Bangladesh Journal of Public Administration (BJPA),
Vol.32(2), 2025, 87-103
ISSN: 1563-5023 (Print), 2664-4622 (Online)
DOI: https://doi.org/10.36609/bjpa.v32i2.1203

Bangladesh Public Administration Training Centre
https://bjpa.bpatc.org.bd/bjpa

Women's Suffering from Collecting Clean Water in The Coastal Areas of Bangladesh: A Study on Selected Two Upazilas

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ABSTRACT

The people in the coastal region of Bangladesh have been struggling to collect clean water for ages. There are various complications for getting clean water in the coastal areas of Bangladesh, like excessive salinity of water, drying up of clean water sources during the dry season, intrusion of saline water from rivers and canals, regular floods or cyclones, arsenic problems with tube well water and many other difficulties. Due to all these limitations on getting clean water, the people of this region have to struggle a lot to collect clean water. In the most families, the women have to collect water so the women are facing various challenges to collect clean water. This research aims to narrate the women's suffering from collecting clean drinking water in the coastal areas of Bangladesh, to state the present situation of clean water facilities and to identify the main challenges of getting clean water amenities for all in these coastal areas. The study adopts a quantitative technique to provide a comprehensive understanding. Both primary and secondary data sources were used in the research. The study was based on field investigation where 100 respondents were selected randomly from two coastal Upazilas of the Barguna district of Bangladesh. A structured questionnaire was administrated to a representative sample of households across different areas of this district. Existing data from government reports, academic publications and relevant databanks were analyzed to supplement primary data and provide context for the study. This research exposes that, in the coastal areas, 60% of women are facing various complications to collect clean water. The women who are facing problems collecting clean water, 65% of respondents are facing

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problems throughout the year and 35% of respondents are facing problems at a certain period of the year. It is clear that, a number of people living in the coastal areas are deprived of clean drinking water comforts and mainly the women of these areas have to face various complications to collect clean water.

Keywords: Bangladesh; Challenge; Coastal women; Clean Water; Salinity

INTRODUCTION

To diminish poverty, save the planet, and ensure that by 2030 all people enjoy peace and prosperity the United Nations adopted The Sustainable Development Goals (SDGs), also known as the Global Goals in 2015 as a universal call to action. To achieve the SDGs or sustainable development goals The United Nations has set a global target. There are total 17 Goals and among them the goal number 6 is to ensure that everyone has access to clean water and sanitation (Programme) Bangladesh has made significant progress toward SDG 6. In Bangladesh 48% of the inhabitants use safely managed drinking water services. (Zubaer, 2023) Basically In the last few years Bangladesh has made some progress in its various socio-economic indicators but ensuring clean water facilities for all, especially in coastal areas, still remains a big challenges. In Bangladesh, ninety-seven percent of the population uses groundwater for drinking and other domestic purposes as the scarcity of clean surface water but the ground water of everywhere is not safe (Hossain, 2006). According to the report of Water.org, in Bangladesh, 60% of people have access to clean water (water.org, 2024). Another report of WaterAid shows that 40.9% of people in Bangladesh use contaminated water. (WaterAid, 2024). It is the scenario of the entire Bangladesh. The condition of the coastal areas of Bangladesh is a little dissimilar. There is also still a big challenge in clean water. It is a major problem, especially for the river and seashore residents (the Daily Star, 2022). There are various challenges for getting clean water, these include excessive salinity of water, regular cyclones, dangerous arsenic, etc. It is alarming that the surface water salinity is gradually rising over time in the coastal areas of Bangladesh. (Taylor, et al., 2024) Basically the women are the main users of water in these regions because they are restricted to work in domestic spaces. Their gendered relationships to water in these regions play a vital role in their empowerment and powerlessness. (Subah, 2021) However, this research aims to state the women's suffering from collecting clean drinking water in the coastal areas of Bangladesh and to identify the main challenges of getting clean water amenities for all in these coastal areas.

OBJECTIVES OF THE STUDY

This research aims to narrate the women's suffering from collecting clean drinking water in the coastal areas of Bangladesh and to identify the main challenges of getting clean water amenities for all in these areas. The specific objectives of this research are:

a. To detect the real picture of the clean drinking water facilities in the coastal areas of Bangladesh

b. To narrate the women's suffering from collecting clean drinking water in the coastal areas of Bangladesh

c. To examine the current challenges of getting clean water facilities in the coastal areas of Bangladesh

METHODOLOGY

To provide a comprehensive understanding of the real picture of the clean drinking water and current challenges of the coastal women for getting clean water facilities the both quantitative and qualitative methods of research were used in this research. Interviews and surveys methods were used for the purpose. The research is conducted by questioning and interviewing the women of the coastal areas. Both open and close ended questions were placed for the respondents. To explore the real scenario, survey method was used to fold field data directly from the respondents. However, due to time and other different limitations and obstacles, four Unions from two coastal upazilas of Barguna district of Bangladesh have been purposively selected as the study area for this research. Kazirabad and Sarishamuri Unions of Betagi Upazila; and Kathaltali and Kalmegha Unions of Patharghata Upazila have been selected. The study was based on field investigation where 100 respondents were selected randomly from the two coastal Upazilas of the Barguna district of Bangladesh. The clean water crises and women's suffering from collecting clean water of the research area and the other coastal areas of Bangladesh are mostly matched. So, study area selection can be justified. Existing data from government reports, academic publications, and relevant databases is analyzed to supplement primary data and provide context for the study. The data have been analyzed by using simple mathematical tools like tabulation and percentage. In this research the data have been placed with chart/diagram and table.

