options.
2. Sanitation: Installation and maintenance of sanitary latrines, micro enterprise development, revolving fund for poor, subsidy for hardcore poor, capacity building.
3. Hygiene practice: Behaviour change communication, advocacy, hand washing, social marketing etc.
4. School sanitation and hygiene education: Hygiene promotion and education, installation and maintenance of tubewell/ latrine, separate latrines for girls, school compound cleaning and disposal of solid waste.
5. Public- Private Partnership: Partnership with local sanitation entrepreneurs, Local Government Institutions (LGIs), Department of Public Health Engineering (DPHE) and other stakeholders such as the Watsan committee, Rural Electrification Board, Power Development Board and an advisory committee comprised of relevant specialized organizations.

(BRAC : 2011)

Since the inception of WASH activities, BRAC has been coordinating with influential stakeholders and community leaders, religious leaders and local representatives to implement the programme at the grass roots level. As a part of strong gender orientation, WASH focuses on women in all situations to participate in the programme and raise their voices in decision – making process. The WASH Programme is a joint effort of BRAC Health, Research, and Training Divisions along with its Micro Finance, and Education programmes. The programme will be considered successful if the access to and practice of safe water, sanitation and hygiene in the community continue beyond the programme period.

It needs to be pointed out that Government has adopted Sixth Five Year Plan (2011-16) on the basis of MDGs. Thus this is an appropriate time to examine the effectiveness of BRAC's WASH Programme. This study aims to just that. This research work has been conducted to gather information on different variables of safe water supply, sanitation and hygiene practices of population at a selected Upazila (Dhamrai Upazila) under WASH Programme so that an assessment of this programme can be drawn whether the programme is in the line of attaining relevant MDG goals which will help to apply suitable strategies for effective and successful completion of this programme towards attaining the MDG targets on safe drinking water and basic sanitation. The major elements of the WASH Programme (Safe drinking water, sanitation and hygiene practices) have direct impact on human health condition. So the success or failure of the programme can be assessed by the assessing the improvement of health condition of the poor people.

1.3 Research Objective

To find out whether the WASH Programme is benefiting the health condition of the poor people in Bangladesh.

1.4 Research Questions

1. Does WASH Programme adequately provide safe drinking water and sanitation facilities for the poor?
2. Has WASH programme been able to change the sanitation and hygiene practices of people?
3. Does WASH programme help to improve the overall health condition of people?

1.5 Rationale of the Study

In Bangladesh, every year a huge number of people are affected by diarrhoeal and water borne diseases and thousands of people die, especially the children due to drinking unsafe water, having poor sanitation coverage and for improper hygienic practices. So every family in the community especially the poor people should know about the contributing factors that result in diarrhoeal or water borne diseases. These risks are generated from unfavorable sanitary practices such as faecal disposal in open places, improper waste disposal, absence of latrines, lack of proper hand washing, poor food handling and lack of access to safe drinking water. Health experts opine that better hygiene practices help to ensure disease prevention and a healthy environment and it is integral to a healthy life.

BRACs WASH Programme is playing an important role in providing safe drinking water, ensuring sanitation, and encourage in practice of good hygiene behavior among the poor and distressed people in the rural area. The rationale of this study on WASH Programme is to provide a general idea about the activities of WASH Programme and to give an essence that to what extent the WASH Programme is fulfilling its objectives and finally to propose some policy implications that would help the WASH programme to set their future goals and activities towards attaining the MDG targets on water and sanitation.

1.6 Limitations of the Study:

The study is based on empirical data collected from only one Upazila, i.e. Dhamrai Upazila of Dhaka district. But collection of primary data from any rural area in Bangladesh is not an easy task. Respondents are not so much interested to talk about sensitive topics like personal hygiene or sanitation. Other important limitations are-

- Time and Resource constraints: Limited time and resources have been allotted for the completion of the study. Because of this limitation, the researcher had to select only one Upazila among 254 Upazila, where WASH Programme is running their activities.
- Small sample size: Only forty respondents were selected (on the basis of random sampling) from an Upazila.
- Access to rural women: The rural women respondents usually feel shy to sit for interviews. So it was difficult to get extensive data from them. Moreover, to unveil the hygiene behavior is very complex and tough task through interview method. Observation method could have been better for this purpose. But due to time constraint, it was not possible.

1.7 Methodology:

Research aims to help solve problems and investigate relationships of the numerous variables that exist around us. Methodology is the study of methods and deals with the philosophical assumptions underlying the research process, while a method is a specific technique for data collection under those philosophical assumptions. Two broad methodological positions are generally discussed;

1. Positivism is the epistemological position that advocates the application of methods of the natural sciences to the study of social reality.
2. Interpretive assumes that social reality can only be understood through social constructions such as language, consciousness and shared meanings.

Research method is the functional action strategy to carry out the research in the light of theoretical framework and guiding research questions and /or the proposed hypotheses. Research method is therefore, a planned and systematic approach of investigation that denotes the detailed framework of the unit of analyses, data gathering techniques, sampling focus and interpretation strategy and analysis plan. (Aminuzzaman: 1991)

1.7.1 Research Design:

This study relies on both primary and secondary sources. The primary data was collected with the help of questionnaire in interview method and case study. Information on water, sanitation, hygiene and other demographic and socio economic variables for each respondent was collected using structured and closed questionnaire. The structured type of questionnaire were set in such a way that it contained definite, concrete and pre ordinate questions and there is no options to add comment on the questionnaire on behalf of the respondent. The given questionnaire is also termed as closed questionnaire as it is categorized in such manner that the respondent have to choose the answer from a set of provided options. Respondent had no liberty to express own judgment but to respond in the light of the given categories.

Two case studies on the respondents were also done to get in depth and detailed knowledge about the impact of WASH Programme through their behavior, attitude, experience which helped to suggest some policy implications about the programme.

Table 1: Information of research methods at a glance

No	Topic	Description
1	Research Methods	i. Interview method ii. The Case Study
2	Questionnaire type	Structured and closed
3	Sample size	40 people (Respondent)

1.7.2 Data Analysis:

The collected data have been analyzed to find out the practical scenario of WASH Programme, the benefits and the satisfaction level of the respondent, and finally to suggest some policy implications about the programme.

For better interpretation, the collected data have been presented in a tabular form. For easy understanding of the readers, sometimes data have been presented in graphical or chart form. Simple statistical tools like Statistical Package for Social Science (SPSS), Excel etc have been used to data analysis.

1.8 Organization of the Study

The study has been compiled with five chapters; each of which has been focused on a distinctive aspect of the thesis. Chapter one introduces the topic of the thesis. It also covers the problem statement, objectives, research questions, rationale of the study, limitations, research methods and methodologies and lastly organization of the study. The second chapter named 'Literature Review' has been arranged and discussed about the available works pertinent to the thesis topic. The third chapter has been furnished on 'programme concept and strategies' of the specific programme that has been studied. The fourth chapter is the most important one of the paper. Here data collected from the respondents and secondary sources have been analyzed and arranged in tabular, chart, bar or other graphical form by using SPSS, Excel and other methods. This help to explain different findings and subsequent analyses of the study. The fifth chapter has made up with some observations and recommendations on the programme to fulfill the needs of drinking water and basic sanitation in Bangladesh. The last chapter has drawn the end line with concluding remarks.

Chapter- Two

Literature Review

2.1 Introduction

Many people of Bangladesh were not aware enough about safe drinking water and sanitation issues even a few decades ago. Rural people usually used ponds, rivers or canals water for their drinking purpose. Most of the people had no conception about sanitary latrines. After the independence of Bangladesh, Government has been trying to upgrade the situation by adopting different policies on safe drinking water, sanitation and hygiene. Government has also established different institutions like DPHE, WASA, LGD etc. related to safe drinking water and sanitation. Many NGOs are also working in this sector. Among these, BRAC's involvement in has been added a new dimension. The effective collaboration of GO and NGOs can help to improve the health condition of the poor people by ensuring safe drinking water and basic sanitation facilities of our large segment of rural people.

2.2 Drinking water and sanitation scenario in rural Bangladesh:

Water

The sources of pure drinking water in our country are mainly surface water and sub surface water. As surface water is contaminated in many ways, shallow tube wells are massively used for collecting pure drinking water from sub surface. Though government has installed water treatment plant in urban areas including city corporations and distribute drinking water to the community through WASA, rural people has deprived of pure drinking water coverage. In addition to government programmes, the private sector and NGOs were encouraged to install more shallow wells in rural Bangladesh for drinking and other domestic purposes. About 97% of our population is getting access of safe drinking water through shallow wells that contribute a drastic reduction in deaths due to diarrhoeal diseases.

However the intrusion of arsenic contamination into shallow tube wells turned this success into a disaster. Arsenic has been found in ground water over large areas in Bangladesh. Moreover, Bangladesh is facing other water problems such salinity, high iron concentrations, and declining ground water tables. Furthermore, the surface water is declining in quantity and contaminated in quality. So we see a crisis of pure drinking water in our country which is becoming acute day by day.

Sanitation

Sanitation can be defined as the management systems that ensure the hygienic disposal of excreta and waste water at household level and results in a clean and healthy living environment around the home, including the management of solid waste (domestic and industrial), and treatment of sewage effluents. Sanitation is the hygienic means of preventing human contact from the hazards of wastes to promote health.

The ‘National Sanitation Strategy of 2005’ focuses on hygienic sanitation coverage which is defined as individual or shared by maximum two households of the following types:

- Flushed and pour-flushed toilet/latrines to piped sewer system or septic tank
- Pit latrines with slab and water seal or lid or flap
- Ventilated Improved Pit Latrines
- Composting latrines

The Government considers a “hygienic” latrine to be one which confines faeces, has an intact water-seal or other tight pit closure, and is shared by no more than two households. BRAC WASH adheres to this national definition.

The number of cement rings depends on the quality of the soil. For stable soils, the number of rings has been kept to a minimum of one. In the first 4 years of the project, there seemed to be challenges in sustainability of the latrines after the pit was filled. In response, there was a shift from a single pit to a twin-pit latrine with a simple superstructure. The parts and elements of the superstructure are produced and marketed by Rural Sanitation Centers (RSC) whose owners are trained and often supported by a loan from BRAC-WASH.

Bangladesh has made significant progress in the field of sanitation. In 1983 about 1 percent of the population had access to sanitary latrines. With considerable national effort, this had risen to 33 percent in 2003, surpassing neighboring countries like India. The most recent official government estimate of “hygienic” latrine coverage in rural areas is 88 percent. Through the programme, 25.6 million people gained access to hygienic sanitation facilities by April 2011, including 4.24 million who received subsidies or loans, 9.3 million people using hygienic latrine by changing or fixing water seal with pan and another 6.93 and 5.03 million who were motivated within the programme to construct with their own resources and with the support from other agencies respectively. This has surpassed the original target for WASH I of providing access to hygienic sanitation for 17.6 million people. (BRAC: 2011)

However, a major effort is still required to achieve the targets set for sanitation in the Millennium Development Goal (MDG). Bangladesh continues to face multiple challenges that make it difficult to ensure basic services to the citizens. In the water hygiene and sanitation sector, these challenges include-Reaching the poorest people, Inconsistent hygiene practices, Water quality, Issues related to quantity (flooding, drought and water management), improving sanitation technologies for the poor who live in high water table areas. The institutional setting is complex for addressing these issues. Capacity and management skills need to be improved, particularly at the intermediate level that links to the union and community. The government has had limited success in targeting the poor and the hardcore poor- those with little or no disposable income. It has also proved difficult to ensure the sustainability of the provided water and sanitation services. However, the government has recognized some of the inherent programme weaknesses and has invited NGOs to support its efforts to attain the MDGs targets on basic sanitation and safe drinking water supply.

Hygiene

We know that only to ensure water supply and sanitation facilities is not enough to improve people's health condition, hygiene practices are essential. This programme has adopted a number of practical approaches to promote hygiene messages that are based on socio-economic and hydro geological conditions, culture and existing practices. For sanitation, hygiene practices refer to cleaning and maintaining latrines, the use of these toilets by everyone in the home, as well as replacement when the pit is full. Water hygiene focuses on cleanliness and maintenance of the water source, as well as hygienic management of water, that is, collection, carrying, preservation, cooking and consumption. Water hygiene also refers to safe transportation and storage of water in the home and maintaining safe distance between the tube wells and the latrine. Importantly, BRAC also promoted certain personal hygiene behaviors provide a significant health advantage, including hand washing with soap at critical times and the safe disposal of the young child's excreta. Developing hygienic practices depends on motivation towards the new practice, skills to carry them out, and an enabling environment making it possible to actually carry out the practice.

2.3 Government policies and strategies on water and sanitation:

2.3.1 Related Policies in Bangladesh:

Bangladesh government has adopted different policies, and developed a range of policy documents specially focusing on sanitation and water. Some of these policies are mentioned below:

National Policy for Safe Water Supply & Sanitation (NWSS Policy), 1998

The National Policy for Safe Water Supply and Sanitation is the most comprehensive policy document governing the water supply and sanitation sector. The policy mentions that the Government's goal is to ensure that all people have access to safe water and sanitation services at an affordable cost. The policy emphasizes elements of behavioural changes and sustainability through user participation in planning, implementation, management, and cost sharing. Ensuring the installation of one sanitary latrine in each household in the rural areas and improving public health standards through inculcating the habit of proper use of sanitary latrines are mentioned among the objectives. This is a combination of full subsidies and self financing.

About urban sanitation, the policy objective is to ensure a sanitary latrine within easy access of every urban household through technology options ranging from pit latrines to water borne sewerage. Installing public latrines in schools, bus stations and important public places and community latrines in densely populated poor communities without sufficient space for individual household latrines are also emphasized. The government has budget provisions to install such facilities in public centers such as bus terminals, rail stations, inland water ports, primary schools, government secondary schools, etc.

The Policy aims to bring about changes in the traditional service delivery arrangements and to increase the capacity of the sector. It calls for decentralization and emphasizes that local government and communities shall be the focus of all activities relating to sanitation. All other stakeholders including the private sector, NGOs and development partners shall provide inputs into the development of the sector within the purview of overall government policy with the Department of Public Health Engineering (DPHE) moving towards a facilitating role. This policy was formulated in 1998 whereas the Village WASH Committee under BRAC WASH was formed only in 2007. (BRAC: 2004)

National Water Policy 1999 and National Water Management Plan 2004

The National Water Policy, promulgated in 1999, provides policy direction for the entire water sector. The goal of the national water policy is to address issues related to the harnessing and development of all forms of surface water and groundwater and management of these resources in an efficient and equitable manner. In line with the National Water Policy 1999, the National Water Management Plan 2004 was prepared for access to appropriate sanitation to all by 2010. (BRAC: 2004)

The National Sanitation Strategy 2005

The Bangladesh government developed a draft 'National Sanitation Strategy' in 2005, which describes the ways and means of achieving the national target by providing uniform guidelines. The Union Parishad has been identified as the focal point for the total sanitation campaign. The government had set itself an ambitious goal: to achieve 100% sanitation coverage by 2010. To ensure 100 percent sanitation by 2010 the government emphasized the following initiatives under the National Sanitation Dissemination:

1. Mobilize different government, non government and development organizations
2. Fulfill the coverage into three phases (2005, 2008 and 2010) for 100% sanitation by 2010 by local government institutions and NGOs.
3. All city corporations, Upazila, pourashava, ward, unions develop task forces involved for dissemination, and
4. Observe October as 'Sanitation Month'.

For this it would require a 12 percent per annum increase. But except some discrete success, this daunting task has been failed. But this challenging target has much pushed ahead the MDG goal concerning the drinking water and sanitation. The government is taking initiatives to achieve this national sanitation target in collaboration with development partners and NGOs.

The strategy focuses on 21 specific issues that include among others approaches for improving urban sanitation, reaching hardcore poor, sustainability, monitoring and

evaluation, emergency response and financing the sanitation programmes. It describes processes for improving sanitation coverage both in rural and urban areas:

- Capacity of local government institutions (LGIs), particularly Union Parishads and Upazilas, should be enhanced, so that they are capacitated to play key roles in improving sanitation coverage.
- DPHE should facilitate the LGIs in implementation of sanitation programs and should also be capable to monitor the quantity and quality of hygienic latrines.
- In cities, where large sections of the urban population are without sanitation services, service provision should be de-linked from land tenure-ship, thus allowing the utilities to extend their services to the slums.
- Public-private-community partnership is to be promoted for effective sanitation service delivery to slums. It is proposed that partnership be forged between public utilities/LGIs, NGOs/private sector and slum dwellers to set up and manage community sanitation solutions in all slums.
- The strategy also calls for enforcement of appropriate desludging of on-site sanitation systems and subsequent sludge disposal.

(BRAC: 2011)

The Pro-poor Strategy for Water and Sanitation 2005

The Pro-poor Strategy for water and sanitation services has been developed in recognition of two major needs. Firstly, there is a need for ‘direct attack on poverty’ as the benefits of growth are not distributed equitably. Secondly, the National Policy for Safe Water Supply and Sanitation, 1998 provides for a ‘safety-net’ for hardcore poor in conjunction with reducing subsidies over time. The strategy also gives operational definitions of hardcore poor households and basic minimum level of service. For sanitation the strategy states that the WatSan Committees will perform the job of identifying households who do not have the basic minimum service level.

