

# **THE WATER MANAGEMENT AND SOCIAL NETWORKING BEHAVIOR OF THE SMALL-SCALE FISHING COMMUNITIES A CASE STUDY FROM INLAND OPEN WATER AREA OF BANGLADESH**

**Md Nazmus Sadekin** 

PhD (Economics) student, School of Economics, Finance and Banking, College of Business,  
Universiti Utara Malaysia, Malaysia  
Assistant Professor, Department of Economics,  
Mawlana Bhashani Science and Technology University, Bangladesh  
[sadekin1865@gmail.com](mailto:sadekin1865@gmail.com)

**Jamal Ali**

School of Economics, Finance and Banking, College of Business,  
Universiti Utara Malaysia, Malaysia

**Rabiul Islam**

School of International Studies, College of Law, Government & International Studies,  
Universiti Utara Malaysia, Malaysia

## **Abstract**

*Fisheries are significantly contributing to a community's livelihoods and food security at local and global levels. It also provides a vital source of protein and cash income for many families in the developing world. Though, fisheries sector is supporting about 11% of the total population's livelihood of Bangladesh but fisherman is one of the most vulnerable communities in Bangladesh. Moreover, like other developing countries in Bangladesh, small-scale fisheries (SSFs) are making significant support regarding food nutrition and ensuring food security, alleviating poverty, and sustainable livelihoods of the people. However, the livelihood of SSFs especially who do fishing in the inland open water area are undervalued both in the global and national scale by the scholars. Using a survey, this study discussed the water management and the social networking behavior of SSFs of the*

*inland open water area of Bangladesh. The study found that water related problems such as consistency of daily water supply, water conflicts, unsafe drinking water etc. are very common in SSF community. On the other hand, in terms of social networking most of the SSF households rely more on borrowing and taking assistance from others. Additionally, it is also found that the households get cash money and helping assistance from outside of their community.*

*Keywords: Small Scale Fishing; Inland Open Water; Fishing Community; Water Management; Social Networking*

## **INTRODUCTION**

Fisheries are significantly contributing to a community's livelihoods and food security at local and global levels. According to Food and Agriculture Organization [FAO] (2016), both directly or indirectly fisheries sector supports more than 600 million people for their livelihoods and this number is still counting. Additionally, more than 4 billion people are getting essential nutrition from fish and of which at least 50 percent of animal protein and essential minerals are provided to 400 million people in the poorest countries (FAO, 2016). Therefore, fish provides a vital source of protein and cash income for many families in the developing world.

Moreover, in Bangladesh, for their livelihood, a major portion of the people is dependent on those natural resources which are water related (such as aquatic resources and floodplains). From the centuries the role of fisheries is very crucial both in terms of nutrition, and in terms of economy of Bangladesh. In developing countries especially in Bangladesh, small-scale fisheries (SSF) are making significant support regarding food nutrition and ensuring food security, alleviating poverty, and sustainable livelihoods of the people. However, the livelihood of SSFs are undervalued both in the global and national scale by the scholars. In many countries it is found that the SSF sector is usually located in the rural local communities with holding their local traditions and norms. Most of the SSFs catch fish for consumption within their households or communities. According to FAO (2014), in the SSF sector more than 90 percent people directly depend on capture fisheries work. Although, SSF contribute about half of the total world fish catches but if the catches are considered for human consumption, the share is increased to two-thirds of the total global catches (FAO, 2016).

Though, fisheries sector is supporting about 11% of the total population's livelihood of Bangladesh (Department of Fisheries [DoF], 2015) but fisherman is one of the most vulnerable communities in Bangladesh. They are poor by any standard and over the years economic

condition of the fishermen has further deteriorated (Baki, Islam, Hossain & Bhuiyan, 2015). Moreover, the livelihood of fishing communities has lack of their own resources. On the other hand, the gradually declining riverine fish production in recent years has added to their adversities. Furthermore, the impact of climate change on this community is much more severe than the other communities. It is because these people are deprived in terms of cash income, education and other social benefits (Baki et al., 2015).

