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"Community, Culture and Water: Issues & Consequences- A Case Study in the village Ahira, Barasat, West Bengal"

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Abstract: Water exerts a profound influence on various aspects of human life and culture. This study presents an ethnographic exploration of how water shapes the culture of the Bengali Muslim Community in the village of Ahira. The community relies on clean water to fulfill various needs including production, consumption, metaphysical rituals, and cleaning purposes. However, due to inadequate water supply in the village, residents face water scarcity in their daily activities. To address this issue, villagers have resorted to using groundwater to meet their daily needs. During the COVID-19 pandemic, people hesitated to drink government-supplied piped water due to contamination concerns, and this behavior persists. Additionally, agricultural and industrial wastewater runoff has led to pollution of canal water, while the increasing fishing economy contributes to surface water pollution in the village. Empirical data was collected through methods including Direct Intensive Observations, Focus Group Interviews, and Case Studies.

Keywords: Water, Culture, Politics, Sustainable Development

Introduction:

Water is one of the essential natural resources that is associated with several spheres of human life. Besides its physical or biological relevance, it has relevance in the socio-cultural milieu in human society everywhere. This indicates that water bodies played an important role in different cultural contexts. Water is strongly related to culture because it is the quintessence of a human's daily life and vindicates a person's way of life (Schelwald van der kley&Reijerkerk, 2009). Since,the1990s water has become a central theme for anthropological research because of its cultural interferences whichbuild perception regarding water, add value to it, and develop techniques to manage it (WHO, 2006).

Anthropologists view different forms of valuing water, its equity, and access among people in diverse contexts. They hinge mainly on two principal features such as "connectivity and materiality". Anthropologists analyze water in several dimensions such as consumption, equal distribution, economic production, politics, governance, and indigenous knowledge behind it. Except these, some anthropologists view water as a metaphorfor globalization because of its course, ductility, and deportment (Carse, 2010). Water has plural character – in one way water accomplishes human thirst and, in another way, several beliefs and values in human life related to water. In different religions, water symbolizes in different ways from the ancient times. Turner viewed symbols as the Tranter of socialization particularly on behalf of rituals. according to Geertz study of symbols is the study of religion. He said that "Religious symbols formulate a basic congruence between a particular style of life and a specific (if often implicit) metaphysic, and in so doing sustain each with the borrowed authority of the other" (Geertz, 1973). So, the man-water relationship in an anthropological context is a self-announced allied area that undergoes nature or culture dissimilation through social and ecological contexts.

The present study in a nutshelltries to answer the question: Is there a relation between water and human culture under study? The study also tries to observe and interpret the factors of human intervention behind water scarcity and pollution in the studied area.

As already stated, the present study tries to see how water plays important roles in the day-to-day life of human beings such as production, consumption, metaphysical and cleaning roles of the peoples of the village Ahira, Barasat-I. The study wascarried out among the Bengali-speaking Muslims in the studied village namely Ahira who had their significant cultural obtainments to all aspects of life.

Literature Survey: A Brief Overview

The relationship between human culture and water can be traced from the traditional past. Most of the human habitation found near the water bodies. Discovery of prehistoric tools from the river and sea sides clearly indicates the human habitation behind the water bodies. De Terra and Paterson (1939) found several Palaeolithicartifacts from the Soan valley presently in Pakistan, except this other river sites such as Luni River valley in western Rajasthan, Ravi valley of Jammu and Kashmir, Sirsariver in East Punjab, Singarauli valley in Uttar Pradesh and so on found in India and outside India. The large, civilized cities such as Babylon, Memphis, Harappa, and Mohenjo-Daro, China etc. were grown near the river sites (Oliphant,1993). The tracing of human relationship with water seen from the traditional past when man was nomadic and used water for drinking and fishing purposes (Yevjevich, 1992). This

indicates that water bodies played important role to develop cultural civilization all over the world.

Water is an integral part of man's daily life and culture. It incorporates both material and non-material part of human culture. So, water plays key role in both physical and cultural spheres of human life. Water isconsidered as a component that moves several dimensions such as human body, environment, social life, and culture (Klaver, 2012).Except the daily water usage water has several religious and meta-physical values. In religious rituals water is used in a symbolic way. This symbolic penchant of water coheres with culture and communicate to a person, a group or a community symbolically and provide culturally constructed meaning to it(Black, 2005).

