

# The Livelihood Strategies and Food Management of the Small-Scale Fishing Communities: A Case Study from Inland Open Water Area of Bangladesh

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## Abstract

Fisheries sectors are contributing significantly to a community from their livelihoods and food security perspective. 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. However, the livelihood of Small Scale Fishers (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 primary data survey on 352 SSF households, this study discussed the livelihood strategies and the food management behavior of SSFs of the inland open water area of Bangladesh. This study found that SSFs do fishing on average for 7.4 months in a year, and rest of the months they are involved in other income generating activities. Moreover, 61.93% stated that they have conflicts over fish catching. Besides fishing, 88.54% SSFs do agriculture labor as their part time income generating activities. On the other hand, most of the households (71.6%) grow their primary food from their family firm, but 41.2% households struggle for their food on average 2.7 months in a year. Furthermore, 44.6% households reported that their daily food items are decreasing over the years. Additionally, 89.95% households reported that more than 50 percent of their annual income come from fishing.

**Keywords:** Small Scale Fishing, Inland Open Water, Fishing Community, Livelihood Strategy, Food Management

## 1. Introduction

Fisheries sectors are contributing significantly to a community from their livelihoods and food security perspective. Moreover, fisheries sector is supporting more than 600 million people for their livelihoods and this number is still counting (FAO, 2016). 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, from the centuries the role of fisheries is very crucial in terms of nutrition, and economy of the country. Furthermore, small-scale fisheries (SSF) are making significant support regarding food nutrition, food security, alleviating poverty, and sustainable livelihoods of the people of Bangladesh. However, the livelihood of SSFs are undervalued both in the global and national scale by many 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.

Nevertheless, fisheries sector is supporting about 11% of the total population's livelihood of Bangladesh (Department of Fisheries, 2015) but fisherman is one of the most vulnerable communities in the country. They are not only poor by any standard but also over the years their economic conditions are deteriorating (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.

The SSF communities are often located in remote areas and tend to have limited access to markets, and have poor access to health, education, water and other social services. A study from Sadekin, Ali, and Islam (2018) found that the SSF community has low levels of social networking, and poor water management behavior. Moreover, this study also found that, the SSF households rely more on borrowing and taking assistance from others which are mostly from outside of their community. On the other hand, the opportunities available are limited to SSF communities. All these factors make SSF people difficult to survive and make them vulnerable to different climatic and non-climatic threats. Though, the SSF communities are surrounded by many threats, in this study the livelihood strategies and food management 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 are mentioned. In section 3 the methodology of this study is briefly discussed. Moreover, the findings of the study regarding livelihood strategies and food management behavior of the inland open water area SSF communities of Bangladesh are discussed in section 4. Finally, section 5 concludes the study.

## 2. Objectives

The precise objectives of this study are mentioned as follows:

- i. To analyze the livelihood strategies of the inland open water SSF communities.
- ii. To understand the food management behavior of the inland open water SSF communities.

## 3. Methodology

In this study, primary data has been collected using a structured questionnaire from 352 SSF households from three upazilas of Chalan Beel area of Bangladesh. Chalan beel 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 Chalan Beel area is spreading over 18 upazilas of Bangladesh. For this study, three upazilas are randomly selected which are Chatmohor, Gurudaspur, and Tarash. 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 are randomly selected and the household heads of the selected households were interviewed. After collecting data, it has been checked and verified. Finally, to fulfill the study objectives, collected data have been tabulated and analyzed using descriptive statistics.

## 4. Results and Findings

In this section the livelihood strategies and the food management behavior of the SSF community of inland open water area in Bangladesh are discussed.

### 4.1 Livelihood Strategies of the Inland Open Water SSF Community

As along with this study found that 208 households (59.1%) catch fish around 6 to 8 months. However, the average fish catching month is 7.4, whereas, for Chatmohor and Gurudaspur it is higher which are 7.6 months and 7.7 months respectively. For Tarash, the average fish catching month is relatively lower which is 6.9 months. Additionally, no households have reported that they have changed their fish catching spots due to any reason. From year after years they have been catching fish in the same areas. Moreover, A higher percentage (32.18%) of Chatmohor households (37 households) reported relying solely on fishing for income than 27.17% in Gurudashpur (33 households) and 19.83% in Tarash (23 households). Additionally, in Tarash the average month of fishing is less than 7 months comparing to other two upazilas of which the average fishing month is more than 7.5 months.

In addition, 347 household heads have reported that other than fishing, they do other part time income generating activities (IGA). For instance, 309 (88.54%) household heads said, they do as agriculture labor and 21(6.02%) household heads reported that they do general labor (See Figure 1). The remaining household heads do other works such as Mason (8 households), Carpenter (5 households), Private Sector worker (3 household) and Trading (3 Households).