RIVEW OF LITERATURE

Review of the literature is inevitable for a research work (Abedin, 2005). A number of studies have been conducted in the matter of clean water facilities in Bangladesh but none of them is directly concerned to this research. From them, some information, ideas and guidelines were taken for a conclusive completion of this research. Barua Roy and Munna (2019) broadly described the real picture of drinking water quality and sanitation facilities in the two selected Upazilas of the Noakhali district of Bangladesh. In their research article, they discussed the present situation of drinking water quality and sanitation facilities in the district. The real picture of the clean water facilities in the coastal areas of Bangladesh, the current challenges of getting clean water for all, the awareness level among the general people of the coastal areas about clean drinking water and specially the suffering of the women were not stated clearly. Haque and Ansari (2010) briliantly stated water, sanitation, and health conditions of Aila affected coastal area of Bangladesh. In their research, they emphasize the Ayla-affected area but the coastal areas of Bangladesh were not specifically discussed. In their research, the present challenges for getting clean water facilities for all and the women's suffering in the coastal area were not stated clearly. Hoque, et al. (2021) broadly discussed the drinking water facilities in the coastal area of Bangladesh. They give emphasize on institutional framework, financing, and information systems. However, the real situation of clean water facilities in the coastal parts of Bangladesh and the present challenges of women for collecting clean water facilities in this area were not discussed particularly. Khan, et al. (2011) were trying to assess salt intake from drinking water sources and to clarify the impact on maternal health in the coastline area of Bangladesh. However, the clean drinking water facilities in the coastal areas of Bangladesh and the current challenges of it were not stated clearly.

JUSTIFICATION OF THE STUDY AREA

To collect data from all the coastal zones' citizens of Bangladesh is very time-consuming as well as expensive. Only two upazilas of the Barguna district was selected by the researchers. Barguna is one of them among the 19 coastal districts of Bangladesh (WARPO, 2003). There are various professionals including, government and non-government employees, businessmen, teachers, farmers, day laborers, households etc. in this study area. It can give an overall idea of clean drinking water facilities for the citizens living in the coastal areas of Bangladesh in the other parts of the country. Moreover, the researchers permanently live in Barguna so, this zone has been chosen for the time-consuming.

CONCEPTUAL CLARITY

Coastal area of Bangladesh: The coastal area of Bangladesh is situated in the south zone of the country. Between 21-23° N and 89-93° E, the coastal zone of Bangladesh lies. The coast of Bangladesh is about 700 km long and can be broadly separated into three areas (Banglapedia.(n.d.). A total of 19 districts are in these coastal zone. The overall socio-economic picture of these coastal districts is not almost the same as the other zone of Bangladesh. The lifestyle of the people in this region is different compared to other regions of the country. Naturally, the lifestyle of the people is different here. Here nature controls many things related to the daily life of the people of these regions.

Upazila and Zila/ District: Basically two types of administration are exists in Bangladesh; Central and local administration. And local administration has three parts; division, District, and Upazila administration. At the local administration the district is the main administrative unit and the Upazila is an administrative unit that functions as a part of the district in the local area. A Deputy Commissioner (DC, district administrator) exercises his role as the executive head of the district and an Upazila Nirbahi Officer (UNO) exercises his role as the executive head of the upazila. 64 districts and 495 upazilas are in Bangladesh. Besides, 'Upazila Parishad' and 'Zila Parishad' ('Parishad' is a Bengali word that means council) are the regional unit of local self-government in Bangladesh. Basically, there are two types of local governments in Bangladesh; Rural or Regional local government and urban local government. Rural or regional local government has three tiers which are Zila (district) Parishad, Upazila Parishad, and Union Parishad (UP) (Banglapedia.(n.d.).

DATA ANALYSIS

Identifying the women's suffering from collecting clean drinking water in the coastal areas of Bangladesh was the main focus of this research. The collected data have been analyzed by using simple mathematical tools like tabulation and percentage. The collected data have been placed through diagram/ chart and table.