In terms of domestic water consumption, women play the key role in most cultures. Women are usually actively involved in the role of cleaning and consumption and studies estimated that globally women expend 200 million hours a day to collect water. The time extent they use for water collection pushing back them from productive opportunities. So, to unroll the concealed potent this time is to be minimised. Global health and education foundation conducted research on the dessert areas of Gujrat and concluded that the major reason for girl student's dropout is the excessive time taken by the girls to collect water(Miletto, 2015; Basnet, 2010).

Globally water pollution and water crisis are the leading issues that people faced. It is reported that more than 1.2 billion people faced water scarcity and did not have access to clean water to fulfil day to day needs and sanitation worldwide. Indian ranked highest in terms of number of people not having access to clean water and sanitation. The rate of diarrhoea among the children of India is also high. Out of 315,000 children who die because of diarrhoea in a year among them 140,000 children are from India (Wheeler, 2016). Contamination of harmful pollutants exceeds from tolerable limit into water makes water bodies polluted. Human intervention plays central role to reach the pollutants into water bodies. Central pollution control board (CPCB) in the year 1995, surveyed the Indian rivers to check the water quality in which they found that the rivers are intensely affected near urban congregate. The urban sector not only puts stress on the surface water bodies but also affects the ground water level drastically (Murty& Kumar, 2011).

Historically indigenous knowledge behind water utility and preservation drags the attention of anthropologists in water related research. Singh in his study focused on the indigenous knowledge behind water management in rural areas of Bihar and Madhya Pradesh.The study revealed how caste group maintained symbolic impulse regarding water utilization and management. Concept of purity and pollution maintained by the caste groups in determining water quality and the water utility is the key highlight of the study (Singh, 2006).

The brief Background of the Present Study:

In terms of water utility, it is reported that 85% people in rural India rely on ground water to meet the daily needs (Ahamed, 2013). Now a days climate change and extinguishing of surface water bodies decrease surface water rapidly. Industrial and Agricultural runoff contaminated surface water with several harmful pollutants (Chatterjee et al, 2009). Because of unavailability of surface water due to pollution, exploration of ground water increases rapidly. District North 24 Parganas is considered the spotlight of high ground water contaminated zone during mid-2000s (Paul & Das, 2021). West Bengal, surrounded with several water bodies, has a rich cultural value of water. Water values, its utility and preservation mechanisms are shaped according to the culture of people. So, it is necessary to study how people use and preserve waterandalsohuman action behind the water pollution in rural villages of North 24 Parganas. A preliminary survey carried out in the villages of Barasat-I reveals that most of the people haven't receivedGovernment piped water supply and those who have received piped water supply,are not using the water to drink. They either use underground pump water or tube well water to meet their daily needs. Because of rapid industrialization the surface water has become unclean, and villagers are unhappy regarding the action of Government in this respect.

In this background the following ethnographic study was conducted in Ahira village, Barasat-I to determine water utility and indigenous knowledge behind water management by the villagers. It is also observed how water shape the culture of the villagers and the factors responsible for water scarcity and pollution. The role of Governmentis also highlighted in the study.

Objectives:

Theobjectives of present study are to view on:

(i) To observe the day-to-daywater utility by the villagers and its impact on water bodies of the village and

(ii) To highlight the necessary steps taken by the Government regarding water scarcity and pollution.

Methodology and Research Design:

The First-hand data was collected from residents and administrative bodies at the panchayat level in Ahira village, located in the Barasat-I block of West Bengal. The study aimed to investigate water usage and the causes of water scarcity at the village level, focusing specifically on the Bengali-Muslim community. Purposive and convenient sampling methods were employed, resulting in the selection of 40 households for the study. Empirical data was gathered through Direct Intensive Observations, Case Studies, and Focus Group Interviews.