National Development Plans and Strategies (PRSP II)

In order to address the development challenges in Bangladesh, the Government has prepared the National Strategy for Accelerated Poverty Reduction–Steps towards Change (2009-11), better known as the PRSP II. The national poverty strategy paper provides data and analysis on poverty reduction and other development challenges in the country.

The Government has already finalized the Sixth 5-Year Plan (2010-15). In the longer term, the government has prepared a Perspective Plan (2010-21) which will be implemented in the upcoming two 5-Year Plans. The national development plans and strategies set out the expected development outcome of the country and an important framework for investment by the government and Development Partners. Water supply and sanitation issues are set high on the development agenda. For example, one of the 12 targets of the Perspective Plan is “Ensure living accommodation for the entire population by 2015, supply pure drinking water for the entire population by 2011 and bring each house under hygienic sanitation by 2013”.

(BRAC: 2011)

Sector Development Programme (SDP 2010-25)

The Local Government Division of the Ministry of LGRD&C is preparing a Sector Development Plan (SDP) for the water and sanitation sector, a draft version is available and it is expected to be approved soon. The SDP is a strategic planning document to meet emerging and future challenges; it includes a road map for development and a corresponding investment plan. The SDP will be applied for a period of 15 years in three 5-years terms. The objective of the SDP is to provide a framework for planning, implementing, coordinating and monitoring all activities in the sector. The objectives and implementation modalities of the WASH II programme are in line with that as outlined in the rural sub-sector of SDP and thus will significantly contribute to the development of the water and sanitation sector as a whole in a planned and coordinated way.

MDGs and National Targets for Water Supply and Sanitation

The MDG (Millennium Development Goals) sets the target of halving the percentage of people without safe water and basic sanitation by the year 2015. In response, the Government of Bangladesh (GoB) set its national target of achieving 100% sanitation by 2010 which it later extended to 2013. This challenging target is much ahead of MDG target; thus, GoB has realized the importance of sanitation for sustainable development. The Government’s target for achieving full coverage with safe water supplies is the year 2011 which, it appears, may not be easily achieved. (BRAC: 2011)

2.3.2 Related Institutions and Projects

Local Government Division (LGD) and Department of Public Health and Engineering (DPHE) are the two main public sector agencies which work for water supply and sanitation facilities for the people. Besides these, there are some other government institutions which are also engaged in this sector.

- **Local Government Division (LGD)**

The Local Government Division of Ministry of Local Government, Rural Development and Cooperative is mandated to provide overall guidance to the sector. The Local Government Division is responsible for overall planning, identification of investment projects and coordination activities of agencies under it (DPHE, LGED, and WASA) and local government bodies, private sector, NGOs and CBOs.

- **Department of Public Health Engineering (DPHE)**

DPHE has emerged as the principal national agency responsible for planning, designing and implementing water supply and sanitation work throughout Bangladesh. Except Dhaka and Chittagong city areas, it is responsible for the implementation of water supply and sanitation projects in the whole country. DPHE is increasingly collaborates with private sector, NGOs, and CBOs both in rural and urban areas. Social mobilization and training was included in the DPHE activities in 1994 with the objectives of mobilizing inter-sectoral support and to strengthen community participation for sustainability and self reliance in water supply and sanitation. In addition, the introduction of ‘Tara Pumps’ and the ‘shallow shrouded tube well’, the ‘Very Shallow Shrouded Tube well’, ‘Iron Removal Plant’ and the ‘Pond Sand Filter’ for salinity affected areas are major technological achievement of DPHE Research & Development Project.

- **Other government institutions:**

Local Government Engineering Department (LGED)- It is responsible for rural infrastructure and assists municipalities in implementing infrastructure including water and sanitation on a project basis.

National Institute for Local Government (NILG) - Capacity development of local government bodies including Pourashavas.

Ministry of Education (MoE)- School sanitation in cooperation in cooperation with WSS projects, school health education.

Ministry of Health and Family Welfare (MoHFW)- Health and hygiene education with field staff at ward level.

Ministry of Water Resources (MoWR)- Water Resource Management, monitoring of water resources, allocation of water rights.

Ministry of Environment and Forests (MoEF)- Responsible for pollution control and water quality including monitoring of drinking water quality. MoEF is still to develop capacity to effectively perform its responsibilities.

2.4 NGOs relating to water and sanitation program:

In addition to BRAC, the robust NGO sector in Bangladesh has many institutions- large and small- of both national and international origin- that work in the water and sanitation sector. A selection from these is noted here, as examples of approaches and activities that might provide useful insights or services for this proposed programme;

- **CARE**

CARE has in the SAFE and later, the SAFER Project, worked to integrate water supply, sanitation with a dominant hygiene promotion/ education component focused on the household. Its project carried out in two districts with small partner NGOs, has involved action research and detailed monitoring on selected hygiene and sanitation behaviors such as hand washing. This approach and the book that has been prepared about it may provide useful insights into a strategy of behavioral change.

- **Water Aid Bangladesh**

Water Aid is a leading independent organization that enables the world's poorest people to gain access to safe water, sanitation and hygiene education. Water Aid has been in Bangladesh since 1986, working with 21 local partners to improve access to water supply and sanitation services for poor communities. It is currently working with Bangladesh government to build the National Sanitation Strategy, which would help them to reach universal access to sanitation by 2015.

- **ICDDR-B**

It means 'International centre for Diarrheal Disease Research- Bangladesh'. This internationally- known research and training institute has supported or collaborated in fundamental research related to arsenic contamination and its consequences since 2001. It also collaborates in basic impact research with BRAC.

- **PROSHIKA**

PROSHIKA has initiated 25913 hand tube wells 414106 sanitary latrines. It has established 487 latrine production support with RFL credit support. It has tested 15084 tube wells for arsenic as a consequence of emergency of the arsenic problem scaled down its hand tube well project.

- **VERC**

The Village Education Resource Centre (VERC) has been working on WATSAN since its inception in 1977. It is working in six districts in providing technology support for latrine and water point installation and hygiene education for behavioral change. It has developed nine models of latrine. VERC follows a participatory approach to 100% sanitation.

▪ **NGO Forum:**

It is an apex organization working exclusively in water and sanitation sector in partnership with local NGOs. It covers 10894 villages in all districts of the country. The core communication package of NGO forum is shared with all NGOs working in water supply, sanitation and health promotion including BRAC. (BRAC: 2011)

2.5 Background of BRAC involvement in water and sanitation programme:

In February 1972, BRAC was established as a relief organization to help rehabilitate the war affected people of Bangladesh. Gradually it turned its focus to poverty alleviation and empowering the poor. BRAC tries to bring about changes at the national and global level in policies on poverty reduction and social progress. BRACs core competency is the delivery of health, education microfinance and micro- enterprise services.

In May 2006, BRAC with support from the Government of the Kingdom of the Netherlands, launched the WASH project in 150 Upazilas (sub-districts) of Bangladesh having a total population of about 38.8 million. The project aimed to improve the health situation of the rural poor and enhance equitable development through: (1) provision of sustainable and integrated WASH services in the rural areas of Bangladesh; (2) inducing hygienic behaviors to break the contamination cycle of unsanitary latrines, contaminated water, and unsafe hygiene practices; and (3) ensuring sustainability and scaling-up of WASH services. Beginning with a six month start-up period and pilot work, WASH I developed and implemented a strategy that combines mass mobilization, bottom-up planning in close collaboration with the government at the Union and Upazila levels. The programme has been dedicated to integrating its three main components (sanitation, hygiene and water) while reaching the poor and hard-core poor and ensuring the participation of women at all levels. With its predominant emphasis on sanitation and hygiene, by the end of the project, in April 2011, 25.6 million people had improved, hygienic latrines; while hygiene promotion was targeted to the entire population in the area (38.8 million). A population of 1.78 million had access to new or improved water facilities.

After the successful completion of WASH I project (2006 to 2011), BRAC has initiated WASH II project (2011 to 2015) aiming to cover 248 sub districts (upazila) including continuation of 150 Upazilas of WASH I. This phase (WASH II) has the following main components:

1. Working in new areas: Integrated sanitation, hygiene and water in hard to reach, underserved areas
2. Ensuring sustainability: Continued work, to help ensure sustainability and increase coverage in 150 Upazilas of WASH I and also in the WASH II areas

3. Capacity and empowerment: Building capacity, networking and collaboration with governmental, private, non-governmental sector to carry out and sustain the programme

5. Innovation: A research, dissemination and learning programme to support this programme

(BRAC: 2011)

Cross-cutting these programme components are seven key issues or objectives that have proven to be most intractable within the water and sanitation sector:

- ☐ hygiene and behavioral change
- ☐ use and sustainability of sanitation facilities including safe and final disposal of human waste
- ☐ drinking water supply
- ☐ scaling up in the broadest sense that is in terms of time (sustainability), inclusiveness (reaching the poor and ultra poor), and numbers (reaching everybody)
- ☐ reaching underserved and hard-to-reach areas
- ☐ gender sensitivity
- ☐ technology (technology choice: low-cost sanitation technology for high water table areas; relevant technologies to address water quality problems), and, overall,

WASH II will also work to devise an effective exit strategy within the context of the Government's continuing efforts in the sector and BRAC's ongoing core programme.

(BRAC: 2011)

2.6 Analytical Framework

Every project/ program/ research work should have an analytical framework that may be driven from a theory or concept. Analytical framework usually gives a pathway or direction to accomplish a sustainable and fruitful cycle of activity.

Many organizations that are responsible for Water, Sanitation and Hygiene Programme have depicted their analytical framework (concept of work) in different ways. BRAC has a separate Research and Evaluation Division which is known as RED. This division is basically responsible for creating analytical framework of WASH programme.

By analyzing the focus, goals and objectives and field level activities of WASH Programme of BRAC, the researcher has drawn an analytical framework in order to fulfill the research objective and to get the answers of research questions of this work.

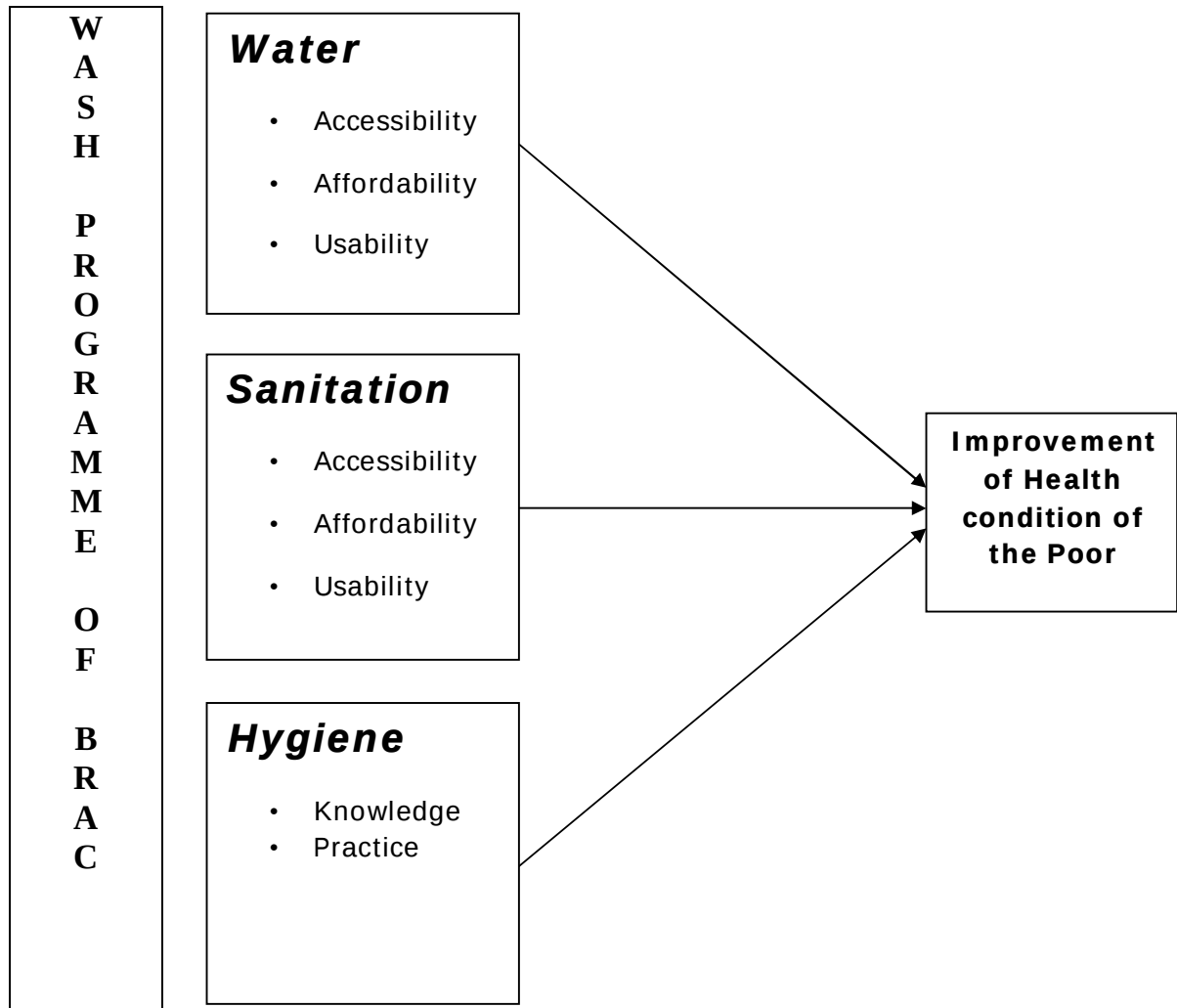


Figure 01: Analytical framework of WASH Programme of BRAC

Many poor people of our country are usually deprived of getting safe drinking water and sanitation facilities due to many impediments and problems that can be expressed by three indicators. These are:-

- Accessibility
- Affordability and,
- Usability

A person who cannot avail the logistic support of getting facility, then he/she will try to get access facilities from others. Otherwise, she has to afford to get that facility. So accessibility or affordability is a must for getting the facilities. Usability is another important indicator by which facilities can be utilized to convert into benefit. So to get benefit from any facilities, a person must know the art of using/ utilizing that facility.

The aim of WASH Programme of BRAC is to ensure people's access to or enable them to afford to get the benefit of safe drinking water and use of sanitary latrine. Hygiene knowledge as well as hygiene practice is important for better health status. A person may be aware of

hygienic knowledge, but due to the lack of logistic support of safe water and sanitation, he/she may not have accessibility or affordability of getting such facilities. Again there are some person having logistic support or affordable or accessible of getting safe water and sanitation facilities, but due to lack of hygienic knowledge he/she cannot practice those in hygienic manner. BRAC's WASH Programme has been working to fill up those gaps so that all poor people of the country can get benefit under the umbrella of WASH Programme, thus achieving the ultimate goal of improving the health condition of poor people.

2.7 Conclusion

Government has formulated different policies and strategies focusing on sanitation and drinking water. LGD and DPHE are working in this sector as a part of Government. NGOs have been doing a good job in this sector for a long time with the collaboration of Government. Though BRAC has come a little bit later to this sector compared to some other pioneer NGOs, BRAC has been doing a mammoth task in water, sanitation and hygiene sector. Along with other NGOs, BRAC has been working closely with the Government to achieve MDG targets relating to safe drinking water and basic sanitation.

Chapter 03

WASH Programme Overview and Strategies

3.1 Introduction

Bangladesh faces multiple challenges in the sanitation, hygiene and drinking water sector. According to the Joint Monitoring Report (UNICEF and WHO: 2008), latrine coverage in Bangladesh stood at 33 percent and safe drinking water coverage was 75 percent by 2003. But the alarming news for water sector is that 25 to 30 million people are affected by arsenic contamination in drinking water. Again there were no country wide data for hygiene practices. In this situation, the Government of The Netherlands has come to help Bangladesh in water, sanitation and hygiene sector with the commitment to achieve Millennium Development Goal (goal 4 & 7) on safe drinking water and basic sanitation. BRAC has been working in water, sanitation and hygiene sector from 2006. BRAC is currently running this programme in 254 Upazilas. WASH programme activities have been running in Dhamrai Upazila (Research study area) from the beginning of this programme (2006) to till now. (Field Survey: 2012).

This chapter will focus on the overview of WASH programme, its goals, objectives and programme strategies at the national level. This chapter will also focus on the activities of WASH programme in the study area (Dhamrai Upazila) relating to the national programme concept and strategies.

3.2 Overall Programme Concept

In May 2006, BRAC with support from the Government of the Kingdom of The Netherlands launched the WASH project in 150 Upazilas (sub districts) of Bangladesh having total population of about 38.8 million. The programme has been actually started in July 2006 and was expected to finish by April 2011.

In 2011, Netherlands Government had extended their financial help to carry on WASH programme to 93 new Upazilas (first in 20 Upazilas and then 73 Upazilas). WASH programme is also running in six haor Upazilas of Sylhet under BRAC's own finance. In September 2012, WASH has been extended in five more Upazilas by the aid of Bill & Milinda Gates Foundation (BMGF). WASH Programme is also continuing their work in pervious 150 Upazilas (WASH I) by the joint finance of The Netherlands Government and BMGF.