RESULTS AND DISCUSSIONS

The Sources of Water that are used by the People of the Coastal Areas

The research reveal that, most of the people of the coastal region of Bangladesh don't use the same sources of water for their drinking and cooking purpose. In the Figure: 1 it is clear that, 18% people use the same source of water for drinking and

cooking and 82% people use different sources of water for drinking and cooking. Generally the main causes of using different sources of water is the shortage of clean drinking water. People use clean water only for drinking because there are a lot of scarcity of harmless water.

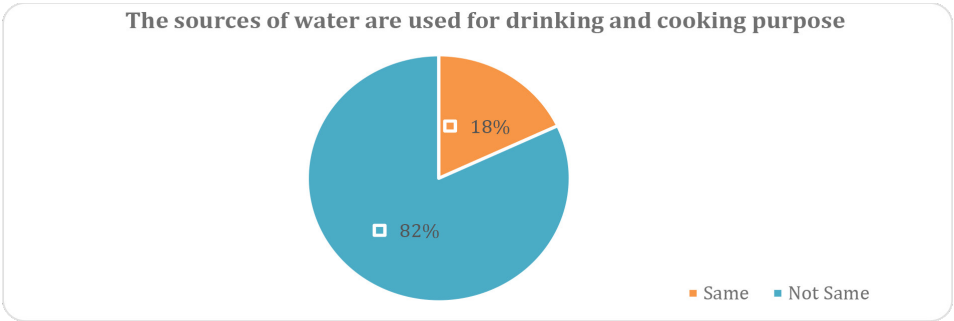

Figure 1: The sources of water are used for drinking and cooking purpose
Data source: Field data

The Drinking-Water Sources

Figure 1.1 reveals that, the people use various sources of water for drinking, 46% of respondent opine that they drink tube well water, 20% drink rainwater stored for a long period of time, 22% drink Pond, canal, or river water by purifying in various ways, 4% people drink Pond, canal or river water directly and 8% people drink supplied water by paying monthly. In this research work, it's obvious that the people of the coastal zone use various sources of water for drinking. The water of different places has different problems, so everyone isn't able to drink the water from the same sources.

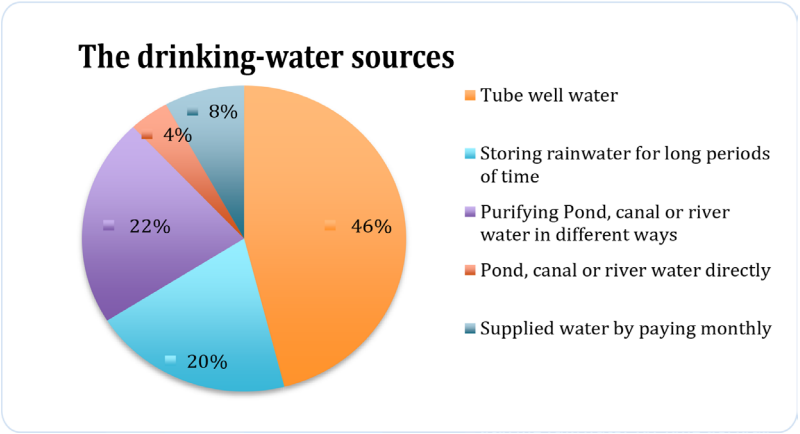

Figure 1.1: The Drinking-Water Sources
Data source: Field data

The Cooking-Water Sources

The Figure 1.2 shows that, 24% of the respondents use tube well water for cooking, 10% of the respondents use rainwater stored for a long period of time, 14% of the respondents use pond, canal, or river water by purifying in various ways, 42% of the respondents use pond, canal or river water directly and 10% of the respondents use supplied water by paying monthly. By this research work, it is clear that, as there is lack of clean water most of the people of this area use pond, canal, or river water directly for cooking.