Observations, Discussions and Interpretations:

The distribution of resources in Ahira village revealed that water served various purposes including drinking, domestic use, economic activities, religious rituals, and cleaning. The village had centralized water provision through tap water and tube wells at the household level. Additionally, groundwater was accessible, and several private water suppliers supplied bottled groundwater. The village also had a natural water reservoir, the Noai canal, which was formerly a river. There were four ponds in the village, and besides government-authorized tube wells, villagers often had personal tube wells in their yards. Some households utilized submersible pumps for groundwater extraction. While some households received government-supplied water, many did not. The increasing demand for groundwater for drinking purposes led to the rapid growth of the bottled water industry. Some villagers without sufficient water sources in their homes used pond water for cleaning purposes. However, the ponds were privately owned, and owners often restricted villagers' access to pond water.

Use and utility of water in domestic spheres:

Sources of drinking water that the villagers use are shown in Table 1. It is observed that people prefer to use groundwater to drink. Because for them ground water is purer than other water sources.

Table 1: Sources of Drinking water in the village households

Sources of water	No of households	Percentage (%)
Under Ground Pump Water	18	45.0
Tube Well	16	40.0
Ganga Piped Water Supply	3	7.5
Bottled Water Supply	3	7.5

Table 2 shows the pattern of water use in domestic spheres. It reveals increased uses of groundwater in domestic works. It is also observed that some villagers used a combination of different water sources which shows their indigenous knowledge of water resource utilization.

Table 2: Pattern of Water Source Utilization in Domestic Spheres

Sources of water	No of households	Percentage (%)
Ganga Piped Water Supply	13	32.5

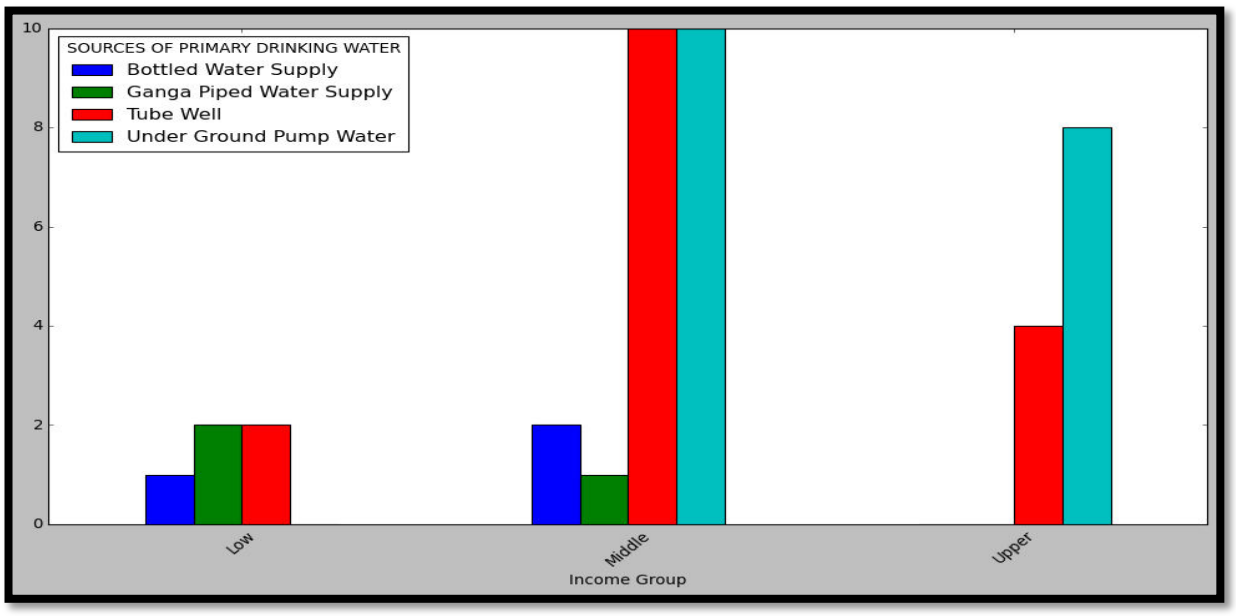
Tube Well	10	25.0
Under Ground Pump Water	10	25.0
Under Ground Pump Water and Ganga Piped Water Supply	5	12.5
Under Ground Pump water and Tube well	2	5.0

From Table 3, it is found that the utility of pond water in household work decreases day by day. There were several reasons associated with it one is the unavailability of clean water in the pondbecause of the increasing fishing economy. This household income is also associated with it.