BRAC's WASH Programme can be classified into two phases;

1. First phase- WASH 1 Programme (duration: May 2006 to April 2011)
2. Second phase- WASH II Programme (duration October 2011 to April 2015)

Table 2: WASH Programme of BRAC (First and second phase)

WASH Programme of BRAC			
Phase	No of Upazila	Financed by	Total Upazila
First Phase : WASH I (Duration: May 2006 to April 2011)	150	Netherlands Government	150
Second Phase: WASH II (Duration: 2011-2015)	150	Netherlands government & BMGF	254
	20+73= 93	Netherlands government	
	06	BRAC	
	05	BMGF	

(BRAC: 2011)

In WASH I Programme (2006-2011) BRAC has extended hygienic latrine coverage to 25.6 million people, hygiene promotion focusing on 38 million people and improved safe water coverage for one million people within 150 Upazilas. After that the second phase has been initiated from October 2011 and will continue upto April 2015 in total 254 Upazilas including the Upazilas of first phase.

WASH II Programme consists of two major initiatives. The first initiative is to reach out to new areas, focusing on those that are hard to reach and underserved Upazilas. The second major initiative is to ensure that existing water supplies are well maintained and managed by the community in the 150 Upazilas that were covered in the BRAC WASH I Programme. Another major initiative is to continue a learning and innovative component to support the programme and the sanitation, hygiene and water sectors in general. The programme goals and objectives of WASH I and WASH II are stated below;

Goal and Objectives of WASH I

Programme Goal:

To facilitate, in partnership with the Government of Bangladesh and other stakeholders, the attainment of the MDGs related to water, sanitation, and hygiene for all, especially for underprivileged groups, in rural Bangladesh and thereby improve the health situation of the poor and enhance equitable development. (BRAC: 2004)

Specific Objectives:

Objective 1: Provide sustainable and integrated WASH services in the rural areas of Bangladesh

Objective 2: Induce safe hygienic behavior to break the contamination cycle of unsanitary latrines, contaminated water, and unsafe hygienic behavior.

Objective 3: Ensure sustainability and scaling-up WASH services by-

- Involving all stakeholders at all levels, irrespective of gender and social status and strengthening their capacities to effectively participate in all stages of the project.
- Facilitating the testing, adaptation and scaling up of innovative water and sanitation technologies by involving all key-stakeholders and institutions.
- Ensuring effective management that continues beyond the programme period through networks and micro-credit facilities that support communities and households to maintain their WASH services, through continuing hygiene promotion/education, through technical and managerial support to institutions and staff.

(BRAC: 2004)

Goal and Objectives of WASH II

Programme Goal

To contribute to the attainment of the Millennium Development Goals (MDGs) by providing integrated water services, sanitation and hygiene promotion expanding to hard-to-reach areas and to under-served populations in collaboration with government and other stakeholders while continuing reinforcing gains made in the original WASH I areas.

(BRAC: 2011)

Specific Objectives

Objective 1: New programme--To provide integrated and sustainable water, sanitation and hygiene services to underserved populations and in hard to reach areas in 20 Upazilas.

Objective2: Sustainability -- In the 150 Upazilas of the WASH I phase, to continue activities to ensure sustainability and expand toilet coverage and use to 90% from 83% of the population.

Objective 3: Capacity and empowerment-- To build capacity of the communities and network with local Government and other stakeholders for the implementation and sustained operation and use of installed facilities.

Objective 4: Innovation-- To contribute to the WASH sector, and the Bangladesh WASH sector in particular, by carrying out action-research on long outstanding issues such as low-cost sanitation technologies for areas with high ground water tables, safe and final disposal of human waste, and so on.

(BRAC: 2011)

3.3 Programme Strategies

Within the programme the following strategies have been designed to ensure that a clear focus on the poor and hardcore poor is maintained. The ongoing WASH Programme has the following strategies;

- Working in new areas: Strategies for Integrated sanitation, hygiene and water in difficult- to – reach, underserved areas in new Upazilas under WASH II have been taken.
- Beneficiary selection: Selection of the extremely poor families.
- Ensuring Sustainability: Continued work, to help ensure sustainability and increase coverage in 150 Upazilas of WASH I and also in the WASH II areas.
- Capacity and Empowerment: Building capacity, networking and collaboration with government, private, non- government institutions to carry out and sustain the programme.
- Innovation: A research and learning programme to support this programme.
- Specific support measures: A loan from a revolving fund and a grant—has been included in the programme to ensure the poor and the hardcore poor access to be able to construct a sanitary latrine.
- The total sanitation strategy: To create inter-community pressure to construct sanitary latrines and adapt hygienic behavior through Village WASH Committee (VWC). The better-off groups within the communities are expected to play an advocating role.
- Formation of VWC: The village WASH committees will have representatives of all income groups within the communities. The use of well-designed PRA-methodologies will ensure that all these groups will be able to participate in a meaningful manner in the decision making and planning process.

(BRAC: 2011)

Apart from the core approach of WASH Programme, this programme is implementing its different activities within the framework of different existing programmes of BRAC. For instance, hygiene education is already imparted to the poor through the BRAC's health programme, micro-credit programme, and education programmes and so on. Furthermore, the poor can avail of a loan from this programme to construct sanitary latrines.

3.3.1 Selection Criteria of Hardcore Poor

The selection of hardcore poor households for additional support or cross-subsidizing is based on the criteria defined by the Government, which if needed can be refined according to local circumstances;

- Landless households.
- Pavement dwellers or homeless households.
- The main earning person or the head of the household is a day labourer, owning less than 50 decimal of agricultural land or residing in a rented premise less than 200 square feet, and having no fixed source of income.
- Households headed by disable person, woman, or elderly person (65 +).

(BRAC: 2011)

3.3.2 Selection criteria of Areas (Upazilas)

For the selection of Upazilas that will be covered by the programme the following criteria will be used:

- Low income levels and economic development and high percentage of population living below the poverty line.
- Sanitation coverage below 50%.
- High incidence of arsenic contamination of existing water sources (Upazilas and villages).
- Technical and economic feasibility of providing safe water within the framework of the programme (villages).
- Willingness to collaborate with BRAC during the planning and implementation of safe drinking water supply systems and willingness to pay for the provided services by the villagers.
- Presence of BRAC network and scope to collaborate with local line departments of the government.

(BRAC :2011)

3.4 State of WASH Programme in the study area

Dhamrai Upazila has been selected as the study area of my research work on WASH Programme. 'Dhamrai' is such an Upazila that has been enlisted from the beginning stage of WASH Programme since 2007. So this area has grounding for both WASH I and WASH II.

3.4.1 General Information of Dhamrai Upazila

Table 3: General Information of Dhamrai Upazila.

General Information		
01	Location	Dhamrai Upazila is located about 40 kilometers north-west of the capital city of Dhaka. It is one of the six upazla s of Dhaka district. It is located within the coordinates of 90.02- 90.14 E and 23.50-24.02 E.
02	Surrounded by	It is surrounded by the Upazila of Mirzapur and kaliakoir and Nagarpur on the north, Singair on the south, Savar in the east and Saturia on the west.
03	Area	307.4 sq. kilometers.
04	Unions	16
05	Municipality	01
06	Villages	377
07	Mouzas	281
07	Rivers	Dhamrai Upazila is composed of the alluvium soil of the Bongshi and Dholesskori rivers. Other rivers are Kolmai and Gazikhali.
08	History	Dhamrai was once under the Thana (now Upazila) of Savar. Dhamrai became a Thana itself in 1914 during the British rule; the same year Dhamrai Hardinge High School was established. In 1947 it was put under the district of Dhaka. On December 15, 1984 Dhamrai was upgraded into a full-fledged Upazila.
Demographics		
01	Total population	380065
02	Male	194309
03	Female	185756
04	No of households (HHs)	77534
05	Number of Hard core poor	8767

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka & Internet)

Map of Dhamrai Upazila, Dhaka.



Map 01: Map of Dhamrai Upazila, Dhaka.

(Source: Internet, accessed on 06/12/2012)

3.4.2 Baseline Survey:

At the very beginning of the programme, a baseline survey had been accomplished in this Upazila by BRAC. A gist of baseline survey is given below. This survey has given us an idea on the water and sanitation conditions in the area at the beginning of the programme in this Upazila.

Table 4: A summary of Baseline Survey, 2007 of WASH Programme of BRAC

Water Options		
01	Number of Tubewells	41752
02	Number of owned tubewell	32606
03	Number of shared tubewells	9146
04	Number of Functional Tubewell	40950
05	Number of non-functional Tubewell	802
06	Number of tubewell with cement platform	20858
07	Number of tubewell Broken platform	2401
08	Number of tubewell without platform	18493
09	Number of Arsenic tested tubewell	33265
10	Number of Arsenic free tubewell	32245
11	Number of Arsenic contaminated Tubewell	1020
Water use pattern		
12	Number of Households use drinking water from tubewell	77534
13	Number of Households use tubewell water for cooking	77157

Sanitation		
01	Number of Households with sanitary latrine	24834
02	Number of householdshared sanitary latrine	4145
03	Number of households with clear and hygienic latrine	12262
04	Number of households with sanitary latrine with adequate water facility	6812
05	Number of Private Sanitation production centre	59

(Source: Baseline Survey, 2007 of WASH Programme of BRAC,
Supplied by: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka).

3.4.3 Village WASH Committee (VWC)

After the survey, VWC was formed through PRA. There are 402 VWCs in Dhamrai. Every committee consists of 11 members. There is a provision of 2 advisors in VWC but it is not mandatory. The committee formation of a VWC is as follows;

Table 5: Format of a Village WASH Committee (VWC)

No	Designation	Criteria
1	President	Retired teacher or honourable person of the society
2	Member Secretary	Youth woman
3	Treasurer	Imam of local mosque
4	Member	Sastho Sebika (SS) from BRAC Health Programme
5	Member	VGD card holder any local woman
6	Member	Any member of BRAC Village Organization (VO).
7	Member	Adolescent girl member
8	Member	Anybody from any local club or organization
9	Member	Any local small entrepreneur
10	Member	Other NGO member
11	Member	Any countable person or village doctor

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka).

VWCs are the social organizational skeleton of WASH Programme in the village level. This committee arranges meeting at two months interval to assess the progress of the programme. According to the Upazila Manager of BRAC (WASH) Programme of Dhamrai upazila, there are a total of 804 members (President and member secretary of 402 VWC) of VWC have gone through a three day long training course on WASH Programme in the BRAC training centers situated in Savar and Dhaka.

Apart from the WASH employees, they (VWC members) are also contributing a lot for the successful implementation of WASH Programme in that area.

3.4.4 Activities of WASH in Dhamrai Upazila:

WASH Programme is running in Dhamrai Upazila with the support of one Senior Project Manager, two Programme Officers (PO), two Field Officers, four Junior F.O, and 34 Project Assistant (PA). Activities of WASH Programme in Dhamrai Upazila can be segmented into three components as follows;

Table 6: Activities of WASH programme on drinking water sources in Dhamrai

No	Description	Area
1	Cementing the platform (base) of the tube well	All over the Upazila
2	Installation of 34 deep tube well	Only three unions namely Sutipara, Sombag and Nannar.

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka).

Table 7: Activities of WASH programme on sanitation in Dhamrai Upazila.

Description	Quantity	Amount in Tk.	Beneficiaries	Mode of finance
Distribution of sanitary latrine among ultra poor	In WASH I, 6724 latrine with bamboo fence. (Cost-Tk.2275/ latrine) In WASH II, 452 set latrine with tin fence. (Cost- Tk. 2500/ latrine).	16427100	35880	Grant
Distribution of ring slab for repairing latrine.	150 set	90000	776	Grant
Loan for poor	1909 set	1844000	11454	Loan
School latrine (Only for girls student of secondary level)	23 set (one set consists of two latrine)	1300000	3455 (75 students/ latrine)	Grant
Loan for ring slab manufacturing firms	24 firms	240000 (Tk.10000/ firm)	24	Loan
Installation of water seal or siphon in unsanitary latrine to convert it into sanitary latrine.	28109 pcs			

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka).

Table 8: Union wise Sanitation coverage reports of Dhamrai Upazila.

No	Name of unions	Baseline survey 07			Survey Report 2011			Present Status (December 2012)		
		Total HHs	Sanitation coverage (HHs)	%	Total HHs	Sanitation coverage (HHs)	%	Total HHs	Sanitation coverage (HHs)	%
1	Chahat	4629	1234	26.65	4847	3357	69	4847	3630	74.89
2	Amta	3461	786	22.71	3749	2485	66	3749	2743	73.16
3	Balia	4798	915	19.07	4949	3316	67	4949	3656	73.87
4	Jadabpur	3854	1519	39.40	4176	2752	66	4176	3092	74.04
5	Baisakanda	3596	1249	34.73	3935	2524	64	3935	2837	72.09
6	Vararia	4255	1102	25.89	4637	2862	62	4637	3382	72.93
7	Gangatia	4814	772	16.03	5197	3410	66	5197	3837	73.83
8	Kusura	5247	1546	29.41	5547	3553	64	5547	3926	70.77
9	Sanora	4244	1454	34.26	4570	2962	65	4570	3334	72.95
10	Sutipara	6613	1716	25.94	7003	5046	72	7003	5296	75.62
11	Sombag	5752	1804	31.36	6060	4374	72	6060	4649	76.71
12	Nannar	3637	1197	32.91	3977	2958	74	3977	3106	78.09
13	Suapur	3905	914	23.40	4347	2799	64	4347	3086	70.99
14	Rowil	4903	1504	30.67	5132	3379	66	5132	3739	72.85
15	Kulla	6350	1591	25.05	7418	4330	58	7418	5088	68.58
16	Dhamrai	2495	1056	42.32	2739	1960	72	2739	2131	77.80
17	Dhamrai Pourashova	4981	4432	88.97	5267	3523	67	5267	4845	91.98
	Total	77534	24794	31.97	83550	55593	66.54	83550	62377	74.66

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka).

3.4.5 Activities of Hygiene knowledge and practices in Dhamrai Upazila

The WASH programme has focused primarily as provision of tube wells and latrines. The term hygiene was not incorporated in the programme at the initial stage. Hygiene was paid little attention as compared to other two components 'safe drinking water' and 'sanitation'. But without good hygiene practices, ensuring safe drinking water facility and proper sanitation will not be achievable.

Hygiene education and knowledge prescribed by WASH Programme are disseminated to the people by the following ways;



Figure 02: Ways of achieving hygiene education in WASH Programme.

Table 9: Ways of achieving hygiene education in WASH Programme.

No	Ways	Description
1	Women's Meeting	There are two Programme Assistant (PA) in every union. Everyday each PA has to arrange six meetings consisting of 10 women members per meeting.
2	Children Meeting	One meeting every day with children of 50 households.
3	Adolescent Girl Meeting	One meeting everyday with adolescent girl of 50 households.
4	Gents and Juvenile Meeting	Every day one gents meeting and one juvenile meeting held for 50 households each supervised by a field organizer (FO).

(Source: Upazila BRAC (WASH) Programme Office, Dhamrai, Dhaka.)

Besides these, Village Wash Committee usually sit for the meeting every two months interval for the assessment of project progress. Then hygiene messages are disseminated. Hygiene messages are also disseminated through the meeting of microcredit health programme, adolescent girls club (SOFEA), School Wash Committee, School Brigade, Khutba of Imam on hygiene and cleanliness during Jumma prayer.

3.5 Conclusion

This chapter has given an overview of the national programme strategies and the programme activities in the study area. A combination of the theoretical programme concept and its practical application in grass roots level (Upazila) has been shown in this chapter. The contents of this chapter, especially geographic and demographic information of the study area and the extent of baseline survey will help us analyzing the survey data regarding the WASH programme.

Chapter 04

4.0 Data Analysis and Findings.

4.1 Introduction:

It has been mentioned earlier that, WASH Programme of BRAC is presently running in 254 upazilas (sub districts) in Bangladesh. The target group of this programme are poor and hardcore poor and the criteria of selecting target areas are areas of low income level where a high percentage of population living below the poverty line, low percentage of sanitation coverage and high incidence of arsenic contamination. Among the 254 Upazilas only one i.e. 'Dhamrai' Upazila has been selected as the study area of this research. Two methods have been used for the study- one is interview method and another is the case study. A structured and closed form of questionnaire has been developed consisting of two parts. The first part is the 'Demographic profile' having eight questions and the second part is the 'Respondent's view profile' having twenty questions. The total number of respondents is 40. Respondents have been randomly selected in respect of gender, age, income level, education, religion and so on. Furthermore, two case studies have been taken from the population and one case study was taken from the programme authority. These three case studies will help us to get in depth knowledge about the impact of WASH programme on the poor people through analyzing their behavior, attitude, and experience.