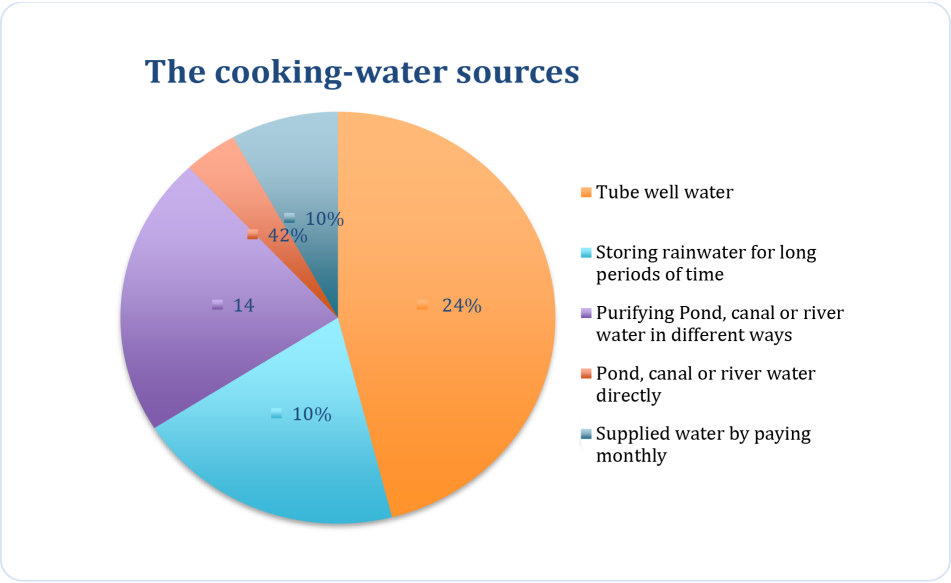

Figure 1.2: The Cooking-Water Sources
Data Source: Field Data

The Present Situation of Taking Clean Water

Figure 2 shows that, 54% of the people think that they use clean water for drinking and cooking, and 22% of the people think that they use unclean water for drinking and cooking. The rest of the respondents, 24% of the people are not sure that the water they use for drinking and cooking is clean or not. In this research, it's clear that a number of the people use unclean water and some of them are not sure that the water they use for drinking and cooking is clean or not. The people of the coastal zone have a lot of lack of awareness.

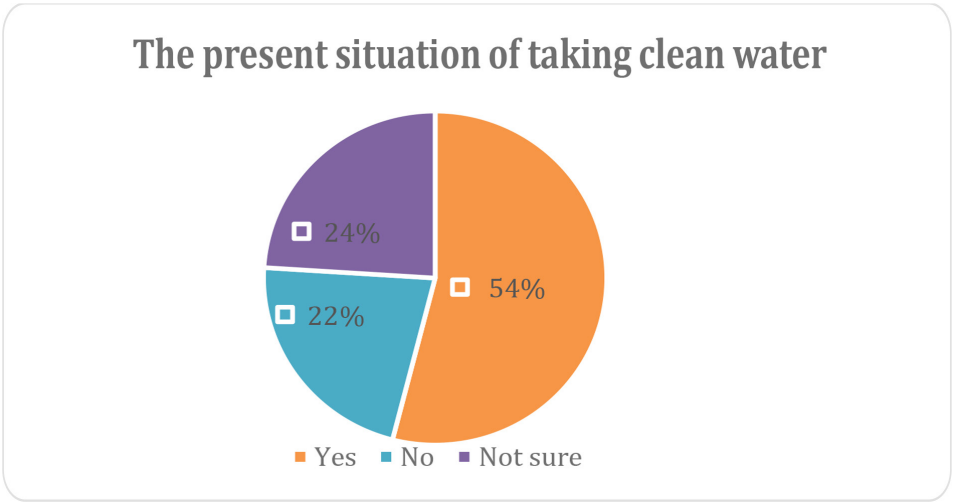

Figure 2: The Present Situation of taking Clean Water
Data Source: Field data

The Job of Collecting Water in the Family

The research reveal that, in most of the families the female member are mainly responsible for collecting water, in some families this crucial duty is performed by the male member of the family and in some families both male and female member performed this duty. In the Figure 3, we can see that in the 65% family the female member are collecting water, in the 20% family the male member are collecting water only in the 15% family both the male and female member performed the responsible of collecting water.

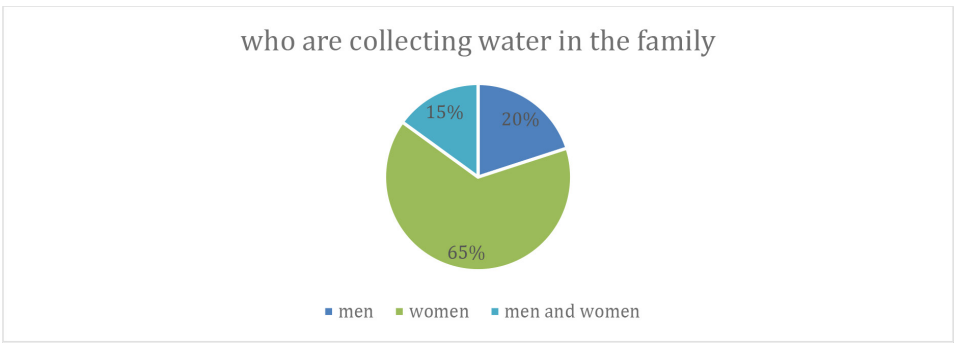

Figure 3: The Job of Collecting Water in the Family
Data source: Field data

Types of Water, the People have to collect

The research reveal that, in the most families water has to collect for daily activities. The Figure 4 shows, 60% respondents opine that they have to collect only drinking water, 5% say that, they have to collect only cooking water, 15% respondents say that, they have to collect both drinking and cooking water and only 20% opine that they have no need to collect water.

