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## **The activities of Bangladesh water development board on the social environment of Bhadrabila union, Narail sadar upazila, Bangladesh**

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**Abstract:** The study was conducted at Bhadrabila union, Narail sadar upazila, Narail in Bangladesh. The study period was carried out during September to December, 2013. In the selected areas, the study was conducted on 375 persons. The collected information was totally interview and observation based study. In the study area the highest age distribution was 50% in 21-40 years. The second highest was 39% for 41-60 years. The third highest was 7% for the year of 1-20. The lowest age distribution was for the year of 60 and above. This study found that the highest respondents of 39% are the member of 3-4 family member range. 32% respondents are in the member of 5-6 family member range. 12% respondents are in the member of 7-8 family member range. This study represent that 18% houses were kacha, 27% houses were tin shade 29% half building and 26% house were building. Almost 3% respondents were in class 1-3, 31% were in class 4-6, 46% were in between class 7-9, 10% in S.S.C level and left 9% were in above S.S.C level. Almost 79% had sanitary latrine. . It was found that 28% peoples were and poor their monthly income was 3,000-6,000 taka, 40% peoples were middle class their monthly income was 6,000-9,000 taka, about 24% peoples were rich their monthly income was 9,000-12,000 and lest 8% peoples income were 12,000+. 90% tube wells were arsenic free and only 10% tube wells are arsenic contaminated. About 77% were related with the BWDB and rests 13% were not the beneficiary of the BWDB. About 86% respondants were benifited by the activities of the BWDB. About 100% of respondents are fully satisfied by the activities of BWDB in arsenic test. It was shown that the social life of the respondents of Bhadrabila Union Parisad was getting better. The most important thing is almost 100% of the respondents were satisfied by the activities of BWDB.

**Keywords:** Bangladesh Water Development Board; economical condition; social status; Narail

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### **1. Introduction**

Bangladesh is a country in South-Asia. It is bordered by India to the West, North and East; Burma to the Southeast and separated from Nepal and Bhutan by the Chicken's Neck corridor. To its South, it faces the Bay of Bengal. Bangladesh is the world's eighth-most populous country, with over 160 million people and among the most densely populated countries. It forms part of the ethno-linguistic region of Bengal, along with the neighboring Indian states of West Bengal and Tripura. The present-day borders of Bangladesh took shape during the Partition of Bengal and British India in 1947, when the region used to be known as East Pakistan, as a part of the newly formed state of Pakistan. It was separated from West Pakistan by 1400 km of Indian Territory (Massachusetts, *et al.*, 2005). Due to political exclusion, ethnic and linguistic discrimination and economic neglect by the politically dominant western wing, nationalism, popular agitation and civil

disobedience led to the Bangladesh Liberation War and independence in 1971. After independence, the new state endured poverty, famine, political turmoil and military coups. The restoration of democracy in 1991 has been followed by relative calm and economic progress. Geographically, the country is dominated by the fertile Bengal delta, the world's largest delta. The four largest and constitutionally recognized religions in the country are Islam (89%), Hinduism (8%), Buddhism (1%) and Christianity (0.5%) (Chadwick and Datta, 1999). Bangladesh is identified as a Next Eleven economy. It has achieved significant strides in human and social development since independence, including in progress in gender equity, universal primary education, food production, health and population control (Government of Bangladesh, Dhaka WSIP, 2000). However, Bangladesh continues to face numerous political, economic, social and environmental challenges, including political instability, corruption, poverty, overpopulation and climate change. Bangladesh is a founding member of SAARC, the Developing 8 Countries and BIMSTEC (GoB, 1999). It contributes one of the largest peacekeeping forces to the United Nations. It is a member of the Commonwealth of Nations, the Organization of Islamic Cooperation and the Non-Aligned Movement. The area of Narail sadar upazilla is about 381.76 sq km, located in between 23°02' and 23°17' North Latitudes and in between 89°23' and 89°37' East Longitudes (MoWR, 1998). It is bounded by Lohagara and Salikha upazilas on the north, Kalia and Abhaynagar upazilla on the south, Lohagara upazila on the east, Bagherpara and Jessore sadar Upazilla on the west (MoWR and MoLGRD & C, 2000). Population total 2,69,423 Male 1,37,234 Female 1,32,189; Muslim 1,87,207, Hindu 81,985, Buddhist 140, Christian 15 and others 76. Water bodies main rivers: Nabaganga, Chitra, Bhairab, Gobra Canal is notable. Administration Narail Thana was formed in 1861 and it was turned into an upazila in 1984 (Sanjiv, 2012). The main objectives of study were to identify the present and past social, economic, food habit and sanitation status of the people of Bhadrabila Union Parisad.