4.2 Data Analysis from the Survey Questionnaire:

The questionnaire consists of total 28 questions of which there are 8 questions for Demographic profile. Data taken from demographic profile of the respondents are analyzed as follows;

4.2.1 Analysis of Demographic Profile

Table 10: Respondent's gender

No	Respondent's gender	Frequency	Percentage
1	Male	9	22.5
2	Female	31	77.5
Total		40	100.0

(Source: Field Survey 2012)

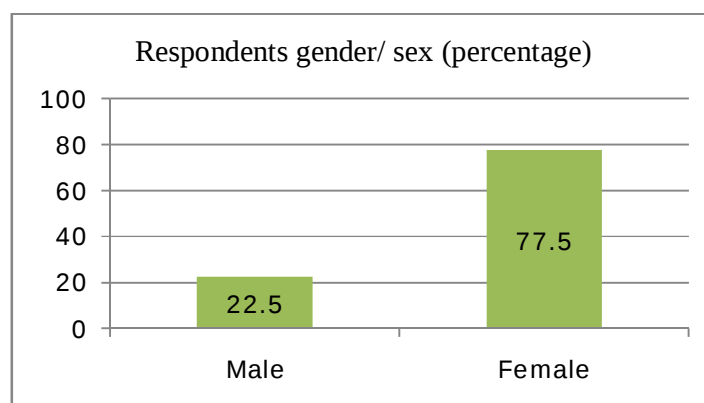


Figure 03: Gender of the respondents

Among the 40 respondents, there are nine males and 31 females. The percentage of male and female are 22.5 and 77.5 respectively. The reason of high percentage of female respondents is that, they are easily available at home during survey and they know the ins and outs of the sanitation and hygiene issues compared to men and is responsible for the habits of the family.

Table 11: Respondent's age group

No	Age group	Frequency	Percentage
1	11-20 years	1	2.5
2	21-30 years	6	15.0
3	31-40 years	6	15.0
4	41-50 years	18	45.0
5	above 50 years	9	22.5
Total		40	100.0

(Source: Field Survey 2012)

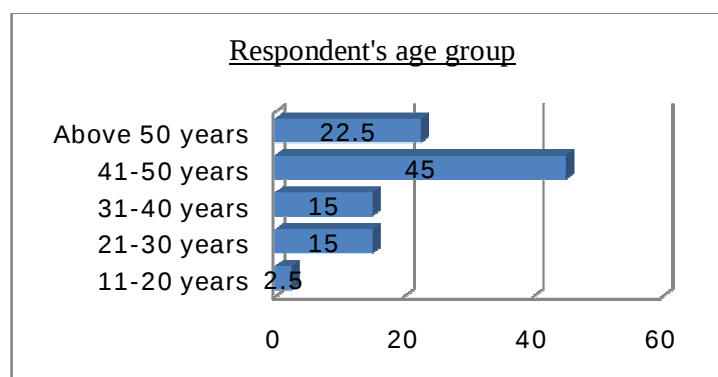


Figure04: Age group of the respondents.

There are five age groups. Among them the highest numbers of respondents (18 out of 40) have been taken from 41-50 years group. Nine respondents have been taken from above 50 years group and only one respondent has been taken from 11-20 years group. So it is observed that, most of the respondents are matured and experienced.

Table 12: Respondent's occupation

No	Occupation	Frequency	Percentage
1	Student	1	2.5
2	Service	2	5.0
3	labor	3	7.5
4	Business	2	5.0
5	Agriculture	1	2.5
6	House wife	31	77.5
Total		40	100.0

(Source: Field Survey 2012.)

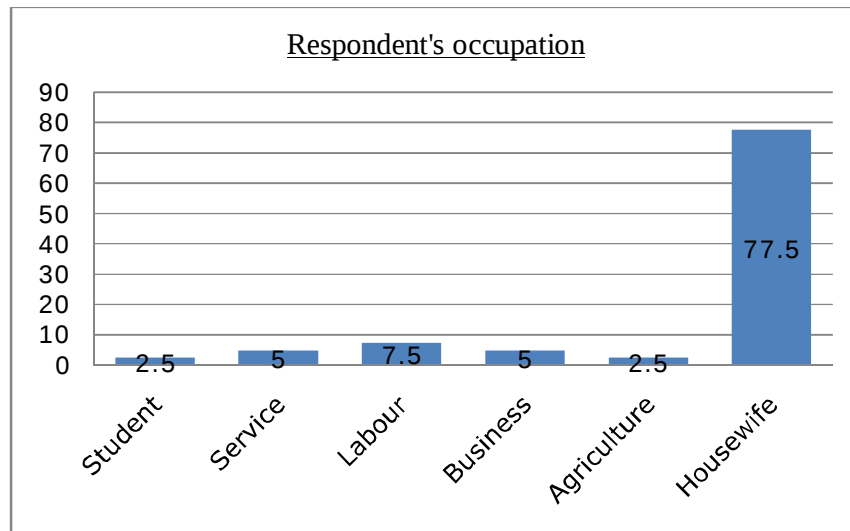


Figure 05: Respondent's occupation

All the respondents have been classified into six occupational groups. Though most of the house wives of villages do not engage themselves any income generating occupation, they are separately classified as one occupational group. Interestingly most of the respondents (77.5%) are from this group.

Table 13: Cross Tabulation of Respondents gender versus occupation.

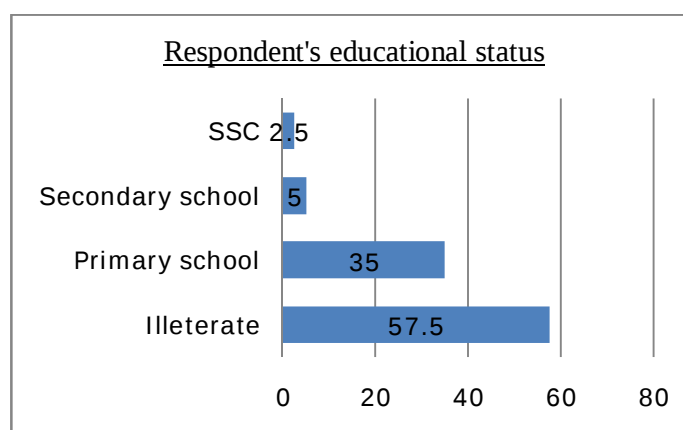
		Respondent occupation						Total
		Student	Service	labor	Business	Agriculture	House wife	
Respondent sex/gender	Male	1	2	3	2	1	0	9
	Female	0	0	0	0	0	31	31
Total		1	2	3	2	1	31	40

Another observation that has come from the above cross tabulation is that, among the 31 female respondents, there is not a single woman who engages herself in any income generating activities.

Table14: Educational Status of Respondents

No	Educational status	Frequency	Percentage
1	Illiterate	23	57.5
2	Primary School	14	35.0
3	Secondary School	2	5.0
4	SSC	1	2.5
Total		40	100.0

(Source: Field Survey 2012.)

Figure 06: Educational status of respondents.

Among 40 respondents only one has passed SSC, while 57.5 percent are illiterate and total 92.5 percent could not even cross the primary level. So, most of the respondents in sample area have very low educational profile.

Table 15: Respondent's income level

No	Family income level (Taka)	Frequency	Percentage
1	Below 5000	28	70.0
2	5001-10000	11	27.5
3	10001-20000	1	2.5
Total		40	100.0

(Source: Field Survey 2012)

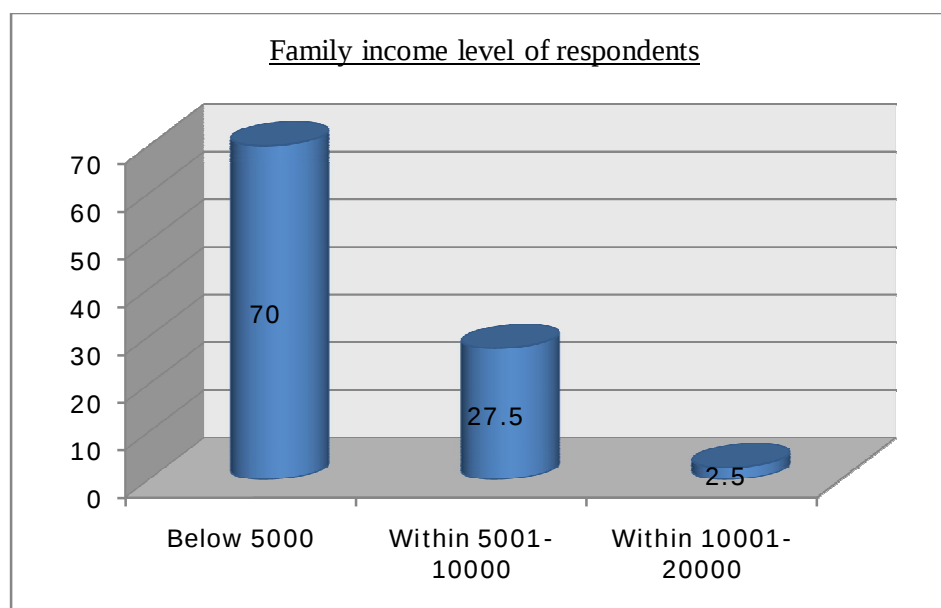


Figure 07: Respondent's family income level

Most of the respondent's (70%) family income level is below Tk.5000 per month. It indicates that most respondents are usually from the low income level who are either poor or hard core poor. So the choice of respondents in respect of income level is in the line of goals and objectives of WASH programme.

4.2.2 Analysis of Respondent's view profile

Table 16: Source of drinking water before and after WASH Programme

No	Water source	Before Wash Programme		After Wash Programme	
		Frequency	Percentage	Frequency	Percentage
1	Tube well	38	95.0	40	100
2	Pond/River/ Canals	1	2.5	0	0
3	Well	1	2.5	0	0
Total		40	100.0	40	100

(Source: Field Survey 2012)

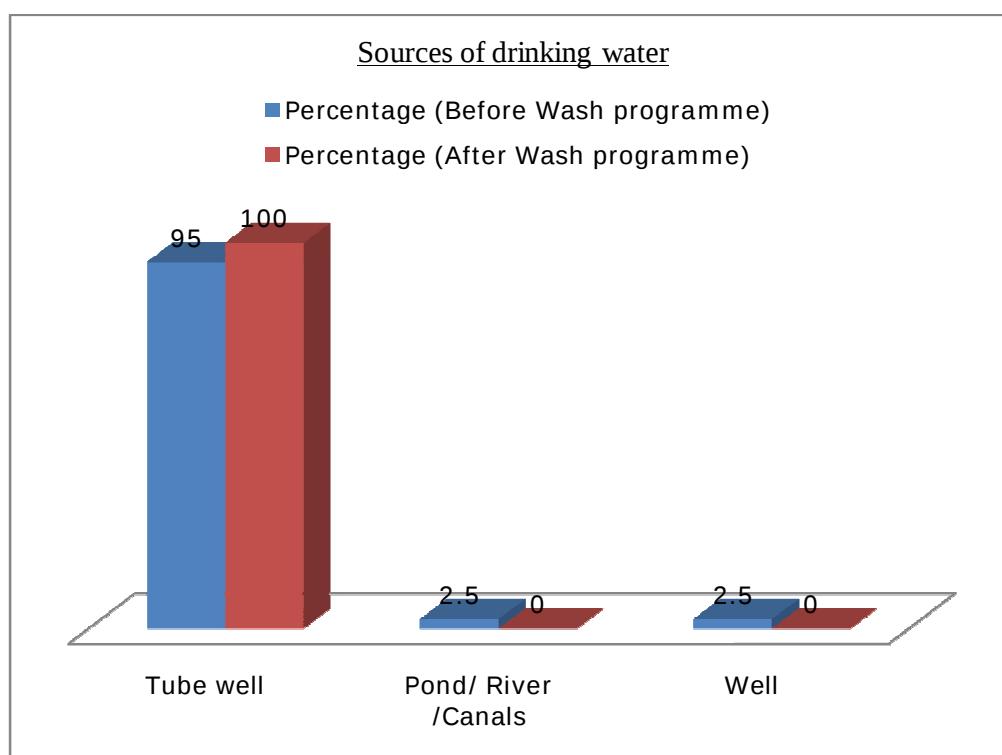
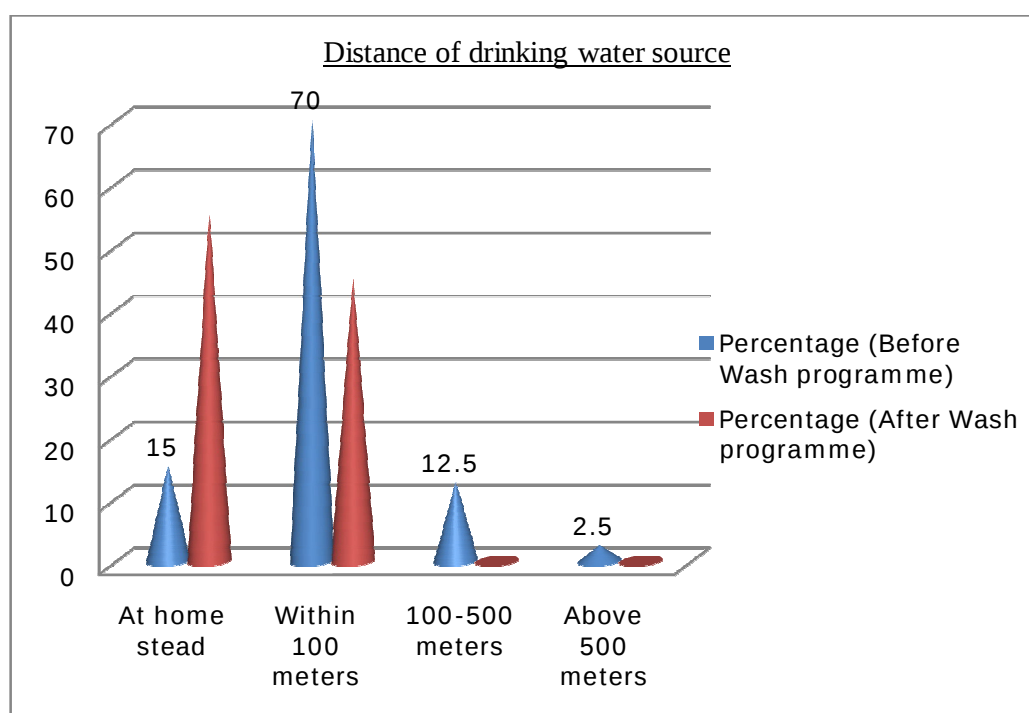


Figure 08: Source of drinking water (before and after WASH programme.)

It has been found that, before WASH Programme 95 percent respondents used tube well water for drinking purpose while it has turned into 100 percent now (after WASH programme).

Table 17: Distance of drinking water sources before and after WASH Programme.

No	Distance of Water source	Before Wash Programme		After Wash Programme	
		Frequency	Percentage	Frequency	Percentage
1	At home stead	6	15	22	55
2	Within 100 meters	28	70	18	45
3	More than 100-500 meters	5	12.5	0	0
4	Above 500 meters	1	2.5	0	0
Total		40	100	40	100

(Source: Field Survey 2012)Figure 09: Distance of drinking water source from house.

Before WASH programme, most of the people used to fetch water around 100 meters distant from tube well and some of the people had to fetch water within 500 meters or even more. But now (after the programme) all the respondents are getting water sources either in their own home stead or at best within 100 meters distance.

Table 18: Accessibility of drinking water.