The precise characteristics of SSFs vary depending on the location; indeed, SSFs tend to be strongly anchored in local communities, reflecting often historic links to adjacent fishery resources, traditions and values, and supporting social cohesion. Where poverty exists in SSF communities, it is of a multidimensional nature and is not only caused by low incomes but also due to factors that impede full enjoyment of human rights including civil, political, economic, social, and cultural rights. These communities are often located in remote areas and tend to have limited or disadvantaged access to markets, and may have poor access to health, education, water and other social services. Other characteristics include low levels of social networking, existence of poor water management and inadequate organizational structures. The opportunities available are limited, as SSF communities face both climatic and non-climatic threats. All these factors make it difficult for SSF people difficult to survive and make them vulnerable. Though, the SSF communities are surrounded by many threats, in this study the water management and social networking behavior of the SSF communities of inland open water area in Bangladesh are discussed.

The remainder of the study is organized as follows: in section 2 the objectives of this study is mentioned. In section 3 the methodology of this study is briefly discussed. Moreover, the findings of the study regarding water management behavior and social networking pattern of the inland open water area SSF communities of Bangladesh are discussed in section 4. Finally, section 5 concludes the study.

## **OBJECTIVES**

1. To analyze the water management behavior of the inland open water SSF communities.
2. To understand the social networking behavior of the inland open water SSF communities.

## **METHODOLOGY**

To achieve the objective of the study, primary data has been collected using a structured questionnaire from 352 SSF households from three upazilas of ChalanBeel area of Bangladesh. Chalanbeel is considered as the largest inland open water resource area of northern Part of

Bangladesh and contributing a lot for inland open water fisheries. The entire ChalanBeel area is spreading over 18 upazilas of 6 districts (Bogra, Natore, Naogaon, Pabna, Rajshahi, Sirajgonj) of Bangladesh. For this study, 3 districts (Natore, Pabna and Sirajgonj) are randomly selected and after that one upazila from each district is randomly selected for this study. The upazilas are Chatmohor, Gurudaspur, and Tarash from Pabna, Natore and Sirajgonj districts respectively.

This study has used UN (2005) prescribed formula to calculate the sample size for conducting a primary research which is especially designed for household survey. Using this formula, the sample size for Chatmohor upazila is 115, for Gurudaspur upazila is 121 and for Tarash upazila is 116. Based on random sampling, all 352 SSF households were randomly selected and the household heads of the selected households were interviewed. After collecting data, it has been checked and verified to make sure that answer to each item had been properly recorded. Collected data have been tabulated and analyzed using descriptive statistics. Figures and diagrams are used to represent the findings of the present study.

## **ANALYSIS AND FINDINGS**

### **Water Management Behavior of the SSF community**

In the total study area, 81.25% households (286 households) reported that they collect water from their own tube well, whereas, 14.5% households (51 households) reported that they collect water from natural sources like the river, lake or pond. Though, 84.7% households (298 households) said that the water is available everyday but 8.8% households (31 households) reported that they store water for drinking. Additionally, 79 households reported that their water source is been changed for the last 5 years. Among them 60 household said that the new source is far from the older one and 19 household said it is nearer than the older source (Figure 1).

Moreover, in Tarash, 18% (21 households) of households reported that they are using a natural water source comparing to 9.6% in Chatmohor (11 households) and 15.7% in Gurudaspur (19 households) for their daily usage. Moreover, 12.93% households in Tarash (15 households) store water and 18.26% households in Chatmohor (21 households) reported that they do not have consistent water supply. The average distance from the water source is 0.97 minute of which for Chatmohor and Tarash it is more than 1 minute and for Gurudaspur it is 0.65 minute. Furthermore, 26.72% of Tarash households (31 households) reported hearing about conflicts over water in their communities compared to 11.52% of Gurudaspur (10 households) and 8.7% of Chatmohor households (14 households) respectively. Finally, 37.07% households of Tarash (43 households) reported that they have changed their water source for the last 5 years compare to 14.78% in Chatmohor (17 households) and 15.7% in Gurudaspur (19 households) respectively.