## **2. Materials and Methods**

### **2.1. Study area**

The study area is located at Bhadrabila Union under Narail district in Bangladesh. The study period was carried out during September to December, 2013. In present situation, The BWDB has done their work in many unions of Narail region in Bangladesh. But the study area was chosen is only one union parisad-Bhadrabila of Narail sadar upazilla as it is the most migrate area and it has good communication system.

### **2.2. Sampling unit**

The union Bhadrabila was selected as the representative of the BWDB activities area. This union was selected on the basis of random sampling and also taken various villages of the selected union. The households have been as sampling unit. The household members whose ages are more than 20 years and have vast knowledge and experience are generally treated as sampling unit and 375 respondents answer were taken for these study. Besides the age bellow 20 years are also taken for this study.

### **2.3. Data collection**

The villagers (both male and female) who were more or less 30 years of age group were selected as the major respondent group because they were more knowledgeable about the study area and with the topic of the study. The people of young Age were also selected to consider their own view related with the study. The data also obtain from women to know their problem. Some data were collected through self-observation to realize the actual effects by the activities of BWDB.

### **2.4. Questionnaire design and pre-testing and finalization**

By using of the reconnaissance survey and informal discussion a model of a questionnaire were designed and pre tested that the objective can be achieved conveniently. After pre testing some issue may be rejected or added and some may be prepared to conduct this survey based on reconnaissance survey, objective of the study and the selected components of the study.

### **2.5. Primary data collection**

Census survey has been played for this research work. The field survey was conducted to observe General information including age, sex economic status, earner number etc., present occupation and monthly income with household type, structure of household, status of household owner, toilet facilities before and after working the BWDB. The main sources of drinking water and cooking water before and after working the BWDB, agricultural Crop production before and after working the BWDB, effects by the activities of the BWDB, food having time,

reason etc. With status of present educational institutional facilities. The present status of Govt. and NGOs facilities, family owner supporting status, social work benefit and satisfaction of people of study area.

## 2.6. Secondary data

The secondary data are those which have been already been collected by someone else and which have already been passed through the statistical process. Secondary information such as statistical data, reports, maps have been collected from various offices of government and NGOs organization.

## 2.7. Data analysis

After collecting the data from primary and secondary sources efforts were made for processing the data. After sorting out the data and information were categorized and interpreted according to the objectives and analyses were done by the help of different analytical methods and computer programs.

## 3. Results and Discussion

A total of 375 people were interviewed during the survey period. A wide range and diversity of data were collected to find out the impact of the activities of the BWDB. The BWDB has mainly profound social activities in the study area. During the survey many information were recorded about their age, gender, housing Pattern, Arsenic contamination etc.

### 3.1. Age distribution, gender issues and household category in 2013 in Bhadrabila

In this study we choose 375 families and there were 1875 members. The average number of the population was 5. The male and female were 930 and 945 in number. The age distributing was presenting in Figure 1 (a). We found that the highest age distribution was 50% in 21-40 years. The second highest was 39% for 41-60 years. The third highest was 7% for the year of 1-20. The lowest age distribution was for the year of 60+.

Both male and female must be included for a better research from the It has been that 61% were female and 39% were male Figure 1(b). As it was a household survey and cropping harvesting time so most of the male in the family were absent in the house.

The household category depends on the family members when family members are increased this house hold category are increased. In Figure 1 (c) represent that 5% are 1-2 members family, 39% are 3-4 members family, 32% are 5-6 members family, 12% are 7-8 members family member, 10% are 9-10members family, 2% are 11-12 members family. This study found that the highest respondents of 39% are the member of 3-4 family member range. 32% respondents are in the member of 5-6 family member range. 12% respondents are in the member of 7-8 family member range. 10% respondents are in the member of 9-10 family member range and left 5% and 2% respondents are respectively in the family member of 1-2 family member range and 11-12 family member range.