		After WASH programme		Before WASH programme	
No	Accessibility	Frequency	Percentage	Frequency	percentage
1	Accessible all time	38	95.0	27	67.5
2	Not accessible all time	2	5.0	13	32.5
Total		40	100.0	40	100

(Source: Field Survey 2012)

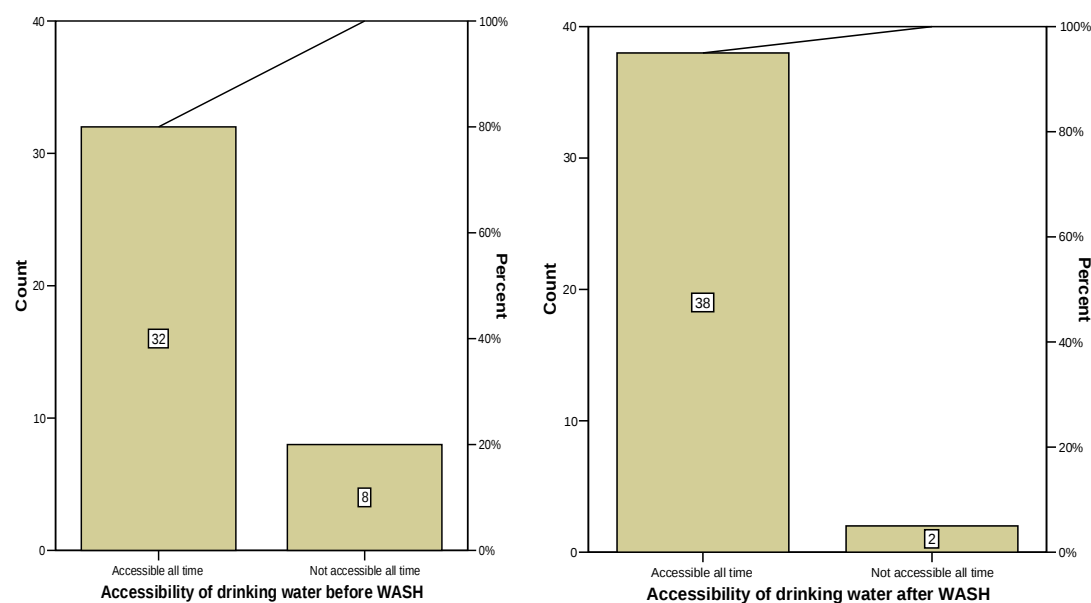


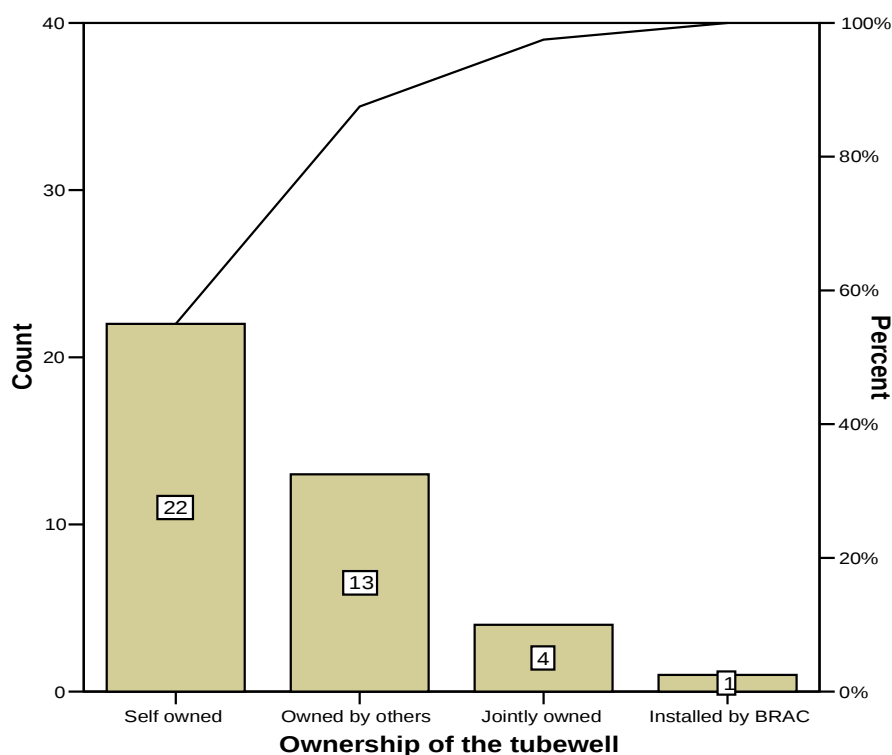
Figure 10: Accessibility of drinking water before and after WASH programme.

Before WASH programme, 32.5 percent respondents did not always have access to their drinking water sources (tube well) as they had to fetch water from tube wells of someone else. But now, only 5 percent respondents do not yet have accessibility all time to their drinking water sources (tube well). Present survey depicts that, now 38 respondents out of 40 have all time accessibility to their drinking water sources (tube well).

This indicates that, the accessibility of respondents to the drinking water sources have significantly increased from 67.5 percent (before WASH programme) to 95 percent (after WASH programme).

Table 19: Ownership of the tube well

No	Types of ownership	Frequency	Percentage
1	Self owned	22	55.0
2	Jointly owned	4	10.0
3	Owned by others	13	32.5
4	Installed by BRAC	1	2.5
Total		40	100.0

(Source: Field Survey 2012)Figure 11: Ownership of the tube well used by respondents.

The table and the chart above about the ownership of the tube well shows that, now 55 percent tube wells are self owned, while 13 percent are owned by others and only 2.5 percent tube well has been installed by BRAC. By this it can be assumed that, tube well installation by BRAC is not satisfactory in Dhamrai.

Table 20: State of Arsenic test of water used for drinking purpose.

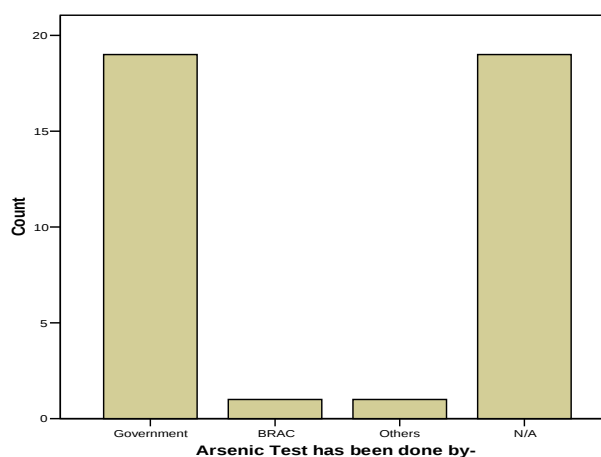
No	Arsenic test	Frequency	Percentage
1	Arsenic tested	21	52.5
2	Not tested/ Unknown	19	47.5
Total		40	100.0

(Source: Field Survey 2012)

The tube wells from where 52.5% respondents collect drinking water are arsenic tested and they found that these tube wells water are safe to drink. While the rest of the tube wells (47.5%) are not arsenic tested and they don't know whether they drink arsenic contaminated water or not.

Table 21: Arsenic Test has been done by (organization)

No	Test done by	Frequency	Percentage
1	Government	19	47.5
2	BRAC	1	2.5
3	Others	1	2.5
4	N/A	19	47.5
Total		40	100.0

(Source: Field Survey 2012)Figure 12: Arsenic Test has been done by (organization).

There are around 50 percent tube wells, which had not gone through the Arsenic test. Rest of the other tube wells are generally tested by government that is by DPHE (Department of Public Health and Engineering). BRAC's contribution in arsenic test is very negligible. It is only 2.5 percent.

Table 22: Condition of the platform (Base) of the tube well.

No	Platform/ Base	Frequency	Percentage
1	Cemented platform	22	55.0
2	No Platform	17	42.5
3	Broken Platform	1	2.5
Total		40	100.0

(Source: Field Survey 2012)

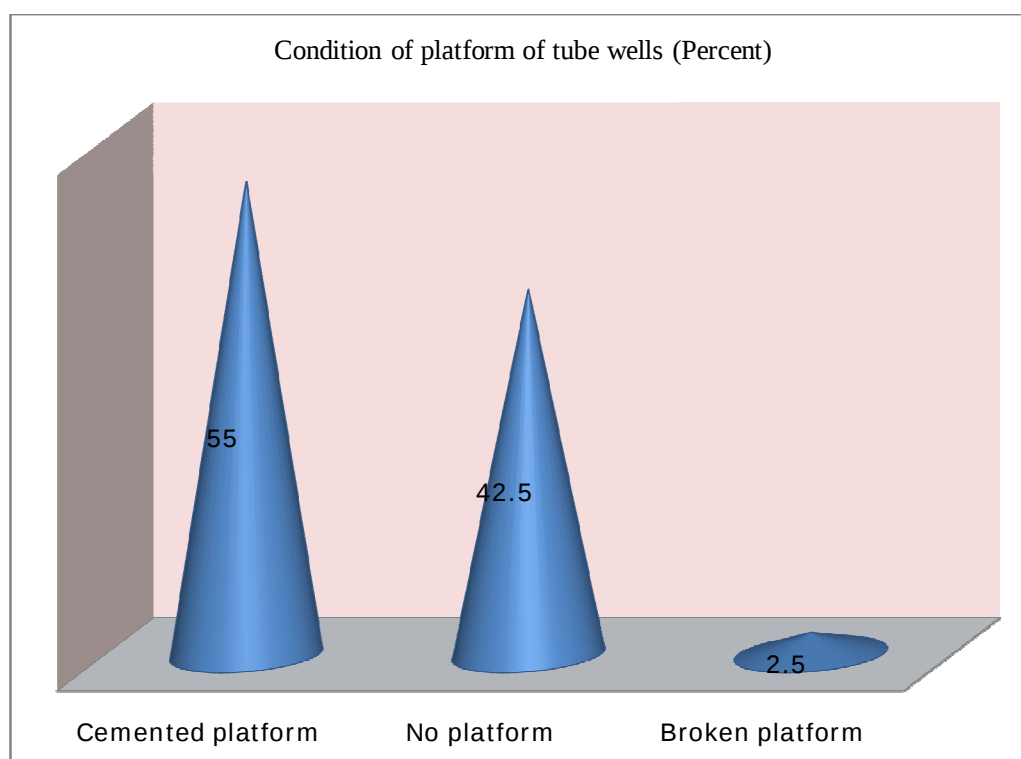
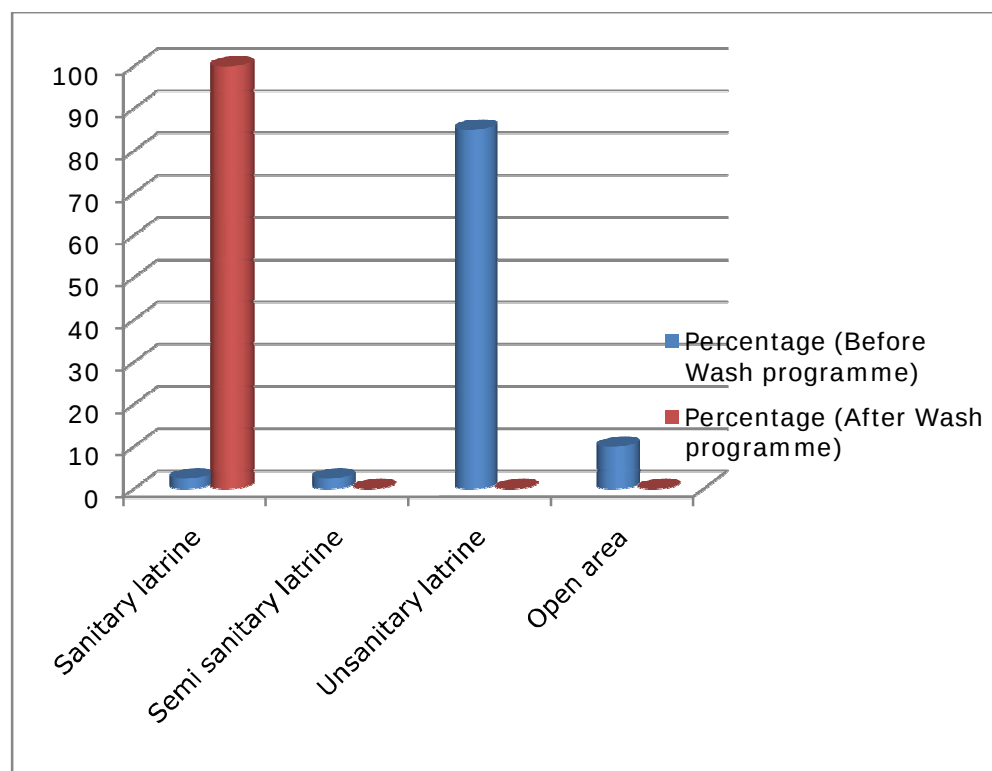


Figure13: Condition of the platform (Base) of the tube well (percentage basis)

The survey shows that, 55 percent tube wells have cemented platform. Around 42.5 percent tube wells have no platform or cemented base. Only one tube well (2.5 percent of total tube wells) have got broken platform out of 40. So there is huge scope on making platform of tube well in Dhamrai through this programme.

Table 23: Types of latrine used (Before and after WASH Programme)

No	Types of latrine	After WASH programme		Before WASH programme	
		Frequency	Percentage	Frequency	Percentage
1	Sanitary Latrine	40	100	1	2.5
2	Semi-sanitary latrine			1	2.5
3	Unsanitary latrine			34	85
4	Open area			4	10
Total		40	100.0	40	100

(Source: Field Survey 2012)Figure 14: Types of latrine used (Before and after WASH Programme).

The survey shows that, before WASH programme, only 2.5 percent respondents used sanitary latrines, 85 percent respondents used traditional latrines. There are 10 percent respondents who did not even use latrine for defecation. They did their defecation in open areas. Wash programme has successfully changed the total scenario. According to the survey, all of the respondents now use sanitary latrines.

Table 24: Fencing System of the Latrine (After WASH Programme)

		After WASH programme		Before WASH programme	
No	Fencing system	Frequency	Percentage	Frequency	Percentage
1	Fenced by tin	33	82.5	2	5
2	Fenced by bamboo/leaves/sack or other temporary device	7	17.5	33	82.5
3	Without fencing			5	12.5
Total		40	100.0		

(Source: Field Survey 2012)

Before WASH programme, there were more than 80 percent latrines fenced by temporary shades like bamboo, leaves, jute sticks or sacks etc. There are 12.5 percent people who had no fencing in their defecation place. And only 5 percent respondents use tin fenced latrine. Wash programme did revolutionary success in the sanitation sector by this seven years in Dhamrai. The survey has depicted that, presently more than 80 percent respondents use latrine fenced by tin and only 17 percent use temporary shed (shaded by bamboo, leaves or sacs etc.) latrine. No respondents have been found using latrine without fencing.

Table 25: Types of help from BRAC for sanitary latrine

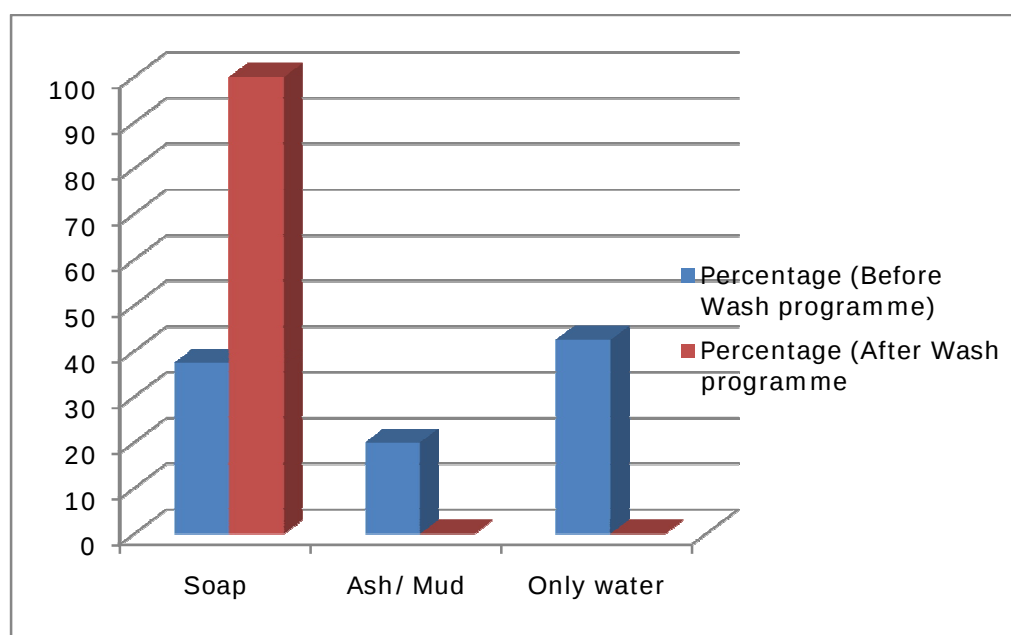
No	Sanitary latrine is made by help of-	Frequency	Percentage
1	BRAC	38	95.0
2	Self	2	5.0
Total		40	100.0

(Source: Field Survey 2012)

Among the 40 randomly selected respondents, 95 percent respondents made their sanitary latrines with the financial help of BRAC (WASH) programme. Only 5 percent made the sanitary latrine by their own finance.

Table 26: Materials respondents use for hand washing after defecation.

No	Hand washing items	Before Wash Programme		After Wash programme	
		Frequency	Percentage	Frequency	Percentage
1	Soap	15	37.5	40	100
2	Ash/Mud	8	20.0		
3	Only water	17	42.5		
Total		40	100.0	40	100

(Source: Field Survey 2012)Figure 15: Types of hand washing materials used by the respondent after defecation.

Before Wash programme, only around 37 percent respondents used soap for hand washing after defecation. 20 percent respondents used ash or mud and 42% respondents used only water. But due to dissemination of hygiene messages effectively to the door steps of all people by WASH field staffs, the number of respondents using soap after defecation for hand washing has currently stood 100 percent. This is obviously a very good achievement of WASH workers in hygiene sector.