Table 3: Pond water utility for household work

Pond water use	Household no	Percentage (%)
No	25	62.5
Yes	15	37.5

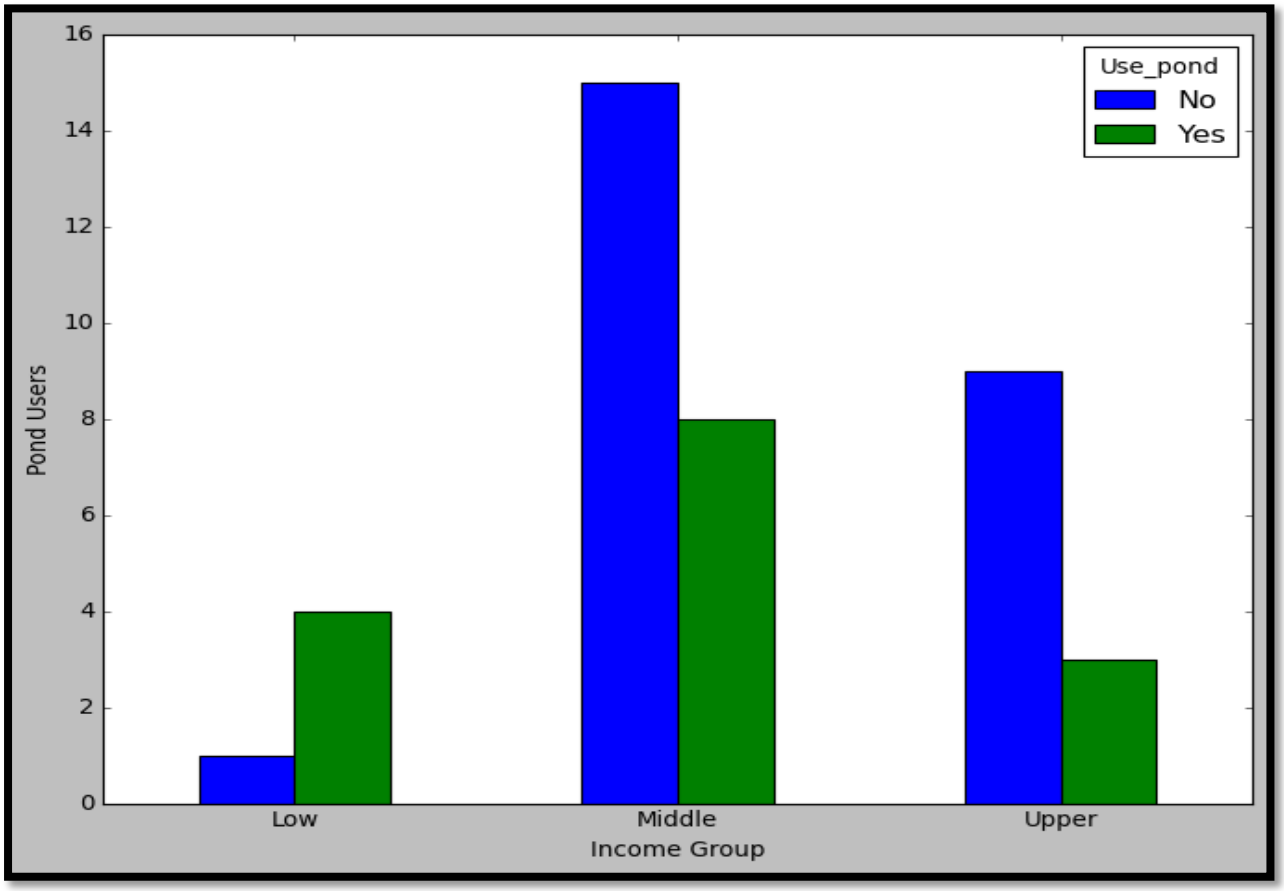
Diagram 1, shows that the people belonging to middle and upper economic groups prefer to use groundwater for drinking in comparison to lower economic groups.That is because they think that groundwater is purer than otherwater sources for that it is suitable to drink. Uses of bottled water and government-supplied piped water for drinkingare seen among low and middle-economic groups which are not visible in the upper-income group.