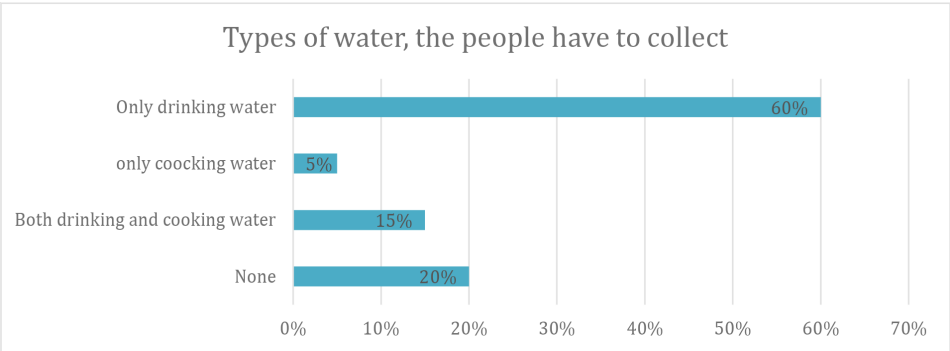

Figure 4: Types of water, the people have to collect
Data source: Field data

Period of collecting water

In the above figure we see that the most coastal people have to collect water for the need of their daily work. The Figure 5 shows that, the people who have to collect water among them 65% people opine that they have to collect water only the dry season and rest of 35% say that they have to collect water throughout the year.

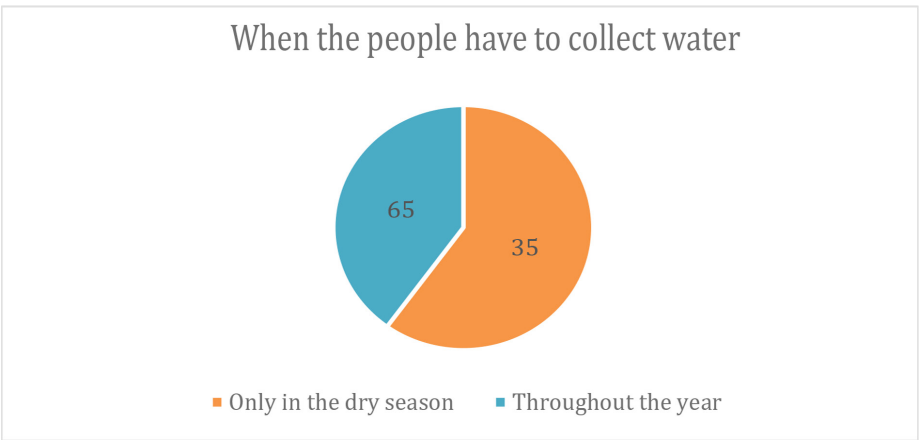

Figure 5: When the people have to collect water
Data source: Field data

Facing any problems when they are collecting water

The figure 6 shows that, the people who have to collect water among them 60% people opine that they have been facing various problems to collect and rest of 40% say that they have not been facing any problems to collect water in their areas.

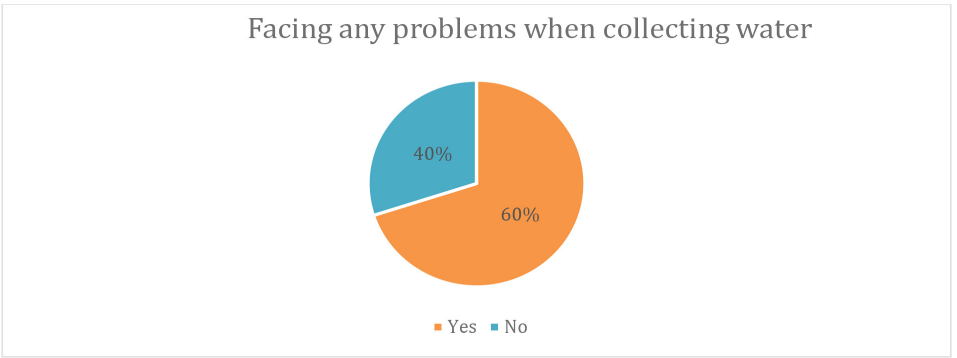

Figure 6: Facing any problems when collecting water
Data source: Field data

The Types of problems are facing by the women

Table 1 shows that, the women are facing different problems when they are collecting water. Especially in the dry season and in the saline area the women of these areas have to face various misery.19% women opine that during the dry season water has to be fetched from far away,

13% respondents opine that in the saline area, for the sources of fresh water have to walk a long distance, 26% of the women said that, it was very difficult to fetch water after doing all the household work, 19% respondents say that, in the dry season fresh water sources gets crowded, for which we have to stand for a long time to collect water, 16% respondents opine that, collecting water in adverse weather conditions is very difficult and 7% of women share that, Sometime the women have to face various harassment while they are collecting water.