Table 27: Cleanliness of latrines

No	Times of cleaning	After WASH Programme		Before WASH Programme	
		Frequency	Percentage	Frequency	Percentage
1	Several times a day	2	5.0		
2	Once a day	9	22.5		
3	Two or three days interval	26	65.0	1	2.5
4	Once a week	3	7.5	8	20
5	Monthly or more			26	65
6	Not Applicable			5	12.5
Total		40	100.0	40	100

(Source: Field Survey 2012)

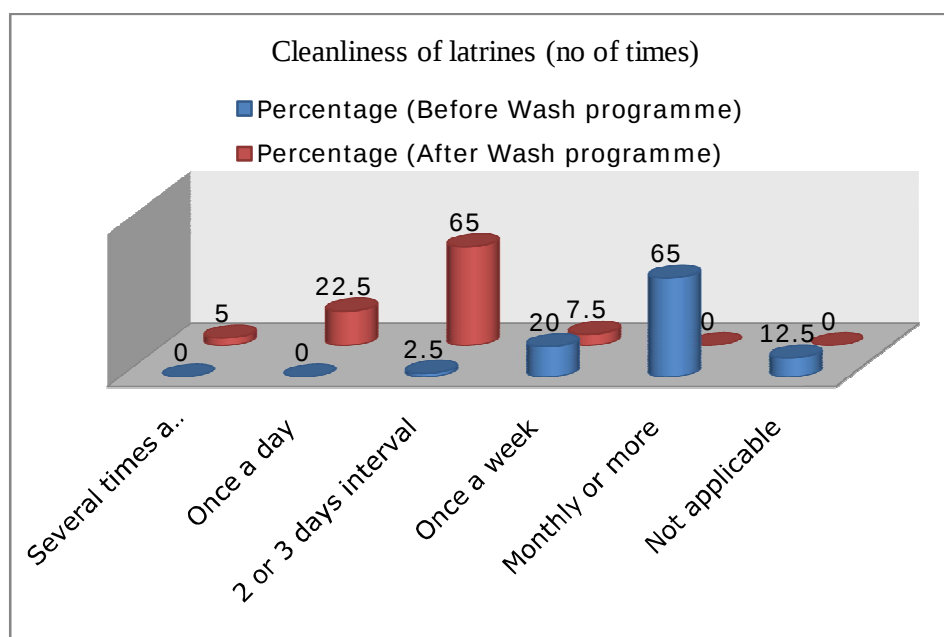
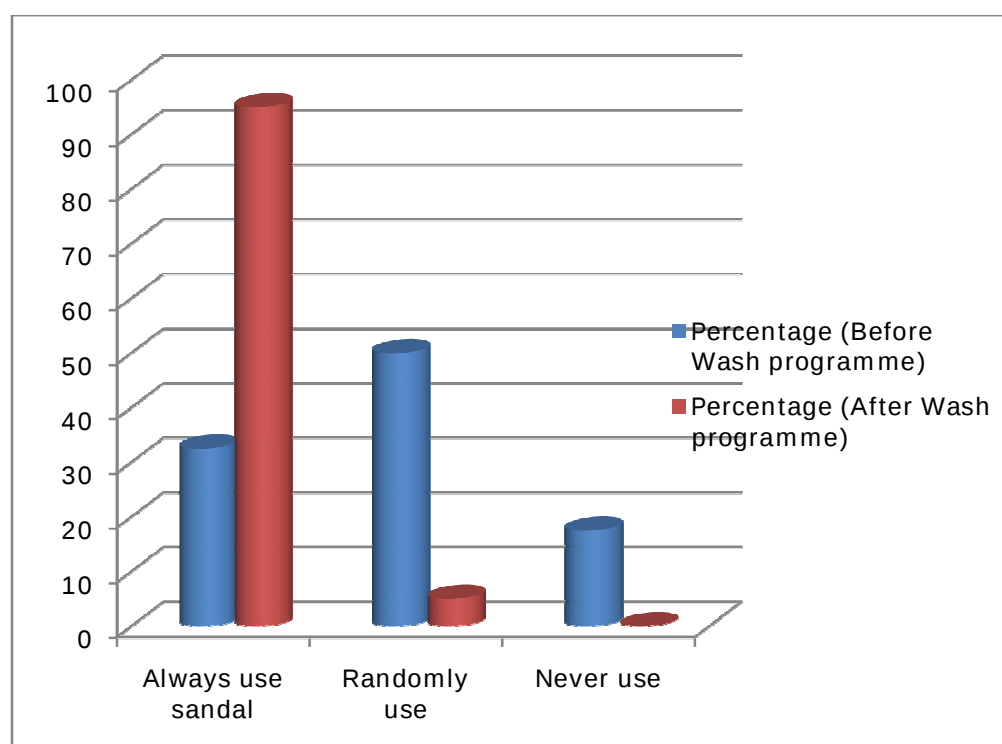


Figure 16: Cleanliness of latrines (no. of times) by respondents

Before the WASH programme, most of the respondents (65%) cleaned their latrine monthly or more. But after WASH programme, now most of the respondents clean their latrines after two or three days interval or daily. Before WASH programme, there were some people who did not use toilet. They did their defecation in any open places or bushy areas. For this reason, around 12 percent respondents have been seen in the provision of 'Not Applicable'. Here not applicable means these respondents did not use toilets let alone cleaning the latrine.

Table 28: Use of Sandal (slipper/ shoes) during defecation

		Before WASH programme		After WASH programme	
No	Times of Sandal use	Frequency	Percentage	Frequency	Percentage
1	Always use sandal	13	32.5	38	95
2	Randomly use	20	50.0	2	5
3	Never use	7	17.5		
Total		40	100.0	40	100

(Source: Field Survey 2012)Figure 17: Use of sandal during defecation.

Before WASH programme, half of respondents randomly used sandal. Only 32.5 percent always used sandal during defecation, and 17.5 percent respondents never used sandal during defecation. This tendency has been changed tremendously due to WASH programme. Now 95 percent respondents always use sandals during defecation.

Table 29: No of times afflicted by diarrhoea (Before and After WASH programme)

No	No of times	Before WASH programme		After WASH programme	
		Frequency	Percentage	Frequency	Percentage
1	Not a single time	-	-	2	5
2	1 or 2 times	1	2.5	34	85
3	3 to 5 times	10	25.0	4	10
4	5 to 10 times	23	57.5	-	-
5	10 to 20 times	6	15.0	-	-
	Total	40	100.0	40	100.0

(Source: Field Survey 2012)

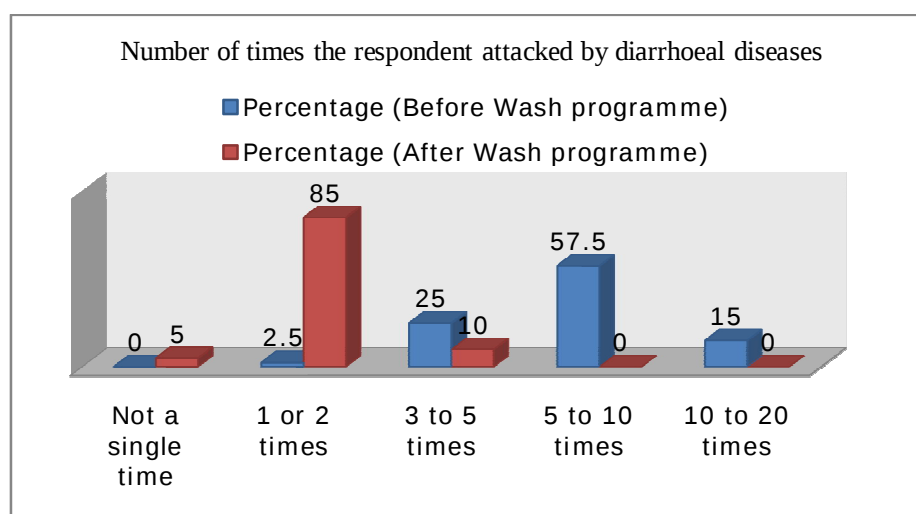
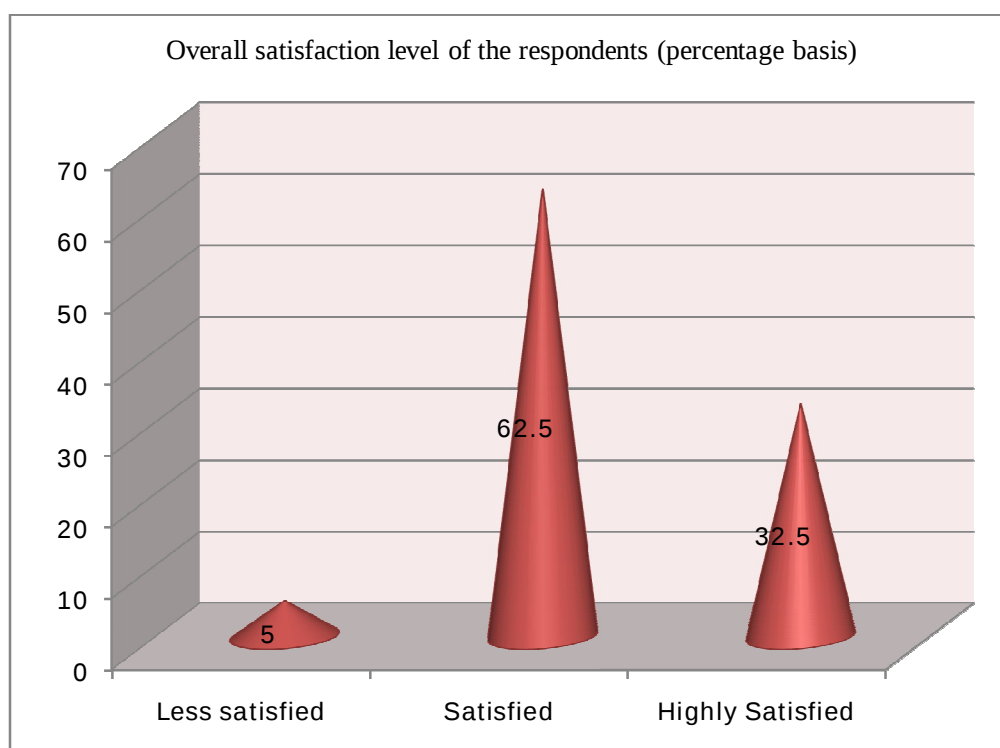


Figure 18: Number of times the respondent attacked by diarrhoeal diseases (per year).

According to the survey, 57.5 percent respondents were afflicted by diarrhea five to ten times per year before WASH programme. 15 percent respondents were attacked even 10 to 20 times per year. Not a single person could be found among 40 respondents who were not afflicted by diarrhea in a year. Due to the continuous and effective activities of WASH programme, the havoc of diarrhoeal diseases has reduced significantly. Presently, 85 percent respondents are attacked by diarrhea only 1 or 2 times a year. There are 5 percent respondents who are not attacked by diarrhoeal diseases even a single time in a year. Again now there is not a single respondent who is attacked by diarrhoeal diseases more than 5 times in a year. This clearly indicates that, WASH programme of BRAC helped to improve the health condition of the people in the area.

Table 30: Overall satisfaction of the respondent on WASH Programme

No	Satisfaction level	Frequency	Percentage
1	Less Satisfied	2	5.0
2	Satisfied	25	62.5
3	Highly Satisfied	13	32.5
Total		40	100.0

(Source: Field Survey 2012)Figure 19: Overall satisfaction of the respondent on WASH Programme.

Among the 40 respondents, more than 60 percent respondents are satisfied with WASH programme. Only 5 percent are less satisfied and 32.5 percent are highly satisfied. So, 95 percent respondents are either satisfied or highly satisfied with this programme. The reason why 5 percent respondents are less satisfied with BRAC has been discussed elaborately in Chapter 5 ('Discussion' chapter).

4.3 Major Findings from Data Analysis:

1. Most of the respondents of this study are female (77.5 percent). They generally engage themselves in household activities as housewives. They have no income generating occupation.
2. It has been found from the survey that, most of the respondent's family income level is below Tk. 5000 per month and most of them have very low educational profile (92.5 percent below primary level). This means most of the respondents are poor and less literate.
3. People of Dhamrai are mostly dependent on tube wells not only as a source of drinking water but also for cooking, washing, bathing and so on.
4. Some of the shallow tube wells become inoperative during dry season due to underground water table depletion. Some deep tube wells installed by BRAC are working well to solve drinking water problem even in dry season. But these are very negligible as compared to huge demand.
5. The study reveals that, a large number of tube wells have no platform or cemented base that may cause of contaminating the drinking water. Poor tube well owners are not affordable to make platform or cemented base.
6. According to the study survey, around fifty percent tube wells are not being arsenic tested. The rest of the tube wells which are 'arsenic tested'- have not been tested recently. BRAC's activities regarding arsenic test of tube well water is very negligible in this study area.
7. The accessibility of poor people to drinking water sources (tube wells) have been increased by this programme.
8. BRAC has done the significant work on sanitation (like installation of sanitary latrine, conversion of unsanitary latrine to sanitary one etc.) in this area.
9. As a component of 'School Sanitation', BRAC has established sanitary latrines for girls' students in most of the high schools in Dhamrai. But it is not sufficient considering to the volume of students. This issue has been elaborately discussed in the 'Discussion' chapter.
10. Activities of 'School WASH Committee' and 'School Brigade' have not found satisfactory and up to the mark during the survey. School WASH Committee is the supervisory committee to supervise the respective school sanitation consisting of 14 members headed by the Head Master. 'School Brigade' is a committee formed by 24 students. From class six to nine- 6 students come from each class (3 male and 3

female). Both the committees have provisions to sit in a meeting at a specific interval. Unfortunately, the activities of these committee found to be inactive during field survey.

11. Upazila WASH programme office has not sufficient workforce to run their activities smoothly.
12. This programme has successfully increased the good hygiene practices like use of sandal in latrine, use of soap before taking food and after defecation, cleanliness of latrines, use of sanitary latrines etc.
13. The most important findings of this study is that, the integrated efforts of WASH programme has helped to reduce the diarrhoeal diseases significantly to the poor people of study area.
14. Finally the survey reveals that, most of the people of the study area are either satisfied or highly satisfied with the activities of WASH programme.

4.4 The Case Studies

Case study method provides the researcher a wide range and depth of experience. This gives a researcher new insights into the pattern, structure and peculiarities found in the data. It can enable us to explore, reveal and understand problems, issues and relationships. Case studies involve an in depth examination of a single person or a few people. The goal of the case study is to provide an accurate and complete description of the case. The principal benefit of the case studies is that this can expand our knowledge about variations in human behavior. (Aminuzzaman: 1991).

Two case studies from the population and one case study from the programme authority have been taken to get in depth knowledge about the impact of WASH programme on the poor people through analyzing their behavior, attitude, and experience. These three case studies are stated below;

NO OF CASE STUDY	NAME OF THE CASE STUDY
CASE STUDY 01	 SHEBADASHI (A POOR AND OLD WIDOW)
CASE STUDY 02	 SHAHNAJ BEGUM (UP MOHILA MEMBER & MEMBER OF VWC)
CASE STUDY 03	 JOYDEV PAUL (SENIOR UPAZILA MANAGER) WASH PROGRAMME OF BRAC DHAMRAI UPAZILA, DHAKA.

Case Study-01

SHEBA DASHI

(A poor and old widow)



Photograph 01: Shebadashi in front of her cottage

Her name is **Shebadashi** and age is approximately 55 years. She got married with Paban Sarker, a poor peasant, during the liberation war. She lives in a shabby cottage on her husband's small piece of land on the bank of river 'Bongshi' in Palpara of Dhamrai Upazila. Paban Sarker died seven years ago leaving behind his wife and four daughters.

"Few years back a proposal for marry came to her for her elder daughter. For that purpose she visited to bridegroom's house. She found that everything is satisfactory but there is no sanitary toilet in their house. She straightly opposed to give marry her daughter to that house until they build sanitary latrine."

After his death, Shebadashi fell in serious trouble to maintain their livelihood as she had no income sources. Then she took loan from BRAC and bought a cow. From then on she has been maintaining her family hand to mouth by selling milk. A few years ago, a field officer of BRAC came and

listed her name to build a sanitary toilet in her house. She kept on participating in WASH hygiene meetings. There she could know many things like importance of using sanitary latrine, hand washing, importance of safe drinking water, hygiene knowledge and the way of hygiene practices etc.

Few years back a proposal for marriage came to her for her elder daughter. For that purpose she visited to bridegroom's house. She found that everything is satisfactory but there is no

sanitary toilet in that house. She straightly opposed to give marry off her daughter to that house until they build sanitary latrine. Then the Bridegroom's house accepted her suggestion and made a sanitary latrine.

Shebadashi did it because she know how much sufferings she had to undergo when she was brought as bride to her husband's house and found there is no toilet in this house. She had to go to open place or inside bushes for defecation before dawn or after dusk. During day time she had to suppress the pressure of defecation. After few years, her husband made a pit toilet. As the pit toilet was not sanitary, germs could be spread easily. As a result they were suffering from diarrhoeal diseases all the year round.

"She had to go to open place or inside bushes for defecation before dawn or after dusk. During day time she had to suppress the pressure of defecation as they had no latrine."

Shebadashi got the hygiene messages from BRAC (WASH) personnel. Now she and her daughters wear sandal during defecation, keep soap and water inside the latrine, wash the toilets every day, drink safe drinking water from tube well, cover water pot, and wash hands with soap before having meal and after defecation. Now her family is almost free from diarrhoeal diseases.

But she also has dissatisfaction. Her husband sank a tube well in her premise 15 years ago. It is now inoperative. She has not got enough money to repair it. She has to fetch water from other tube wells at a distant place. She expects that it would be pretty good if BRAC could help her to repair the tube well as they helped her to build sanitary latrine. She is very much grateful to BRAC (WASH) field officers.

Case Study-02

SHAHNAJ BEGUM

[Mohila (Female) Member of UP]

Shahnaj Begum is the name of a success story of being public representative (Women member of Union Parishad Council) from a simple member of Village Wash Committee (VWC) of BRAC's WASH Programme.