Diagram, 1: Income wise drinking water preference among the household level
(income< 15000 = Low, 15000 to 30000 = Middle, 31000 & above = High)

Diagram 2, shows that among the middle- and upper-income groups frequency of using pond water for household work is lower than that of not using pond water. As the income increases the pond water utility decreases among the villagers.

Diagram 2: Pond users' categorization based on income group



The impact of income is also seen in the water preservation system at the household level. Diagram 3 shows that the tank preservation system is high among middle- and high-income groups. Low-income groups did not show any tank preservation system at the household level. Whereas water preservation in metal and plastic containers seems higher in middle-incomegroups and low-income groups than in high-income groups.

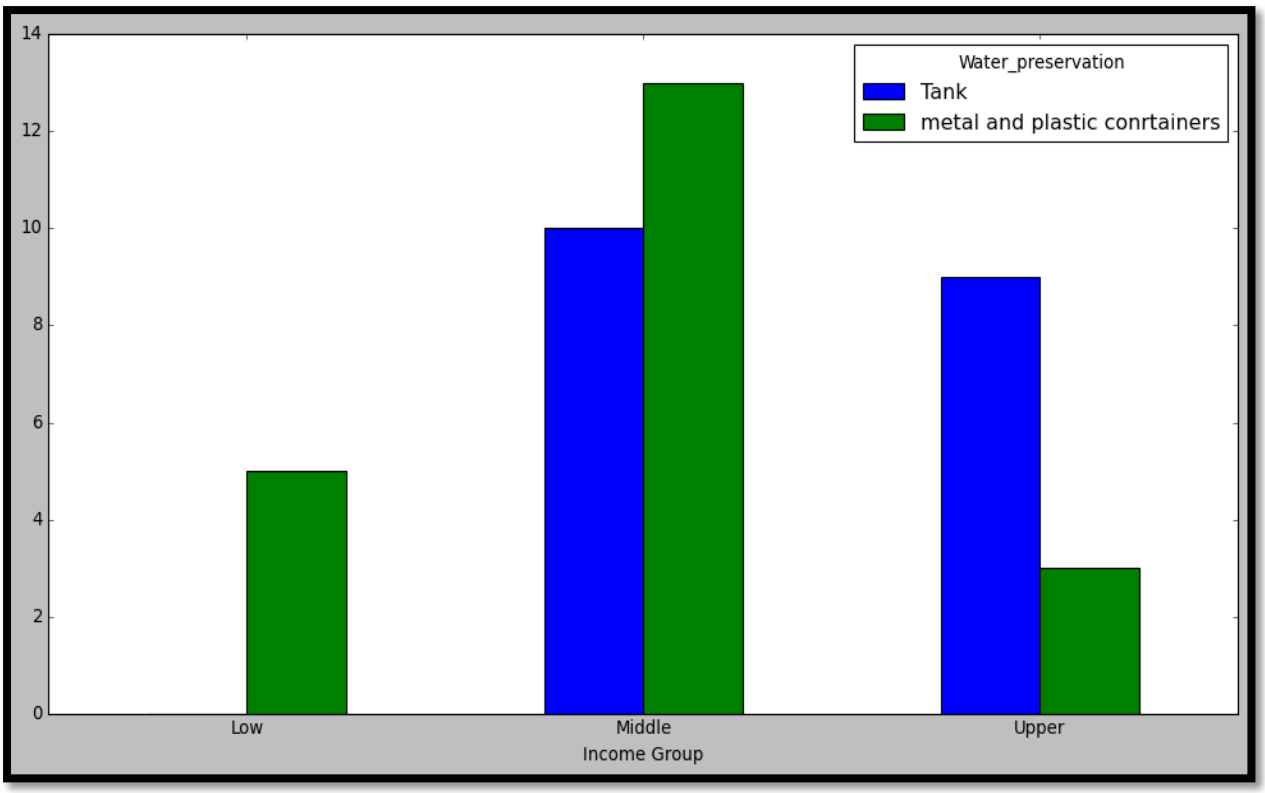


Diagram 3, Income-wise Water preservation system atthehousehold level

Table: 4; Water utility in economic spheres in the village as highlighted from Intensive Interview:

Subsistence Economy related to water	**Sources of water used**
Agriculture	In the absence of rain, people usedcanal water for irrigation. To produce vegetables, some farmers also usedPond water and Groundwater.
Fishing	Mainly Ground Water was used for fishing. In monsoon season pond water was also used.
Industrial Sector	Cloth dyeing and bleaching manufacturing industries mainly use Groundwater for production purposes.
Pastoralism	Supplied piped water and adjacent pond water were used for animal husbandry.
Local BottledWaterBusiness	Some people extracted water from the underground, filled bottles with the underground water, and sold it.

Issues related to Water Pollution:Case Studies

It is observed that a few people practiced agriculture as an occupation in the village. People who hadponds practiced fishing. Over time several people quit agriculture and the people who had pond leased it to others. Except these, there were brick-making and several other industries in the village. Lalchand Ali,(65-year, man) who resided in the village Ahira, narrated about the water scenario in the village when he was young. He said,

In my childhood, I saw the pond water clear like glass. I saw my mother bring the water from the pond and we all used it and also drank pond water. Nowadays we use supplied water, tube well water because the pond does not have any water due to the development of factories in the village. They exploit groundwater through submersible pumpswhich decreases the water level in the village.

Exploitation of excessive earth material is also considered as an important factor for water problem in the village, because of that several brick making industries were closed by the local Government. Akbar Ali (45-year, man) narrated about the land exploitation issues. He narrated that,

For making brick, mud was used along with sand. Over time because of not getting profit from agriculture and other issues, people started to quit agriculture and sell their land to the brick-making industries. Now the ponds seen in the village most of them were agricultural land once. The brick-makingindustries cut the mud for a longtime.Because of that cavity was created and the rainwater filled the cavity and people termed them vatarpukur. These are not planned ponds these are pools.

On the issue of water scarcity and land exploitation, he also narrated that,

The brick-making industries explore mud at an extreme level in the region. Because of the mass exploration, the sandy layer of the earth is visible. Sand particles cannot hold water at the surface level. So, they believe that this is a reason for surface water scarcity in the village.The government also tooktheinitiative to protect the environment and closed many brick-making industries.

Table: 5; Water related issues in the village as highlighted from Focus Group Discussion:

Water-related issues	Examples mentioned in FGDs
Quality issues of Government supplied water	• Water is not clean • Water colour is grey which is not suitable for drink • Chlorine chemical smell in water
Quantity issues of Government supplied water	• Not getting enough water • Maximum 3-4 hours in a day

	• Speed of water is too low, even to fetch the water motor pump is needed
Water-associated illness	• Typhoid • Diarrhoea • Fever • Gastro- intestinal issues • Skin problems
Economic issues	• Getting polluted water for agriculture reduces the land quality and production. • Lack of surface water increases the exploitation of ground water for fishing.
Surface water pollution	• Industrial runoff and increased fishing economy makes canal water unclean. • Exploitation of land by the brick making industriesreduces the land capacity to hold water
Issues related Government policies	• Not involving or taking concern of the local people during policy formation
Household issues	• Disturbance in family life • Domestic violence

Water Resource Management: Policies & Issues: Case Studies

Traditionally villagers used ponds as water reserves in the village. Except this in households people used tank and containers as a water reserves.The studied village is under the Ichhapur-Nilganj Gram Panchayat, Barasat Block-I. In terms of water management policies taken by Government of West Bengal Mr.NarendraNathDutta, PanchayatPradhan of Ichhapur-Nilganj Gram Panchayat narrated that,

The active water management program in the area is 'JolDhoroJolBhoro' (Preserve Water - Reserve water) launched by the State Water Investigation Directorate under the Department of Water Resources Investigation and Development. This policy is formulated to prevent massive waste of surface water and improve groundwaterlevels. The awareness-related project is spread by Panchayat members in each village. To make the project successful Government piped water supplyhourshave been reduced, so that people develop the habit of storing and use water. Except this some central government

schemes such as 'HarGharJal' (water in every household) by which we try to provide water supply in every village household.