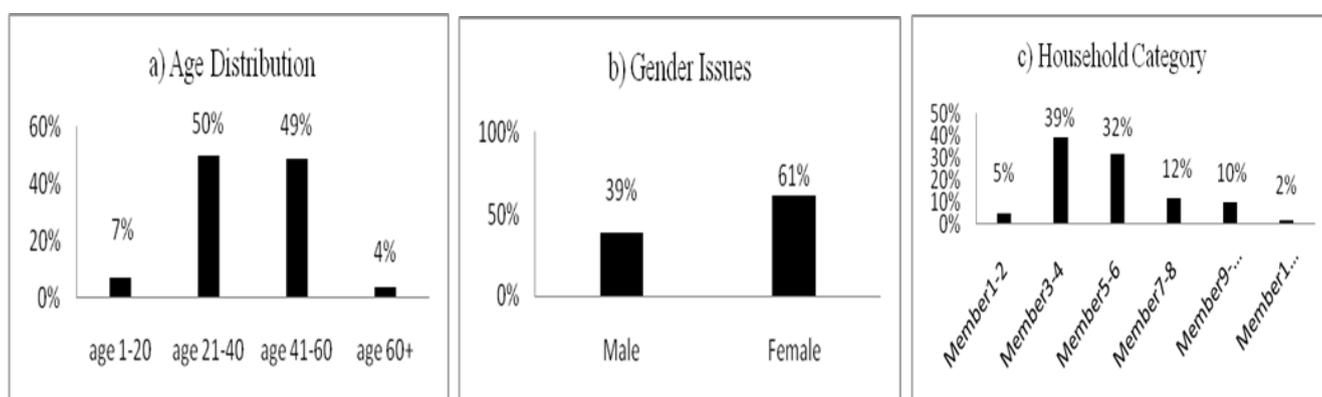


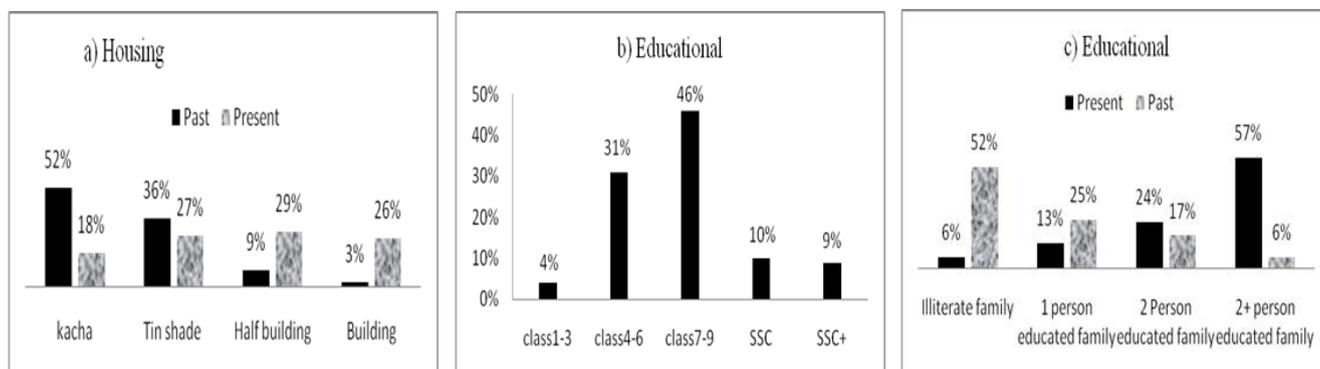
Figure 1. (a) Age distribution (b) Gender issues (c) Household category.

### 3.2. Housing pattern educational status 2013 in Bhadrabila

This study represent that 18% houses were kacha, 27% houses were tin shade 29% half building and 26% house were building (Figure 2. a). It was shown that the present housing condition was not so bad. The past the household conditions was not so good. Almost all the households were kacha and tin shaded. About 52% households were Kacha, 36% were tin-shaded, 9% were in half concrete and rest 3% were in full concrete. From the observation it is shown that the present condition of the household status is better than before.