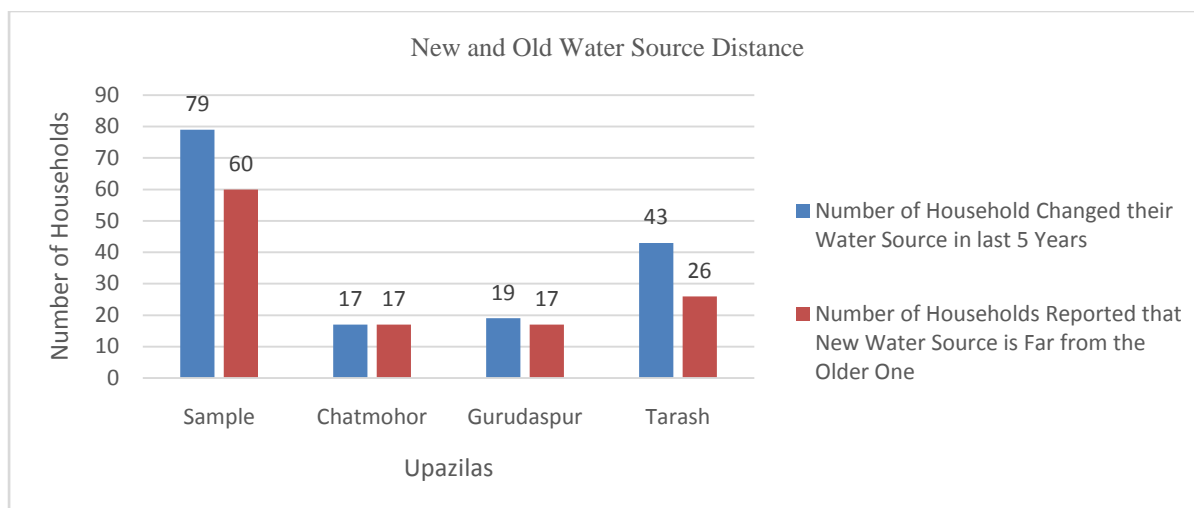


Figure 1: New and Old Water Source Distance in the Study Area

Furthermore, 89.2% household (314 households) said that they drink safe water whereas, 7.7% household (27 households) said their drinking water is not safe. In Tarash 10.34% household reported (12 households) that they don't drink safe water which is higher in terms of percentage than the other two study areas (Chatmohor 6.1% and Gurudaspur 6.6%). Furthermore, in the whole study area 3.1% household (11 households) are unsure about their drinking water whether it is safe or not safe. In Chatmohor this value is even higher which is 5.2% (6 households). In figure 2 the drinking water status of the study area is shown.