To reduce water pollution and maintain cleanliness in thevillagePanchayat and local villagers took some initiatives such as putting plastic waste in a different specified place and food waste/kitchen waste in specified places. The villagers are aware that plastic waste and food waste should not mix. Fatima Bibi (45 years, woman) residing in the village for 25 years narrated that,

We don't throw plastic or any waste into the drain, we have a separate area, a waste pond in the village in which we all throw the plastic waste there. If we through household waste into the drain it will block the drain and we have to suffer for that. Some people throwwaste into ponds but now they have become aware of it and throwwaste in the specified areas. Besides this, we also separate plastic waste and food waste/kitchen wasteand then throwthese in specific places locally called sargada. Previously on the 18th of every month, some people used to come from the Government, and we sold plastic waste to the Government at rupees 8 per kg. but now ithas stopped.

Reducing the piped water supply hours by the Government generated water scarcity among the villagers. Especially the females who depended on the supplied water to fulfilltheir household needs suffered much.RaziaBibi (35 years, women) narrated that.

I feel extreme problemsfulfilling the daily householdneeds because of not having water at the premises.Earlier they supplied water 3 times a day, such as in the morning from 6 am-7:30 am, then from 11:30 am -1:00 pm, after that in the evening from 4:00 pm-5:00 pm. Though the speed of the water is too low using a motor I get enough water to fulfillhousehold needs. But nowadays they give water two times a day such as from 6 am-7:30 am and 4:00 pm-5:00 pm. Morning and afternoon we are doing all the water-relatedwork and they are not giving enough water at that time. My husband is working as a wage laborer and not having enough money to placeasubmersible pump at the house like others. For that, I have to store water in the morning as much as I can and carry water from nearer tube wells which is very laborious. Sometimes I have to use pond water for household work. Sometimes my daughter went with me to collect water because I have to store water for my husband also. After he is back from his work if he does not get water, he becomes angry and quarrels with me. Sometimes my husband beats me for not storing enough water for his use.

It is also observed that the majority of the villagers did not use the Government-supplied piped water to drink and fromtheCovid-19 pandemic even they were avoiding using the water for household purposes and that continues. Akbar Ali (39 years, male) narrated that,

Previously we used the Government-supplied piped water for household works though the water was not clean. But during the Covid-19 pandemic, we knew that people

threwdead bodies of COVID-19 patients into the Ganga water. At thattime,itwas also instructed by the Panchayat not to use the Government-supplied piped water. From that time on, we are not using the water.

Table 6: Issues regarding Government Supplied Piped Water

Reasons	No of Households	Percentage (%)
Not getting Supplied water	18	45.0
Unclean	14	35.0
Smell	8	20.0

Table 6, shows that 45% of the households did not get Government supplied Piped water. Other householdsthatget Government Piped water do not use it for drinking because the water is unclean and others get a chlorine smell from the water.

Concluding Observations:

From the above results, it is evident that villagers utilize water to meet their economic and social needs, highlighting the integral relationship between water, life, and culture. However, this reliance on water leads to the overuse of groundwater daily, resulting in the depletion of traditional water preservation systems such as ponds. Instead, people resort to using tanks, metal, and plastic containers for water storage. The excessive use of land and groundwater contributes to water scarcity, while economic activities lead to surface water pollution.

Access to better water utilization and preservation facilities is often skewed towards those with higher incomes. As villagers seek clean water, they increasingly turn to groundwater, reflecting a growing awareness of water quality. However, government policies related to water supply have failed due to inadequate planning and the exclusion of local villagers from policy formulation. Initiatives like 'HarGharJal' and 'JolDhoroJolBhoro' have not been effectively implemented, as evidenced by several households not receiving government-supplied piped water.

Some women in the village demonstrate water-related awareness by using pond water for their daily household tasks. To address these challenges, the government should adopt an integrated water management approach, involving locals, especially women, in policy formulation. Implementing water quantity meters can be a more effective method than evaluating water usage solely based on electric bills, while also raising awareness about the importance of water preservation for a sustainable future.

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