Table 1: The problems are facing by the women while they are collecting water

The problems are facing by the women while they are collecting water	Frequency	percentage
During the dry season water has to be fetched from far away	19	19
In the saline area, for the sources of fresh water have to walk a long distance	13	13

It is very difficult to fetch water after doing all the household work	26	26
In the dry season fresh water sources gets crowded, for which we have to stand for a long time to collect water	19	19
Collecting water in adverse weather conditions is very difficult	16	16
Sometime the women have to face various harassment while they are collecting water	7	7
Total	100	100

Data source: Field data

Main Challenges of Getting Clean Water Facilities in the Coastal Areas

Table 2 shows the various challenges of getting clean water facilities, 16% of the respondents say that the tube-wells water is excessively saline and unusable for drinking, 31% of the respondents opine that, The water in the pond dries up during summer so there is an extreme water scarcity, 26% of people say that, The water of rivers and canals becomes salty in a certain time of the year and therefore it become unusable, 8% of people opine, that there is no system to retain rainwater throughout the year, 10% of people opine that, It becomes very difficult to collect water because the government ponds are far away, 9% of people think, due to lack of regular maintenance the water purification filters in government or private enterprises are often useless.

Table 2: Main Challenges of Getting Clean Water Facilities in the Coastal Areas

Main Challenges of Getting Clean Water Facilities in the Coastal Areas	Frequency	percentage
The tube-wells water is excessively saline and unusable for drinking	16	16
The water in the pond dries up during summer so there is an extreme water scarcity	31	31
The water of rivers and canals becomes salty in a certain time of the year, and therefore it become unusable	26	26
There is no system to retain rainwater throughout the year	8	8

It becomes very difficult to collect water because the government ponds are far away	10	10
Due to lack of regular maintenance the water purification filters in government or private enterprises are often useless	9	9
Total	100	100

Data source: Field data

Thinking among the general people of the coastal zone about clean drinking water

The United Nations (UNO) has set a global target to attain the sustainable development goals (SDGs) by 2030. Among the 17 goals the goal number 6 is to ensure that everyone has entrance to clean water and sanitation (Nations, n.d.). The general people of the coastal zone of Bangladesh have a little idea about SDGs as well as their goals. Figure 7.1 shows that, only 18% of the people have plain concept about Sustainable Development Goals (SDGs) as well as its goal 6: like, clean water and sanitation, 26% of the people have a rough concept and the rest of 56% haven't any idea about SDGs or about its goals. Figure 7.2 shows that only 26% of the people have an obvious concept about the diseases that can be spread by using unclean water, 64% of the people have a rough idea and the rest of 10% don't have any idea about it. In this research, it is obvious that most of the people of this area haven't any idea or have a rough idea about the diseases that can be spread by using unclean water.

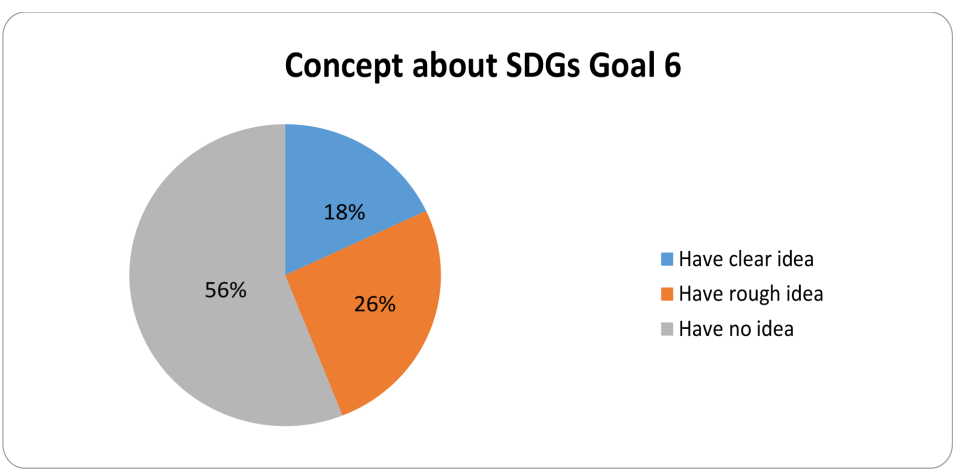

Figure 7.1: Concept about SDGs Goal 6

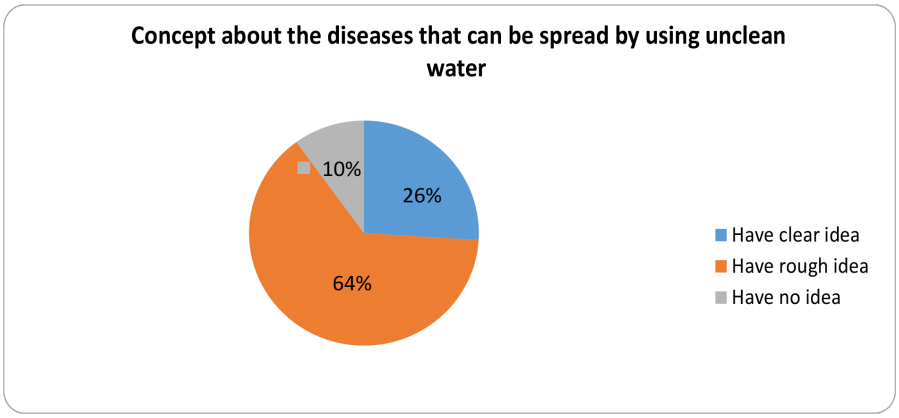

Figure 7.2: Concept about the diseases that can be spread by using unclean water
Data source: Field data