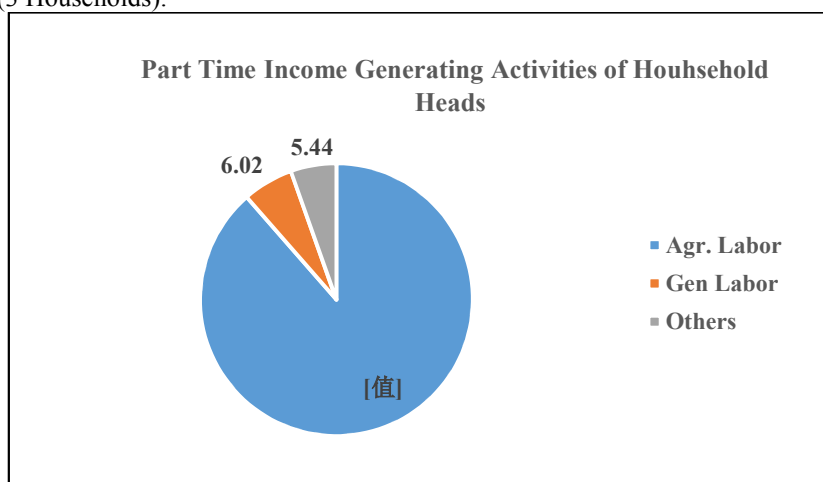


Figure 1: Part time income generating activities of household Heads for the whole study area. Source: Field Survey (2017/18).

Furthermore, 292 households (82.95%) reported that more than 50 percent of their annual income comes from fishing activities of whom 86 households (24.43%) reported that they get more than 75 percent of their annual income from fishing activities (See Table 1).

Table 1: Percentage of SSFs' Yearly Income from Fishing Activities\*\*\*

| Yearly Income from Fishing Activities (%) | Chatmohor | Gurudaspur | Tarash | Total        |
|---|-----------|------------|--------|--------------|
| Below 25%                                 | 8         | 4          | -      | 12 (3.41%)   |
| 25% - below 50%                           | 20        | 11         | 17     | 48(13.64%)   |
| 50%- below 75%                            | 50        | 69         | 87     | 206 (58.52%) |
| More than 75%                             | 37        | 37         | 12     | 86 (24.43%)  |
| Total                                     | 115       | 121        | 116    | 352 (100%)   |

<sup>b</sup>Fisher's Exact Test \*p<0.10 \*\*p<0.05 \*\*\*p<0.01 Source: Field Survey (2017/18)

#### 4.2 Food management

In terms of food management, 71.6% households (252 households) reported that they grow their primary foods such as rice, wheat, vegetables etc. in family farm, and remaining 28.4% households reported that they get their primary foods from buying in the shop. Moreover, 58.8% households (207 households) reported that they have food for the whole year. Furthermore, the households struggle for food on average for 2.7 months. Additionally, 44.6% households (157 households) reported that their daily food item is decreasing, 39.2% reported (138 households) that it is unchanged and remaining 16.2% reported that their daily food item is increasing. On the other hand, overall 175 households (49.72%) reported that their fish catching is decreasing due to the impact of climate change.

Similarly, overall 218 households (61.93%) reported that they have conflicts over fish catching of which 69.6% from Chatmohor (80 households), 66.4% from Tarash (77 households) and 50.4% are from Gurudaspur (61 households). In addition, Chatmohor households reported struggling to find adequate food for their families 2.76 months per year on average compared to 2.75 months in Tarash and 2.39 months in Gurudaspur. Moreover, 46.09% households in Chatmohor (53 households) reported that they do not get primary foods from their farm comparing to 20.66% in Gurudaspur (25 households) and 18.97% in Tarash (22 households).

#### 5. Conclusion

It is found that the SSFs do fishing on average 7.4 months in a year and most of the SSF households struggle for their daily food on average 2.7 months which depicts the severity of poverty in the SSF community. On the other hand, their daily food items are also decreasing over the years. Though, they are involved in different IGA other than fishing, a significant portion of the households are still solely depending on fishing. Moreover, the IGA activities are also very limited. Our recommendation to the related authorities, to train them to build up their own funds and involve themselves to different IGAs from which they can earn more. On the other hand, it also necessary to monitor their food dieting and nutrition intake especially for the women and infants. 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, gender-based analysis is not done. Moreover, there is a scope to do research on comparative analysis between fishing communities and non-fishing communities of this area.

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