Shahnaj (age about 38 years) comes from a very poor family. She got married with Shahjahan Ali, a poor peasant, around 25 years ago. She had to maintain livelihood from hand to mouth with two children. She was trying to get a dignified income source and at last she got it. She joined as Sastho Sebika (SS) in BRAC health programme eight years ago, where she learnt about safe drinking water, hygiene knowledge and practices as well as to earn money. Very rapidly she was becoming popular and favourite face in her locality. Recently in 2011, she contested in Union Parishad election and was elected as a 'women member' of Dhamrai Union Council.



Photograph 02: Shahnaj Begum.

She said that, after becoming a public representative, she can work more for WASH programme, because her acceptability in the society has been increased. She added that, if she

could not work with BRAC health and WASH programme, probably she would not have been elected a public representative.

She joined in WASH programme of BRAC in the VWC as a member in 2007. This identity has given her a good chance to do something for her locality especially for women and girls on sanitation, health... Very rapidly she was becoming popular. Recently she contested UP election and elected as Mohila (women) member.

She is very much grateful to BRAC. She wants to cling with BRAC's such activities and dedicate the whole life to serve the poor and helpless women.

Case Study-03

Joydev Paul

Senior Upazila Manager

BRAC (WASH) programme, Dhamrai.

Joydev Paul, Senior Upazila Manager of WASH Programme of BRAC, is currently working in Dhamrai Upazila, Dhaka. He has been working with BRAC's WASH Programme since 2007. He has the experience to work in three Upazilas in this sector. He said that, BRAC (WASH) has done a lot of works on sanitation and hygiene here and huge works is running on under WASH II Programme.



Photograph 03: Mr. Joydev Paul, Senior Upazila Manager.

Under this programme, BRAC has already distributed 7176 sets of sanitary latrines, 150 sets of ring slab free of cost among the poor. They have built 23 set of school latrine in 23 high schools in Dhamrai for girl's students. They have also installed 28109 pieces of water seal or siphon in unsanitary latrines to convert it into sanitary latrine.

"At the eleventh hour of the project some field level officers and workers feel depression due to the uncertainty of their job. This tendency seriously hampers the working spirit."

He has informed that, Dhamrai is an arsenic prone area. Its rivers, canals and ditches are seriously contaminated by industrial wastes. People have to depend fully on underground water for everything they need. There is huge demand for deep tube well here. So far BRAC (WASH) could cover only three unions by installing 34 deep tube wells.

However, many tube wells remain inoperative due to the lack of proper repairing/maintenance as poor people cannot afford to repair them. He added that, there are thousands of tube wells without cemented platform. Moreover, no arsenic testing has been done recently either from Government or NGO side. Some tests have been done by DPHE, if people bring water samples to their office. He has commented that, to ensure safe drinking water for the inhabitants of Dhamrai, installation of sufficient deep tube wells in every union, repairing the inoperative tube wells, a thorough arsenic testing of all tube wells in the Upazila and cementing the platform (base) of the tube wells should be done immediately.

Mr. Joydev has given some exclusive observations regarding the WASH Programme. He said that, all people do not have the same demands. Some do not have tube wells, some need sanitary latrines, somebody want loan to repair tube wells, and again some other may not have hygiene knowledge. Poor and grass roots level people demand their needs to the field officials when they go to their door steps of grass roots people. However, field officers cannot fulfill all the needs they demand as the field officers have no allocation of money for all components. As a result, sometimes they have to face embarrassing situations before the clients. Another observation is that, at the eleventh hour of the project some field level officers and workers feel depressed due to the uncertainty of their job as it is project tied. This tendency seriously hampers their working spirit.

“...if the high authority emphasize on installation of deep tube well, arsenic test and repairing inoperative tube wells for Dhamrai area, it will be more beneficial for this arsenic prone community.”

According to him, the demand of all components of WASH Programme is not same to all areas. So the components and pattern of WASH Programme should be area specific. He thinks that, if the high authorities emphasize on installation of deep tube well, arsenic test and repairing inoperative tube wells for Dhamrai area, it will be more beneficial for this arsenic prone community in the Upazila.

4.5 Findings from the case studies:

1. Even one decade ago, many poor families in the villages of Dhamrai did not possess latrines. They did their defecation in open area or bushy places near the house. Women had to suffer a lot for not having latrines as they could not go to the open areas for defecation in broad day light. They used to go for defecation either before dawn or after dusk. WASH programme have helped them to be free from this sufferings.
2. WASH programme has made people aware of hygienic knowledge and good hygiene practice. Poor people, especially women have become very cautious about the use of sanitary latrine, cleanliness of latrine regularly, use of sandal, washing hands before preparing, serving and taking foods, and after defecation.
3. The activities of WASH programme are very popular in villages. Shahnaj Begum has become a UP member by acquiring popularity by doing WASH activities among the villagers as a programme assistant (PA) of BRAC WASH Programme.
4. WASH programme usually offers three components to the poor villagers. These are- tube wells for safe drinking water, sanitary latrines and hygiene education. All people have not the same demand. Some may not have tube well, some need sanitary latrines, somebody want loan to repair tube well and some other may not have hygiene knowledge. So the components of the programme should be area and beneficiary specific according to their demand.
5. Almost every day field officers go to the door steps of grass root level poor people. People demands many things related to this programme. Sometimes the field officers and programme assistants cannot fulfil their demands due to the lack of allocation of money for all components. As a result sometimes they have to face embarrassing situation before the helpless poor people.

4.6 Conclusion:

This chapter is the life blood of the research work. This empirical study on WASH programme in Dhamrai Upazila have been conducted in two methods; one is – data collection from forty respondents through survey questionnaire, and another is- the case study method on some selected people to get in depth knowledge about the programme by analyzing their behavior, attitude and experience. Many important information, comparative analysis and findings have been obtained from this chapter that have given us new dimensions of thinking and new horizon of ideas about the programme. The findings of this chapter have been discussed elaborately in the next chapter and some recommendations have been drawn from the extract of data analysis in the last chapter.

Chapter-05

5.0 Discussions

WASH Programme of BRAC has been initiated with a view to achieving the Millennium Development Goals (Goals 4 & 7) of reducing child mortality and halving the number of population without sustainable access to safe drinking water and basic sanitation by 2015. It has been mentioned earlier that this programme being executed in two phases. The first phase (WASH I) was completed within the period of 2006- 2011 in 150 Upazilas. By the financial support of The Netherlands Government, the second phase (WASH II) has been extended in 93 new Upazilas and previous 150 Upazilas of the first phase as well. WASH programme is also running in six haor Upazilas of Sylhet under BRACs own finance. WASH has been extended in five more Upazilas by the aid of Bill and Milinda Gates Foundation (BMGF). So, WASH programme is now running in 254 Upazilas in Bangladesh.

WASH Programme has been initiated in Dhamrai Upazila (the study area of this research) in the first phase and is continuing WASH activities there till now. The objective of this study is to find out whether WASH programme is benefiting the health conditions of the people. For this purpose, a questionnaire was developed that consisted of total 28 questions on respondent's demographic profile and on their drinking water, sanitation facilities and hygiene practices. Several case studies have been taken from beneficiaries, field assistants and project authority to get in depth knowledge and to know ins and outs as well as flaws and facts of this programme.

The researcher has drawn the following observations on this programme of the study area by analyzing data from questionnaire, extracts from the case studies, reports from the field office and other observations during survey.

1. Water:

In Dhamrai Upazila, tube wells are not only the source of drinking water but also the water source of all other day to day activities like bathing, cooking, washing clothes, utensils etc. That is, the inhabitants of Dhamrai are fully dependent on tube well water as other source of water like rivers, ponds; canals etc are seriously contaminated by industrial wastes. So, tube well is very essential instrument for the inhabitants of Dhamrai to meet their all water related needs.

But the poor and ultra poor people usually cannot afford a tube well. So they have to depend on tube wells of others for water. In some cases such tube wells are not all times accessible to the poor. The poor have to fetch water from a distant place. Due to these hindrances (lack of affordability, accessibility and distance) on getting tube well water sometimes make them (poor people) try to have unsafe water for drinking and other purposes.

According to the base line survey 2007 (done by BRAC), there are 41752 tube wells in Dhamrai Upazila. Some of these shallow tube wells become inoperative during dry season because of ground water table depletion. Another alarming problem is that, Dhamrai is an

arsenic prone area. Many tube wells are not arsenic tested. According to the field study, around 50 percent respondents do not know whether the tube well water they use are arsenic contaminated or not. BRAC (WASH) has installed only 34 deep tube wells in three unions namely Sutipara, Sombag and Nannar out of 16 unions of Dhamrai upazila. This is very much negligible compared to the actual demand or need.

It is very urgent to undertake thorough arsenic testing of all tube wells in the Upazila. During survey, it has been seen that, there many tube wells owned by poor people, have been inoperative as the owners cannot afford to repair those.

The survey has also shown that, around 50 percent tube wells have no platform (base) or have broken platforms that may cause contamination of tube well water. Only 402 platforms of tube wells have been made by the financial support (loan) of BRAC (WASH) programme, which is quite negligible as compared to the huge demand.

2. Sanitation:

BRAC (WASH) programme has done very significant work in sanitation sector in Dhamrai upazila. In 2007, (before WASH programme) the sanitation coverage in Dhamrai was only 31.92 percent (Baseline survey, 2007). This had increased to 66.54 percent in 2011 (Survey Report 2011) and the present status of sanitation coverage in this Upazila is 74.66 percent.

According to the study, around 85 percent respondents used traditional latrines and 10 percent respondents did their defecation in open areas. WASH programme has successfully changed the whole scenario. Due to the intensive effort of the WASH programme, 100 percent respondents use sanitary latrines now.

Under this programme, BRAC has already distributed 7176 sets of sanitary latrine and 150 sets of ring slab at free of cost among the ultra poor households. Total 35880 ultra poor people have been benefited from 7176 set latrines and 776 ultra poor people have been benefited from 150 sets of ring slab as grant from this programme. This programme has also given loans to the poor for 1909 sets of sanitary latrines that have already given enormous benefit to 11454 poor people in the area. Besides these, WASH programme has installed 28109 pieces of water seal or siphon in traditional latrines to convert those into sanitary latrines.

All these efforts have made significant progress in overall sanitation coverage (31% in 2007 to 74% in 2012) in Dhamrai Upazila. The field survey has also depicted that, among the 40 randomly selected respondents, 95 percent respondents have made sanitary latrines by the financial help of BRAC (WASH) programme.

3. School sanitation in high school for girls' students:

School sanitation is one of the components of WASH programme. Through this programme, sanitary latrines with brick wall are installed in high schools for girl students. One set of latrine consists of two toilets. One toilet is for 75 girl students. Minimum one set of toilet is supposed to be installed in each school. The number of required latrine is measured by dividing total girls students in the school by 75.

$$\text{Latrines required} = \text{Total no of girls students} / 75$$

A school brigade committee is formed by 24 students from class six to nine. Six students are taken from each class (3 boys and 3 girls). The student brigade is updated each year. There is another committee called 'School WASH Committee' presided by head master. These two committees are responsible to ensure sanitation in school and to maintain a hygienic and clean environment in the school premise.

In Dhamrai upazila, there are 27 high schools where girl students are studying. Only 23 sets of latrines have been installed in 23 schools. There are four schools remaining where no latrine have been installed by BRAC. About 11300 girl students are studying in these 27 schools. According to the assessment that, one latrine is for 27 girl students, and then the existing 23 sets of latrines can cover the requirements of (23×27) of only 3450 girl students. So around more 53 sets of latrines are needed for the remaining 7850 girl students.

4. Hygiene knowledge and Practices:

Safe water, sanitation facilities and hygiene are pivotal for life. The WASH programme has focused primarily on provision of tube wells and latrines. But people do not always make proper use of such facilities due to lack of knowledge, awareness and good hygiene practices. The term hygiene was not incorporated in the programme at the initial stage. Hygiene was paid little attention as compared to other two components 'safe drinking water' and 'sanitation'. But without good hygiene practices, ensuring safe drinking water facility and proper sanitation will not be achievable.

Changing hygiene behavior is complex. Hygiene promotion becomes more successful when it targets a few behavioral changes. Based on extensive research, BRAC has identified some hygiene messages that are disseminating towards community for good hygiene practices. These are as follows;

Hygiene practices for cleanliness

- a. Clean hands with soap before preparing and serving foods, feeding foods as well as taking foods.
- b. Clean hand with soap after defecation and cleaning the stool of children.
- c. Always cover the foods so that flies cannot sit upon foods. Never eat open and rotten foods.

- d. Keep household's wastes and kitchen wastes in a specific pit and cover the pit. It could be used as manure afterwards.
- e. Keep clean the ponds, ditches and canals nearby the house.

Hygiene practices for sanitation

- a. Do not use open area or unsanitary latrine for defecation.
- b. Keep soap and sufficient water in water reservoir inside the latrine.
- c. Always use sandal (slipper) in the latrine.
- d. Pour huge and sufficient water after the use of latrine. Clean the latrine every day.
- e. Take the water pot in right hand in both time of going and returning from the latrine.

Hygiene practices for drinking pure water

- a. Collect drinking water from green marked (arsenic free) tube well.
- b. Do the Arsenic test of your tube well at least once a year.
- c. Cover the drinking water pot.
- d. Cement the platform (base) of the tube well.

To know the state of hygiene behavior and practices in the research area (Dhamrai upazila), the researcher inserted some topics of hygiene behavior and practices like use of sandals in the latrine, use of soap for hand washing after defecation and cleanliness of latrines etc. in the questionnaire of the field survey.

Table 31: Comparative analysis of hygiene practices (before and after WASH Programme)

			Frequency of cleaning the latrine					
			Several times a day	Once a day	Two or three days interval	Once a week	Monthly or more	Not applicable
Before WASH programme	37.5%	32.5%	nill	nill	2.5%	20%	65%	12.5%
After WASH programme	100%	95%	5%	22.5%	65%	7.5%	nill	nill

According to the findings of the study, before WASH programme only 37.5 percent respondent used soap for hand washing after defecation. But due to the deliberation of hygiene messages effectively to the door steps of all people by WASH programme 100 percent respondents are now using soap for hand washing after defecation.

Before WASH programme only 32.5 percent respondents always used sandals during defecation, but now it has increased to 95 percent. A significant change has been seen in the frequency of cleaning the toilets. Before the WASH programme, most of the respondents (65%) cleaned their latrines monthly or more. Whereas after WASH programme, now most of the respondents clean their latrines after two or three days interval or daily. Before WASH programme, there were some people who did their defecation in open places or bushy areas. For this, 12 percent respondents have been seen in the provision of 'not applicable'. Here 'not applicable' means that those respondents did not use toilets let alone clean latrines before WASH programme. So it seems that WASH programme has significantly impacted habits of people in area and thus contributing to improved health conditions of the people in the study area.

5. Overall programme impact on health condition:

Wash Programme is basically an integration of safe water, basic sanitation facilities and good hygiene knowledge and practices. These three things combindly affect to the health condition of the poor. Tube wells as safe water source, sanitary latrines for basic sanitation and hygiene knoledge and practices are equally important for ensuring better health condition of the poor people. These three things are intertwined with each other.

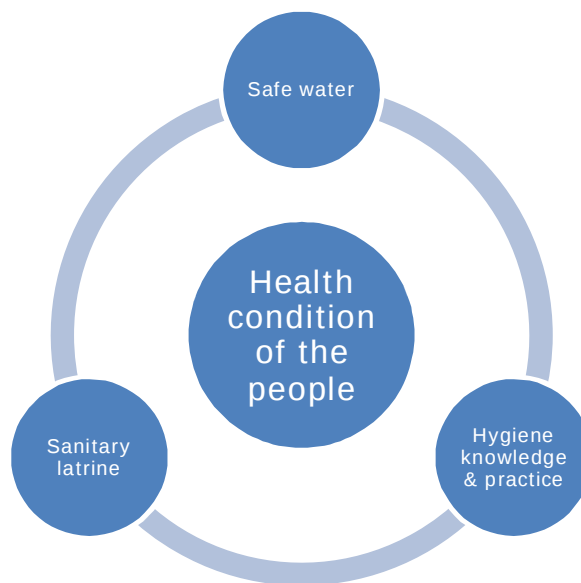


Figure 20: A relationship of WASH components on the health condition of people.

The overall programme improvement can be seen from the following table;

Table 32: Trends of some programme components indicating effects on health condition of the people

No	Components	Before WASH Programme	During survey (December'2012)	Change
1	Tube well as a source of drinking water	95	100	05% increase
2	Accessibility of drinking water source	67.5	95	27.5% increase
3	Use of sanitary latrine	2.5	100	97.5% increase
4	Use of soap for hand washing after defecation	37.5	100	62.5% increase
5	Use of sandals during defecation	32.5	95	62.5% increase

Besides these, arsenic test of the tube wells, cementing the platform of the base of tube wells help to reduce contamination of drinking water. Proper use and maintenance of sanitary latrines with hygienic practices help to reduce diarrhoeal diseases significantly. The study results show that, before WASH programme, around 90 percent respondents were afflicted by diarrhoeal diseases more than 5 times in a year. But due to the effective activities of WASH programme this percentage has now been reduced to zero percent. Presently, during the survey year, we have not found a single respondent who has afflicted by diarrhoeal diseases more than 5 times a year. This is obviously a great achievement of WASH programme in Dhamrai Upazila.

