Socio-economic profile of fishermen: An empirical study from Sunamganj, Bangladesh

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ABSTRACT

Over the years social aspects of fishermen have been overlooked despite playing a significant role in nutrition, foods security and economic sector of the country. Therefore, the present study aimed to assess the current socio-economic conditions of fishers from Sunamganj district of Bangladesh. Data were collected from two Upazila of Sunamganj through individual and key informant interviews, and focus group discussions. Results of this study revealed a dire socio-economic status of the fisher's community. Nearly half of the respondents were landless, and lived in government and privately-owned land. The illiteracy among interviewed fishermen was 71.6%. Moreover, around 80% of fisherfolk cannot earn more than BDT 10,000 (USD 117) per month. Only 37% fishers have had secondary income sources. In addition, morbidity data revealed higher rate of illness of children than that of their parents, most of them receive medical attentions from quack. Majority of them also do not have the access to formal credit system (e.g. bank), they borrowed money from informal sources. Wide-ranging initiatives from both government and non-government organizations need to be taken to improve the well-being of fishers of Sunamganj which will ultimately help in ensuring sustainable use and management of fisheries resources of adjacent areas.

INTRODUCTION

Bangladesh is endowed with a vast expanse of fisheries resources with 4.7 million ha of inland waters characterized by rivers, canals, ponds, natural and man-made lakes, freshwater marshes, estuaries, brackish water impoundments and floodplains (FRSS, 2018). Bangladesh becomes self-dependent in fisheries sector with 4.13 million metric ton (MT) fish production in 2016-17 FY (DoF, 2018). Besides, it has become the 3rd largest capture fishery producer from inland open waters with 1.22 million MT production in 2018 (FAO, 2020). Around1.36 million fishermen are fully dependent on fisheries sector for their livelihood. Among them 800,000 are engaged in inland fisheries sector and 516,000 in marine sector

(DoF, 2018).In spite of playing a key role in the food security, nutrition and economy of the country, fishers' communities have received little attention from the government and policy sector (Islam et al.,2011). Moreover, it has been reported fishers are one of the most vulnerable communities as they suffered from poor living standard, mass illiteracy, lack of proper health facility, debt and loan, low income, lack of capitals, inadequate alternative job opportunities etc. (Mozahid et al., 2018; Islam et al., 2013; Kabir et al., 2012; Islam et al., 2018).

North-Eastern region of Bangladesh is renowned for having several ecologically important wetlands locally known as *Haor* (large deeply-flooded depressions) namely Tanguar *Haor,* Dekhar *Haor,*

Sonir *Haor* etc. which cover most of the Sunamganj district (Sunny et al., 2020). These wetlands act as spawning, nursery, feeding ground for scores of aquatic fauna especially fish. In addition, a large number of fishermen earn their livelihood by harvesting fish from those wetlands. Nonetheless, lack of sufficient and bona fide information on current socio-economic conditions of fishing communities is one of the serious impediments in proper planning and development of various fisheries management programs (Saxena et al., 2014; Devi et al., 2012 & 2016). Though, a few studies have been reported the socio-economic aspects of fishers from Sunamganj (Mozahid et al., 2018; Trina et al., 2015) but there are some gaps in the information. Hence, the present study aimed to collect updated information on the socio-economic status of fishermen of the Sunamganj District of Bangladesh in order to implement an efficient management program for the improvement of fishing community's overall livelihood.

MATERIALS AND METHODS

The present study was conducted in Sunamganj district of Bangladesh over a period of four months from March to June 2019. Data were accumulated from Tahirpur and Chhatak Upazila of Sunamganj. Fishermen of Tahirpur catch fishes from Tanguar *Haor* while fishermen of Chhatakfishing in Dekar *Haor* and The Surma River. Following the administration of a semi-structured questionnaire, 120 individuals were selected for the analysis of socio-economic condition who engaged in fishing all the year round. The questionnaire was pretested in the field and revised accordingly. The questionnaires were aimed at collecting information on the respondent's demographic characteristics, occupation and income, household condition, water supply and sanitation, credit facilities etc. A total of 10 focus group discussions were conducted consisting of 7 to 12 persons each. In addition, 12 key informants were interviewed such as local government officials, fish traders, teachers and local leaders. Key informants were likely to answer questions by virtue of their understanding and experience. Analysis of collected data were done by Microsoft Excel 2013 and Statistical Package for Social Science (SPSS, Version 23).

RESULTS AND DISCUSSION

Household demography

Age

Knowledge on the age structure of fishermen is very important in estimating the productive potential of human resources. The surveyed respondents were mainly from age group of below 30 years (55%) followed by 31–40 years (28.3%), 41-50 years (13.3%) and more than 50 years (3.3%) (Table 1). Similar study observed highest percentage of the fishers (31.9%) of Meghna River basin (Islam et al., 2018) and 38.5% of Sonir *Haor,* Sunamganj (Rahman et al., 2018) were at age of below 30 years which is consistent with the findings of present study. However, Kabir et al. (2012) reported that 50% fishermen of old Brahmaputra River belong to the age group of 31-40 years.