The educational status of the study area is in average. Almost 3% respondents were in class 1-3, 31% were in class 4-6, 46% were in between class 7-9, 10% in S.S.C level and left 9% were in above S.S.C level (Figure 2.b).

Before 8 years the illiterate families were 52% but now it was 6%. One person educated family were 25% in past but now it is 13%. The 2 person educated family were respectively in 6% in before and now it is in 57% (Figure 2.c). From the study it is understand that literacy level is continuously increasing day by day.



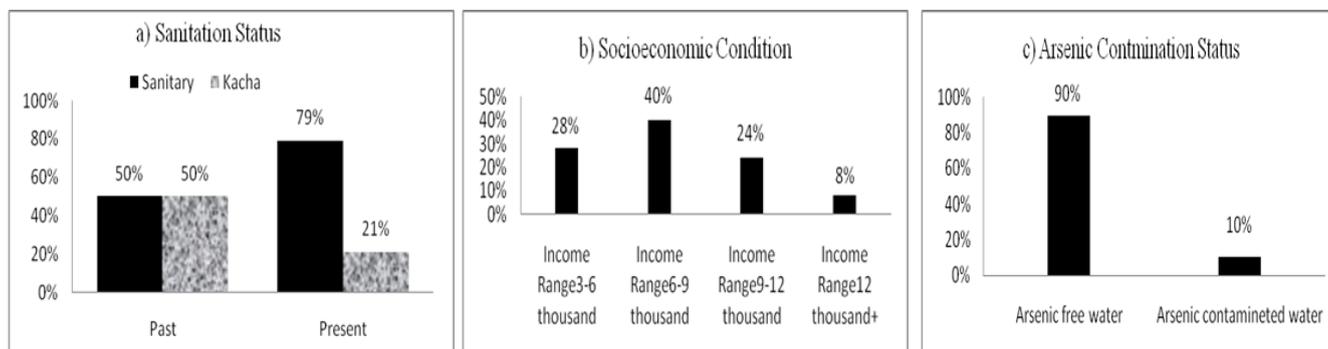
**Figure 2. (a) Housing pattern (b) Educational (c) Educational status.**

**3.3. Sanitation status, socioeconomic condition and arsenic contamination in survey 2013 in Bhadrabila**

Most of them had the sanitary latrine. Besides still who don't have the sanitary latrine they almost know about the sanitation. For their insufficient income they were not able to make the latrines. From the above figure it was shown that at present 79% had sanitary latrine (Figure 3.a). It means that the 79% people were conscious about sanitation. But rest of the respondents were not conscious about sanitation or did not have the ability to make sanitary latrine. The past sanitation status of the study area was in moderate. Almost 50% had the sanitary latrine. Besides rest 50% had not any sanitary latrines for their insufficient income and unawareness. Therefore we believe that the awareness built up due to the activities of the BWDB other factor may also be responsible which demands further study (WSIP, 2000 and Alekal, *et al.*, 2005).

It was found that 28% peoples were and poor their monthly income was 3,000-6,000 taka, 40% peoples were middle class their monthly income was 6,000-9,000 taka, about 24% peoples were rich their monthly income was 9,000-12,000 and lest 8% peoples income were 12,000+ (Figure 3.b). Therefore it can be said that the socioeconomic condition to the people of Bhadrabila was good getting better.

In the study area about 90% tubewells were arsenic free and only 10% tubewells are arsenic contaminated (Figure 3.c). Basically arsenic contamination status is well. All the tubewells are tested by the BWDB (National Water Resource Management Plan, 2004).