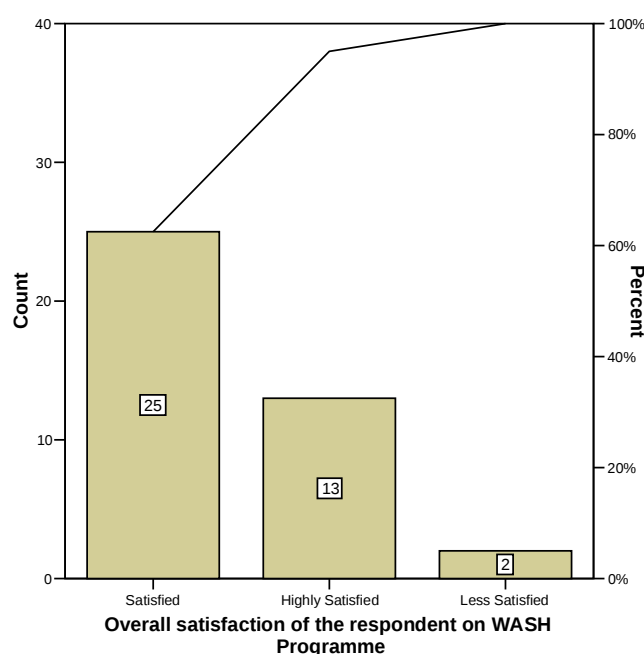


Figure 21: Overall satisfaction level of the respondent on WASH Programme

The improvement of health conditions of the poor people of Dhamrai through the WASH programme has been reflected by the respondent's opinion on the question 'overall satisfaction level of the respondent on WASH programme.' Among forty respondents, 62.5 percent are satisfied and 32.5 percent are highly satisfied with the programme activities. That is, all the respondents except 5 percent are either satisfied or highly satisfied with the WASH programme. People of Dhamrai are fully dependent on underground water for washing, bathing, cooking and obviously drinking purpose, as surface water sources like ponds, canals, rivers etc are seriously contaminated by industrial and human wastes. The poor people, who cannot afford to install a tube well, expect from BRAC that they would install tube wells in their locality to solve the water crisis. BRAC has installed only 34 deep tube wells only in three unions out of sixteen unions of this upazila. This is very negligible effort on the part of BRAC as compared to huge demand. That is why, five percent people have been found 'Dissatisfied with BRAC's activities' during survey.

According to the analytical framework of this research work, there are three components of WASH Programme. These are-

1. Water (Safe Drinking Water)
2. Sanitation (Sanitary Latrine), and
3. Hygiene (Hygienic knowledge and practices)

If the poor people want to avail safe drinking water and sanitation facilities, he/ she has to satisfy three indicators; these are:-

- i. Accessibility
- ii. Affordability, and
- iii. Usability

Let us see that, to what extent these indicators have been fitted into with the empirical study (survey data).

Accessibility: The survey data has revealed that, only 67.5 percent people had all time accessibility for drinking water before WASH programme. After WASH programme, this accessibility has been raised to 95 percent.

Affordability: People's affordability for sanitary latrine has been increased a lot. The survey has depicted that, 95 percent respondents have made their sanitary latrine with the financial help of BRAC WASH programme.

Usability: The survey has shown that, only 2.5 percent respondents used sanitary latrine before WASH programme. WASH programme has successfully changed the whole scenario. According to the survey, 95 percent respondents are now using sanitary latrines.

Moreover, WASH programme has also contributed to increase hygienic knowledge and practices significantly. According to the survey, before WASH programme only 37 percent

respondents used soap for hand washing after defecation. Due to dissimulation of hygienic message efficiently through WASH programme, now the soap user for the same purpose have been stood hundred percent. This is obviously a very good achievement of WASH programme.

All of these indicators have successfully affected to improve the health condition of the poor people. The survey has shown that, 72 percent respondents were afflicted by diarrhea more than five times per year before WASH programme. On the contrary, due to the successful implementation of WASH programme, there is no single respondents have been found after WASH programme who has been afflicted by diarrhea more than five times a year.

This is clearly indicated that, WASH programme of BRAC has helped to improve the health condition of the poor people in the area.

Chapter 06

6.0 Conclusions and Recommendations

6.1 Conclusions

BRAC has been working in water sanitation and hygiene sector through its WASH programme all over the country since 2006, attaining the MDG targets (Goals 4 and 7) on safe drinking water and basic sanitation. WASH programme is currently running in 254 Upazilas of Bangladesh. Dhamrai Upazila, the study area of this research is one of them.

It has been revealed from the study that, BRAC's WASH programme has achieved significant improvement in sanitation and hygiene practices. But their activity in safe drinking water is not that satisfactory in Dhamrai Upazila. On the whole, WASH programme is benefiting the health conditions of the poor in the study area as it has successfully reduced water borne/ diarrhoeal diseases of the poor people of Dhamrai Upazila. Finally, the study reveals that, most of the people of the study area are either satisfied (62.5 percent) or highly satisfied with the activities of WASH programme. However, the programme is not fully perfect and flawless. So, some policy implications are there and in this regard some policy suggestions have been made that would be helpful for the programme authority and policy planners concerned with water, sanitation and hygiene sector.

6.2 Policy Options/ Recommendations

WASH Programme of BRAC consists of three broad components- water, sanitation and hygiene. From the analysis of field survey (questionnaire survey and case studies) in the study area (Dhamrai), the researcher has proposed the following recommendations on the programme;

1. **Arsenic Test:** According to the report of Upazila WASH programme office, there are 41752 tube wells in Dhamrai Upazila. Among these 33265 have been arsenic tested and of them 32245 tube wells have been found to be arsenic free. But according to this Study, around 50 percent respondents do not know that the tube well from which they collect drinking water, are arsenic tested or not. Though DPHE is responsible for arsenic testing of tube wells, they cannot do it extensively in field level due to the shortage of workforce. If someone brings sample water to the office, only then they do the arsenic testing. So a thorough 'arsenic test' of all the tube wells in the Upazila should be done immediately. BRAC WASH programme can be the pioneer doing a thorough arsenic test in this Upazila.
2. **Installation of deep tube wells:** The people of Dhamrai are mostly dependent on tube wells for all sources of water including drinking purpose. Many shallow tube wells in this

locality become inoperative during dry season due to water table depletion. To solve the drinking water problem, BRAC's WASH programme has already installed 34 deep tube wells in three unions of the Upazila. But it is not sufficient. WASH authority can install sufficient number of deep tube wells to cover the Upazila.

3. **Making platform of tube wells:** According to the data of Upazila WASH programme office, there are 18493 tube wells having no platforms out of total 41752 tube wells in the Upazila. The field survey also shows that around 50 percent have no platform or broken platforms. It causes contamination of drinking water. Only 402 platforms have been made by the financial support (loans) of BRAC's WASH programme, which is negligible as compared to the actual demand. There are some poor and hardcore poor who cannot afford to take loans to make platform for their tube wells. WASH programme authority can make these platforms free of costs or through public- private partnership.
4. **Repairing inoperative tube wells:** There are some inoperative tube wells owned by hardcore poor people. BRAC WASH authority can take an initiative to make these tube wells operative. This initiative will help a lot to solve the problem of access of drinking water of hardcore poor.
5. **Use of sanitary latrines with two pits:** There are many sanitary latrines with one pit and temporary fencing with bamboo, sacks or leaves. It is not scientific and sustainable. Every sanitary latrine should be made with two pits and tin fenced. People can use these pits one after another and they can get good manure from this system. WASH programme can make people aware about making such types of sanitary latrines.
6. **Use of good quality siphon:** Good quality siphon should be used instead of water seal or lower quality siphons. Many sanitary latrines become unsanitary when siphon or water seal are broken due to the use of lower quality siphon or water seal. So, siphons can be purchased centrally by WASH head office so that the standard quality can be assured. Then, these can be distributed to the field offices according to their demands.
7. **School sanitation:** School sanitation is one of the components of WASH programme. There is provision to set up one toilet for 75 girl students. There are 27 high schools in Dhamrai where around 11,300 girls' students are studying. WASH programme has established only 23 sets of latrines in 23 schools that cover the demand of only 3450 students. According to the calculation, more 53 sets of latrines (each set consisting of 2 latrines) are needed for remaining 7850 girl students. So, required number of latrines should be installed immediately in high schools by WASH authority.
8. **School WASH committees:** BRAC WASH programme has formed two committees in every high school. One is 'school brigade' (consisting of 24 students) and another is

school wash committee presided by head master. These two committees are responsible to ensure sanitation in school and to maintain a hygienic and cleaned environment in the school premise. But their activities are not found upto the mark during field survey. So the WASH programme authority should be more attentive to activate these two committees.

9. **Disseminating hygiene messages to the students during assembly:** Hygiene messages are important for every student. Every student of all classes generally present in assembly. If even only one hygiene message can be disseminated everyday to the students during assembly, this will affect a good impact on hygiene practice. BRAC wash authority can think about this idea.
10. **Coordination among organizations:** Under WASH programme, hygiene messages are disseminated to the people by programme assistants (PA) and field organizer (FO) through women's meeting, children meeting, adolescent girls' meeting, gents meeting etc. Hygiene messages are also disseminated through BRAC's microcredit, health programme, adolescent girls' club (SOFEA) etc. As the same work is done by different organizations, there is possibility to overlapping or missing the beneficiaries. So, a strong coordination is needed among all the organizations delivering hygiene related activities in this upazila.
11. **Connect field offices with centre through digital devices:** Every upazila offices should be equipped with laptop and other digital devices so that upazila manager can corresponds with higher offices and vice versa. In the present system, upazila managers have to come regional offices for posting their reports on computer. If upazila offices become equipped with laptops, they can easily send their reports and maintain other correspondances through laptops. This initiative will help to accelerate the programme activities.
12. **Reporting System:** Upazila WASH offices have to send reports to head office monthly and quarterly. They have to send monthly performance reports (MPR), school sanitation reports, water seal replacement reports, poor loan reports, VWC update reports, pit change reports etc. There is no provision to add comment in any reports, where the upazila officials can put their views or observation to the higher authority. So, there should be a provision of adding comments/ observation/ suggestions for the betterment of the programme in the forms of monthly reports. This will enrich policy makers to know the flaws and facts of the programme in root level.
13. **Job security of field level employees:** At the eleventh hour of the first phase of WASH programme (WASH I), it was observed that, some field level officers and workers had fallen in depression due to the uncertainty of their job. This tendency had seriously hampered the tempo of working spirit on that time. So, the high authority of this

programme can think about the matter to reduce the depression and uncertainty of field level junior staffs for the sake of smooth operationing of the programme in all times.

14. **Demand based programme components:** The demand of all components of WASH programme is not same to all areas. So the components and patterns of WASH programme should be area specific. For example, according to the field survey, it is observed that the demand of tube wells or deep tube wells is very high in Dhamrai upazila. So, the authority should emphasize allocating more tube wells in Dhamrai.

This research has been highlighted to know whether the programme is benefitting the health condition of the poor people. But this study could not make suggestions about the sustainability of the programme. For this, further research can be done concerning sustainability. However, this study will give impetus for further study related to water, sanitation and hygiene sector.

A continuous, sincere and sensible efforts on the holistic approach of the WASH programme that reflect the true demands of the poor and distressed people of this locality, can make this programme successful towards attaining MDG targets on safe drinking water and basic sanitation.

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Annexure 1:

Questionnaire on WASH Programme of BRAC

(All information collected in this study will be used only for the research purpose and the unanimity of the respondent will be ensured.)

Demographic Profile

1. Name:	
2. Sex :	
☐ Male	☐ Female
3. Age :	
☐ Below 10	☐ Between 31 to 40
☐ Between 11 to 20	☐ Between 41 to 50
☐ Between 21 to 30	☐ Above 50
4. Marital Status:	
☐ Married	☐ Single
5. Address	
Village:	Union:
Upazila: Dhamrai	District: Dhaka
6. Occupation	
☐ Student	☐ Agriculture
☐ Service	☐ House wife
☐ Labor	☐ Others
☐ Business	
7. Educational Status	
☐ Illiterate	☐ SSC
☐ Primary School	☐ HSC
☐ Secondary School	☐ Degree and above
8. Family Income (Monthly income, BDT)	
☐ No income	☐ Between 10000- 20000
☐ Below 5000	☐ Above 20000
☐ Between 5000- 10000	

Respondent's view profile**1. Source of Drinking water**

After WASH Programme	Before WASH Programme
☐ Tube well ☐ Pond/ River/Canals ☐ Pipe water ☐ Well ☐ Others	☐ Tube well ☐ Pond/ River/Canals ☐ Pipe water ☐ Well ☐ Others

2. Distance of drinking water source from house

After WASH Programme	Before WASH Programme
☐ At home stead ☐ Within 100 meters ☐ 100-500 meters ☐ Above 500 meters	☐ At home stead ☐ Within 100 meters ☐ 100-500 meters ☐ Above 500 meters

3. Accessibility of drinking water

After WASH Programme	Before WASH Programme
☐ Accessible all time ☐ Not accessible all time	☐ Accessible all time ☐ Not accessible all time

4. Types of water sources used for the following purpose

Use	Source	
	Rainy season	Dry season
1. Drinking Purpose		
2. Cooking purpose		
3. Washing utensils		
4. Washing hands before food serving		
Taking bathe		
Toilet purpose		

[Note: Put 1= Tube well, 2= Pond/ River/ Canals, 3= Pipe water, 4= Well, and 5= Others]

5. Ownership of the tube well

☐ Self owned	☐ Owned by others
☐ Jointly owned	☐ Installed by BRAC

6. The tube well is operative-

☐ All the year round	☐ Most of the time of a year
☐ Not in the dry season	☐ Only a few months of the year

7. When the tube well is inoperative, drinking water is collected from-

☐ Other tube well	☐ Well
☐ Pond/ River/ Canals	☐ Others

8. Whether the water used for drinking purpose is arsenic contaminated or not-

☐ Arsenic contaminated	☐ Not tested/ Unknown
☐ Arsenic free	

9. How long before the Arsenic Test has been done-

☐ Below one year	☐ More than five years
☐ Between one and five years	☐ Unknown

10. Arsenic Test has been done by-

☐ Self	☐ BRAC
☐ Government	☐ Others
	☐ N/A

11. The platform (base) of the tube well is-

☐ Cemented platform	☐ Broken platform
☐ No platform	

12. Types of latrine used (where defecation takes place)

After WASH Programme	Before WASH Programme
☐ Sanitary latrine (with ring slab and water seal) ☐ Semi sanitary latrine (with ring slab but broken water seal) ☐ Unsanitary latrine (without ring slab and water seal) ☐ Open Area ☐ Others	☐ Sanitary latrine (with ring slab and water seal) ☐ Semi sanitary latrine (with ring slab but broken water seal) ☐ Unsanitary latrine (without ring slab and water seal) ☐ Open Area ☐ Others

13. Fencing system of the latrine-

After WASH Programme	Before WASH Programme
☐ Fenced by brick wall ☐ Fenced by tin ☐ Fenced by bamboo/ leaves/sack/ other temporary materials ☐ Without fencing ☐ Others	☐ Fenced by brick wall ☐ Fenced by tin ☐ Fenced by bamboo/ leaves/sack/ other temporary materials ☐ Without fencing ☐ Others

14. Whether water reservoir and soap are kept inside the latrine-

☐ Water reservoir kept but not soap ☐ Soap is kept but not reserve water	☐ Both water reservoir and soap are kept inside ☐ None of these are kept inside
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15. Types of help from BRAC for sanitary latrine-

☐ Loan for ring slab ☐ Loan for fencing	☐ Both of these ☐ None of these
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16. After defecation, the respondent use-

After WASH Programme	Before WASH Programme
☐ Soap ☐ Ash/ Mud ☐ Only water ☐ Others ☐ Nothing	☐ Soap ☐ Ash/ Mud ☐ Only water ☐ Others ☐ Nothing

17. Latrines are cleaned:

After WASH Programme	Before WASH Programme
☐ Several times a Day ☐ Once a day ☐ Two or three days interval ☐ Once a week ☐ Monthly or more ☐ N/A	☐ Several times a Day ☐ Once a day ☐ Two or three days interval ☐ Once a week ☐ Monthly or more ☐ N/A

18. Whether respondent use sandal (shoes) during defecation-

After WASH Programme	Before WASH Programme
☐ Always use sandal ☐ Randomly use ☐ Never use	☐ Always use sandal ☐ Randomly use ☐ Never use

19. An average no of times the respondent attacked by diarrhoeal diseases (per year)

After WASH Programme	Before WASH Programme
☐ Not a single time ☐ 1 or 2 times ☐ 3 to 5 times ☐ 5 to 10 times ☐ 10 to 20 times ☐ More than 20 times	☐ Not a single time ☐ 1 or 2 times ☐ 3 to 5 times ☐ 5 to 10 times ☐ 10 to 20 times ☐ More than 20 times

20. Overall satisfaction level of the respondent on WASH Programme

☐ Dissatisfied ☐ Less satisfied	☐ Satisfied ☐ Highly satisfied
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Thank you for your cooperation