In this research it is obvious that, most of the people of the coastal zone don't use water from the same sources for drinking and cooking. The shortage of clean drinking water is the main cause of using different sources of water. They try only to drink clean water because they are not always able to use clean water for cooking. In the Figure: 1 it is clear that, 18% people use the same source of water for drinking and cooking and 82% people use different sources of water for drinking and cooking. In the research area most of the people drink tube well water and rainwater as the source of clean water. Some of the people drink Pond, canal, or river water directly. The research narrate that 46% of the people drink tube well water, 20% of the people drink rainwater by Storing it for long a period of time, 22% of the people drink Pond, canal or river water by purifying in different ways, 4% of the people drink Pond, canal or river water directly and 8% of the people drink supplied water by paying monthly. It's obvious that the people of these region use different sources of water for drinking. The water in different places has different problems so they drink the water from the different sources.

The research reveal that, in most of the families of the research area the female members are collecting water, in some families this crucial duty is performed by the male member of the family. In the Figure 3, we can see that in the 65% family the female members are collecting water.

The research prove that, in the most families the women members have to collect water for their daily activities. The Figure 4 shows, 60% of the people have to collect drinking water, 5% of the people have to collect only cooking water, 15% of the people have to collect both drinking and cooking water and only 20% opine that they have no need to collect water.

The research show that the most coastal people have to collect water for the need of their daily works. The Figure 5 shows that, 65% of the people have to collect water only in the dry season and rest of 35% have to collect water throughout the year.

In this research it is clear that the coastal women are facing various problems when they are collecting water from different sources. The Figure 6 shows that, 60% of the respondents are facing various problems when they are collecting water. Especially in the dry season and in the saline area the women of these areas have to face various misery. Table 1 shows that, 19% women opine that during the dry season water has to be fetched from far away, 13% respondents say that in the saline area, for the sources of fresh water have to walk a long distance, 26% of the women express that, it was very difficult to fetch water after doing all the household work, 19% respondents say that, in the dry season fresh water sources gets crowded, for which we have to stand for a long time to collect water, 16% respondents opine that, collecting water in adverse weather conditions is very difficult and 7% of women share that, Sometime the women have to face various harassment while they are collecting water.

In the coastal areas some specific challenges of getting clean water have been identified by this research. The table 2 shows the various challenges of getting clean water facilities, 16% of the respondents say that the tube-wells water is excessively saline and unusable for drinking, 31% of the respondents opine that, The water in the pond dries up during summer so there is an extreme water scarcity, 26% of people say that, The water of rivers and canals becomes salty in a certain time of the year, and therefore it become unusable, 8% of people opine, that there is no system to retain rainwater throughout the year, 10% of people opine that, it becomes very difficult to collect water because the government ponds are far away, 9% of people think, due to lack of regular maintenance the water purification filters in government or private enterprises are often useless.

The research prove that most of the people of these areas have no idea or have a rough idea about the diseases that can affected by unclean water. Figure 7.2 shows that only 26% of the people have an obvious concept about the diseases that can be spread by using unclean water, 64% of the people have a rough idea and the rest of 10% don't have any idea about it. In this research, it is obvious that most of the people of this area haven't any idea or have a rough idea about the diseases that can be spread by using unclean water.

CONCLUSION AND RECOMMENDATIONS

In various socio-economic indicators Bangladesh has made some remarkable advancement and has made special progress in ensuring clean drinking water facilities for its citizens but at the marginal areas, especially in coastal zone, it still remains a big problems. Because of the shortage of clean drinking water most of the people of these areas don't use the same source of water for drinking and cooking. In the most of the families of these regions the women members have to collect water throughout the year. Especially in the dry season and in the saline areas the women have been suffered more. When the women are collecting water from the various sources they have been facing various negative experiences. The people of these areas are facing various challenges of getting clean water like, excessive salinity of tube wells water, during the summer season extreme water scarcity, at a certain period of the year water of the rivers and the canals becomes salty and many other limitations. A number of the people of these areas have no access to clean water facilities because of the various limitations. However to ensure clean drinking water for the all citizens Bangladesh government should take urgent and sustainable initiatives. Some specific recommendations are given below which will be helpful for the concerned authority to take certain and fruitful initiatives.

I. Alternative freshwater sources should be ensured in which coastal areas the salinity of water is too high.

II. In the coastal areas most of the ponds dry up during the dry season so these ponds need to be dug regularly as ponds are one of the sources of fresh water.