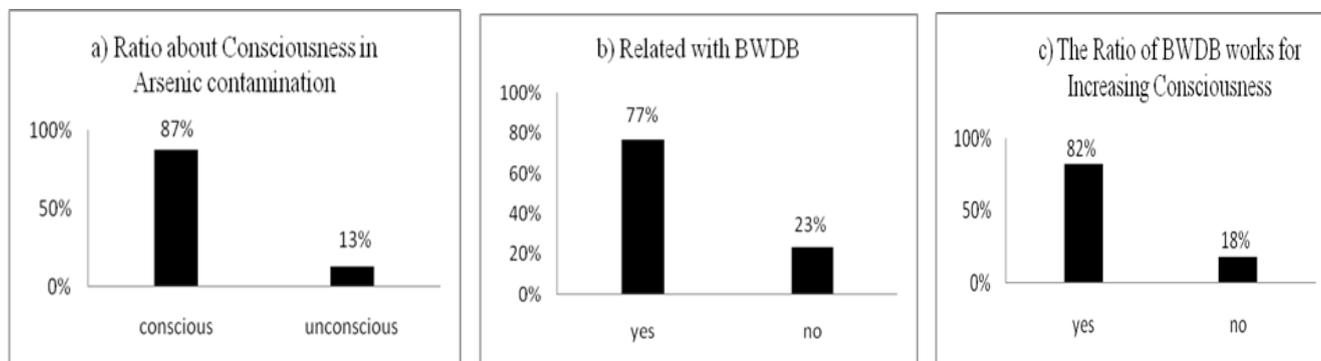
**Figure 3. a) Sanitation status b) Socioeconomic condition c) Arsenic status.**

**3.4. Different factors involvement of BWDB**

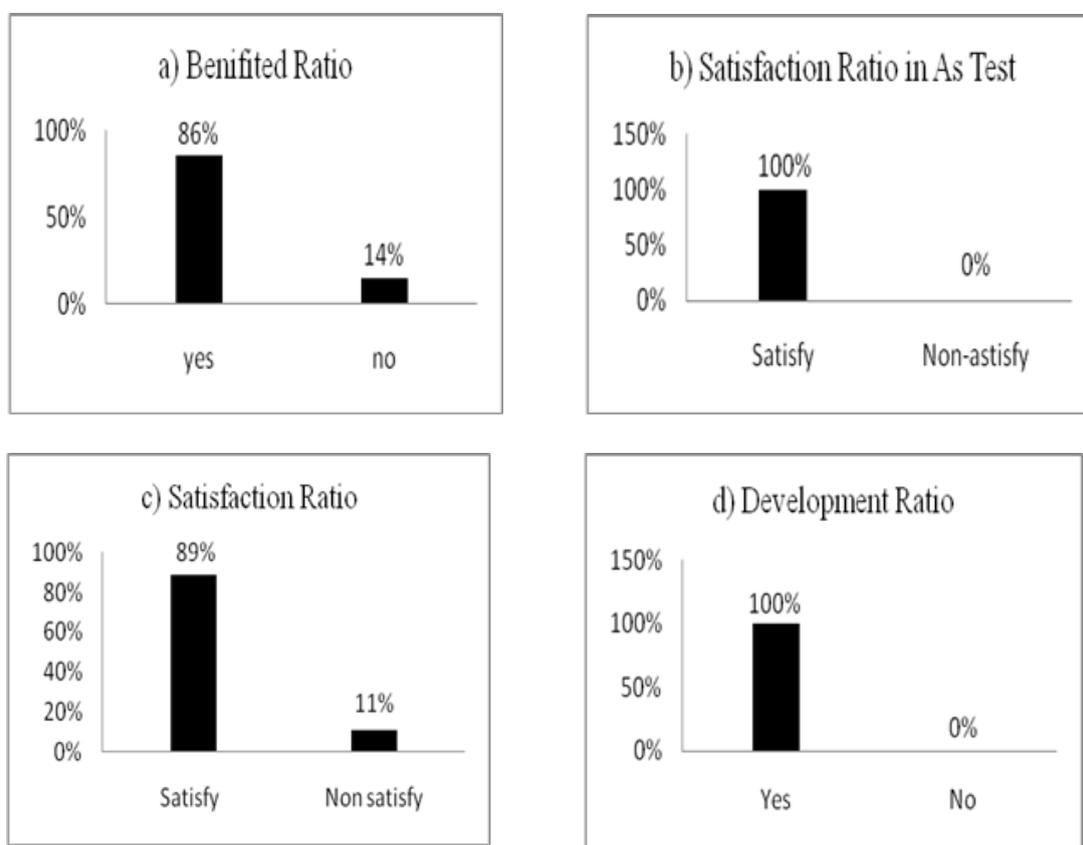
The status of the consciousness ratio of the respondents is very high. Almost 87% of respondents were conscious about arsenic and lest about 13% were not aware of arsenic (Figure 4.a). For this all the credits goes of the BWDB for their significant social activities. Many people believe that the BWDB could make aware all most all the people of the study are but they did not do their work peoples. They also believes that it could be

possible by expending the expended money, no addition money was not acquire it money BWDB did not perform their activities peoples (Water Management Plan, 2001).