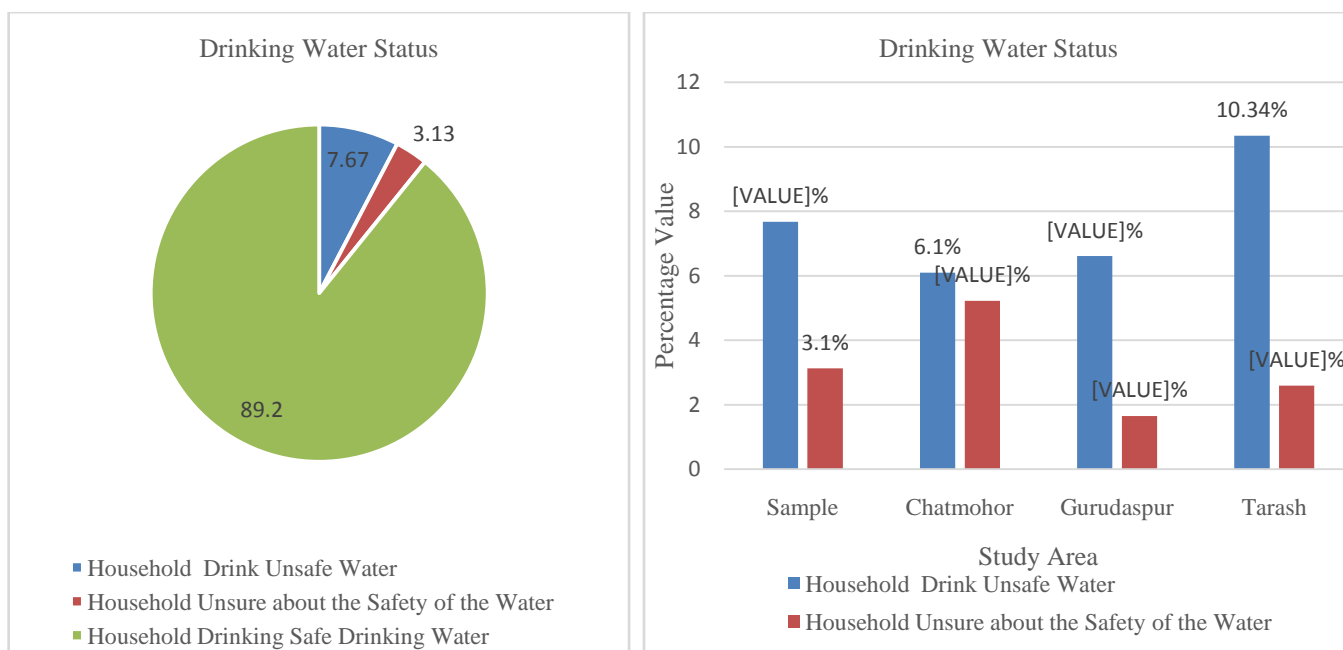


Figure 2: Drinking Water Status of the Study Area

### **Social Networking Behavior**

In terms of social networking, 37% households (130 households) reported that they have borrowed money from either relatives or friend in the past month. However, in terms lending money, surprisingly only 15% households (53 households) reported that they have lend money to the relatives and friends in the past month. On the other hand, 22.44% households (79 households) said they got help from their friends and relatives. Moreover, only 4.26% households (15 households) reported they have helped their friends and relatives in the past month. However, these indicate most of the households get cash money and helping assistance from outside of their community. Moreover, 243 households have gone to their community leader/local leader/NGOs/local government for various kinds of help which supports our findings. Additionally, in Chatmohor 80% households (92 households) reported that they had approached their local government/NGOs/social or community leaders for assistance in the past 12 months. However, for Gurudaspur and Tarash these percentage is 69.42% (84 households) and 57.76% (67 households).

### **CONCLUSION**

It is found that water related conflicts are very frequent in the study areas. Additionally, problems like change in water source, lack of consistent water supply, unsafe drinking water are very alarming in the study areas. Our recommendation to the related authorities is to ensure consistent water supply and provide safe drinking water to the SSF communities. If this is possible then SSF family will be relieved from many waterborne diseases. On the other hand, in terms of social networking the SSF communities are heavily rely on those households who are outside of their community. It is necessary to train them to build up their own funds and involve themselves to different income generating activities (IGAs) through the local authorities and NGOs. However, there are few limitations of this study. In this study only the SSF household heads were interviewed and due to lack of female headed households (only 27 female headed households) gender based analysis is not done. Moreover, due to lack of budget and time in this study, only the SSF households are selected. However, there is a scope to do research on fishing community vs. non-fishing communities in this area also.

### **REFERENCES**

Baki, M. A., Islam, R., Hossain, M., & Bhuiyan, N. A. (2015). Livelihood Status and Assessment of Fishing Community in Adjacent Area of Turag-Buriganga River, Dhaka, Bangladesh. *International Journal of Pure and Applied Zoology*, 3(4), 347–353.

Department of fisheries (DoF), Annual Report, Department of Fisheries, Government of People's Republic of Bangladesh, Dhaka, Bangladesh, 2015.

Food and Agriculture Organization (2014). The state of world fisheries and aquaculture 2016. Rome: Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations.

Food and Agriculture Organization (2016). The state of world fisheries and aquaculture 2016. Rome: Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations.

UN (2005). Designing household survey samples: Practical guidelines. Studies in Methods. New York: Department of Economic and Social Affairs, Statistics Division, United Nations.