III. To clean the ponds-water from contamination of garbage, animal excrement or harmful pesticides effective measures should be taken.

IV. By government or private initiatives, pond water purification filters should be installed. Due to lack of regular maintenance the water purification filters are often useless so it should be regularly maintained.

V. The coastal people should be encouraged not to use pond, canal, or river water directly and awareness should be made among the general people regarding the use of clean water. The People should be made aware of the diseases that can be caused by using unsafe water

VI. Sustainable arrangements should be made to store rainwater throughout the year where rainwater is the main source of fresh water.

VII. It is important to take certain program for those who are living below the poverty line so that they can get better from that situation soon.

VIII. To be a partner of the government`s initiatives, foreign donor organizations and domestic NGOs should be more encouraged.

REFERENCES

Abedin, D M 2005. A Handbook of Research. Dhaka: Book Syndicate.

Banglapedia.(n.d.). 2024. https://en.banglapedia.org/index.php/ Local _Government, Retrieved 12 18, 2024,

Barua, T, Roy, S K, & Munna, M M (2019). Status of drinking water quality and sanitation facilities in Subarnachar and Maijdee in Noakhali, Bangladesh. Asian Journal of Medical and Biological Research, 5(1), 41-45. doi:10.3329/ajmbr.v5i1.41043

Daily Star. 2022, November 19). 21 lakh people in Bangladesh practise open defecation: BBS. Retrieved from https://www.thedailystar.net/news/bangladesh/news/bangladesh-lags-behind-sanitation-3173416

Haque, M, & Ansari, M S 2010. Water, Sanitation and Health Status of Aila Affected Coastal Area of Bangladesh. Bangladesh Journal of Environmental Science, 19: 51-56.

Hoque, D S, P R Hope, M M Alam, D K Charles, P M Salehin, D Z Mahmud, and O R Garci. 2021. Drinking water services in coastal Bangladesh. Retrieved from https://www.research-collection.ethz.ch/ bitstream/ handle/ 20.500.11850/523687/1/Hoque-et-al-2021-CleanPani-report-KHULNA.pdf

Hossain, M (2006, april). Arsenic contamination in Bangladesh—An overview. Agriculture, Ecosystems & Environment, 113(1-4), 1-16. doi:https://doi.org/10.1016/j.agee.2005.08.034

Khan, A E, A Ireson, S Kovats, S K Mojumder, A Khusru, A Rahman and P Vineis. 2011, April 12. Drinking Water Salinity and Maternal Health in Coastal Bangladesh: Implications of Climate Change. Environmental Health Perspectives 119(9): 1328-1332. doi:10.1289/ehp.1002804

Nations, U (n.d.). Department of Economic and Social Affairs Sustainable Development Goals. Retrieved from https://sdgs.un.org/goals

Programme, U N (n.d.). THE SDGS IN ACTION. Retrieved from https://www.undp.org/sustainable-development-goals

Rahman, M M 2009. Successful Integrated Coastal Zone Management (ICZM) Program Model of a Developing Country (Xiamen, China) – Implementation in Bangladesh Perspective. Journal of Wetlands Ecology, 13(1): 10-16.

STATISTICS, B B (2022). POPULATION & HOUSING CENSUS 2022. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh. Retrieved from https://sid.portal.gov.bd/sites/default/files/files/sid.portal.gov.bd/publications/01ad1ffe_cfef_4811_af97_594b6c64d7c3/PHC_Preliminary_Report_(English)_August_2022.pdf

Subah, S (2021). Access to Drinking Water and the Empowerment of Women in the Southwest Coast of Bangladesh: Intersections of Gender, Class, and Space. The Yale Undergraduate Research Journal, 2(1). Retrieved from https://elischolar.library.yale.edu/yurj/vol2/iss1/24

Taylor, R G, Haq, M I, Shamsudduha, M, Zahid, A, Ahmed, K M, & Kamal, A S (2024, april 17). What drives changes in surface water salinity in coastal Bangladesh? Frontiers in Water, 6. doi:https://doi.org/10.3389/frwa.2024.1220540

WARPO. (2003). Delineation of the Coastal Zone. Dhaka: Program Development Office. Retrieved from https://warpo.portal.gov.bd/sites/default/files/files/warpo.portal.gov.bd/page/aa04373f_0ca3_49a5_b77e_5108186638dc/wp005.PDF

Water.org. 2024. Bangladesh's water and sanitation crisis. Dhaka. Retrieved from https://water.org/our-impact/where-we-work/bangladesh/

WaterAid. 2024. Bangladesh - Facts and Statistics. Retrieved from https://www.wateraid.org/bd/bangladesh-facts-and-statistics

Zubaer, A R (2023, february). Evaluation of Bangladesh's SDG6 achievement: A review. Journal of Environmental Engineering and its Scope, 6(1). doi:10.5281/zenodo.7627648.