Most of the people of the local area are related with the activities of the BWDB. About 77% were related with the BWDB and rests 13% were not the beneficiary of the BWDB (Figure 4.b). The BWDB for raising consciousness in different purposes of the study area like health and sanitation, arsenic contamination, adaptability in differences circumstances etc. Besides they works for increasing awareness for agriculture, fisherish, climate change etc. The present stydy showed that about 82% people get benefi9t from the activities of the BWDB and the remaining did not get benefit or victim teep (Figuer 4.c).



**Figure 4. (a) Ratio about consciousness in arsenic contamination (b) Related with the BWDB (c) The Ratio of the BWDB works for increasing consciousness.**



**Figure 5. (a) Benefited ratio (b) Satisfaction in arsenic test by BWDB (c) Satisfaction ratio by the activities of BWDB (d) Development ratio.**

**3.5. Benefited ratio, satisfaction in arsenic test by BWDB, satisfaction ratio by the activities of BWDB, development ratio during survey 2013 in Bhadrabila**

About 86% respondants were benefited by the activities of the BWDB (Figure 5.a). The rest of the respondants were not benefited by the activities of the BWDB. Explain why they were not benefited.

The BWDB had done arsenic test. They tested arsenic in every tubewells without any cost. When did you get tube wells the satisfaction number of the respondents. From the (Figure 5. b) it is shown that 100% of respondents are fully satisfied by the activities of BWDB in arsenic test. BWDB tested all the tube wells of the study area.

Most of the respondents are satisfied by the activities of BWDB. It was shown that 80% respondents are satisfied by the activities of BWDB. The rest 20% were not satisfied by their activities (Figure 5.c).

Different N.G.Os were also works at for the social welfare. Also the BWDB works in there. About 100% of the respondant gave their argument on the behalf of the BWDB (Figure 5.d). Its the another achievement of the BWDB that 100% of the respondents said that the contribution of was much higher. They also believes that more development could be possible with the expended money labourer time put they did not perform accordingly the BWDB for their development (National Water Management Plan, 2001).

#### 4. Conclusions

Bangladesh water development board (BWDB) stand of their in Bhadrabila to the better must of the local people. It was found that the contribution of the BWDB is very high to the development of the socio economic condition of the local people. The results reverb that the social status improved nakedly. Before starting the work of BWDB the social and economic condition of Bhadrabila was bent. Many people did not have sufficient money for building up sanitary latrin. It was thought the people have money in their had they use sanitary latrin, fond habit changed, they know about diarrhea, they know about the value of arsenic contamination the local people believe that more efficient and better result could be possible with the expended money and laborer in spite of have some dissatisfaction the contribution of the activities of BWDB is good and they contribution to the development of socio-economic condition of Bhadrabila though more better result could be possible. Water is central to the way of life in Bangladesh and the single-most important resource for the well-being of its people. All concerned government and non-government organizations and the people at large will all out efforts for the implementation of the policy for exploration, development, use and management of water resources of the country. Water resources management in Bangladesh faces immense challenge for resolving many diverse problems and issues. The most critical of these are alternating flood and water scarcity during the wet and the dry seasons, ever-expanding water needs of a growing economy and population and massive river sedimentation and bank erosion. There is a growing need for providing total water quality management (checking salinity, deterioration of surface water and groundwater quality, and water pollution and maintenance of the eco-system. There is also an urgency to satisfy multi-sector water needs with limited resources, promote efficient and socially responsible water use, delineate public and private responsibilities and decentralize state activities where appropriate. In the Bhadrabila union parisad the BWDB has worked many activities to do some betterment and development the water resources. The Bangladesh Water Development Board working for using & maintaining the valuable water properly by the people.

#### Conflict of interest

None to declare.

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