Table 1: Demographic status of studied fishermen (n = 120) of Sunamganj district

	Frequency	Percentage
Age		
below 30 years	66	55
31 – 40 years	34	28.3
41 – 50 years	16	13.3
above 50 years	4	3.3
Educational status		
Illiterate	86	71.7
Primary level	28	23.3
Secondary level	6	5
Religion		
Muslim	82	68.3
Hindu	38	31.7

Education

More than two third (71.6%) fishermen were found illiterate, where only 23.3% completed their elementary education and 5% accomplished their secondary education (Table 1). However, the national average rate of illiteracy is 35.3% (BBS 2013). Minaret al. (2012) reported that 80% riverine fishermen were illiterate, 12% of them can sign only and 8% had only primary level of education in Barisal town. Likewise, Trina et al. (2015) and Rahman et al.(2018) found 64% fishermen of Dekhar Haor and 49% of Sonir *Haor*

of Sunamganj were illiterate respectively. In the same way, Bhuyan and Islam (2016) reported that the most of the fishermen (71%) were illiterate of Meghna River adjacent to Narsingdi district of Bangladesh. Similar illiteracy rate of fisherman (63%) by Sheikh and Goswami (2013) and (72.1%) by Kalita et al. (2015) were also reported for fishing community in Assam. High illiteracy rate suggested that fishers had limited access to education and children were engaged in work to support their parents.

Religion

In the present study, 68.3%offishers belonging Islam and around 32% were Hindu (Table 1). Patwary (2014) observed Muslims constituted 86% of the Hilsha fishers' community and rest 14% were Hindu in Haimchar, Chandpur. In addition, Hossain et al. (2015) observed that 90% Muslim fishermen of Punorvaba River, Dinajpur and only 10% are Hindus. Whilst, Abdullah-Bin-Farid et al. (2013) found all the fishermen of Baluhar *Baor*, Jhenaidah were Hindu. There is a common belief in Bangladesh that by-born fishermen or fishing community are belonging to the Hindus religion. Faruque and Ahsan (2014) reported that the involvement of Muslims in fishing activities may be understood on the ground of changing socio-economic structure, lack of employment opportunity and realization of the potential as a source of income. However, results of the current study suggested Muslim people are now engaged in fishing and similar observation were also reported by a number study (Bappa et al., 2014; Trina et al., 2015; Hassan and Mahmud, 2002).

Occupation and Income

Occupation

In the study area, prime occupation of the respondents was observed fishing. Primary occupation could not afford the full-time employment for some fishermen and the income derived from fishing therefore might be insufficient to supply adequate means of living. Hence, along with the fishing occupation 37% respondents said that they have secondary occupations (Table 2),among which, majority of

them are involved in day laboring (68.1%) and skilled or unskilled laboring (54.4%). Besides, 32% respondent said that they are involved in agriculture farming, 22.7% have businesses, while only 18% pull rickshaw/van/cart (Table 2). Kostori et al. (2012) stated that fishermen of Chalan *beel* were engaged in subsidiary occupation simultaneously during off-period of fishing. They reported 72% fishermen put their labor in agricultural sector as their second occupation. While others were engaged in fish trading, van/rickshaw/cart pulling and day laboring. Similarly, Patwary (2014) reported 64% Hilsa fishermen from Haimchar of Chandpur district made agricultural farming as their alternative income generating activity.

Table 2: Occupation and income profile of fishing communities of Sunamganj

	Frequency	Percentage
Do you have any occupation other than fishing? (n = 120)		
Yes	44	36.7
No	76	63.3
Secondary occupations (Multiple answers; n = 44)		
Rickshaw/van/cart puller	08	18.2
Business	10	22.7
Skilled/unskilled day labor	24	54.5
Agriculture day labor	30	68.2
Agriculture farming	14	31.8
Number of working days per month (n = 120)		
≤15 days	22	18.3
16-20 days	30	25.0
21-25 days	50	41.7
26-30 days	18	15.0
Reasons for not working (Multiple answers; n = 120)		
Work everyday	14	11.7
Bad weather	10	8.3
Don't get fish	18	15.0
Visit friends/relatives	20	16.7
Don't work everyday	28	23.3
Sick	26	21.7
Couldn't find work	26	21.7
Income per month		
BDT <5000 (USD 58.8)	28	23.3

BDT 5,001 – 10,000 (USD 58.8 – 117.6)	68	56.7
BDT 10,001 – 20,000 (USD 117.6 – 235.2)	18	15.0
BDT >20,000 BDT (USD 235.2)	06	5.0

BDT: Bangladeshi Taka; USD: United States Dollar; USD 1 = BDT 85

Number of working days

Fishers of the study area were asked how many days they work in every month. Among 60 fishers, 42% said that they work for 21 to 25 days per month, and about one-fourth remain engaged in work for 16-20 days. While, around 18% respondents work not more than 15 days in a month and only 15% of fishers said that they work whole of the month (Table 2). Islam et al. (2018) recorded 26–30 working days among 37% fishers of Meghna River basin. In addition, 26.2% work for16–20 days,19.8% work less than 15 days and only 16.9% work for 21–25 days per month in that area.

Reasons for not working

The fishers also mentioned multiple reasons for what they do not work (Table 2). The common reasons stated by fishermen are unwillingness to work every day (23.3%), sickness (21.7%) and unavailability of work (21.7%). Additionally, fishers also mentioned bad weather (8.3%) and decline of fish catch (15%) as reasons for unemployment, which is in line with Raman et al. 2018, stated that natural calamity and lack of employment is the reasons for not working in *Haor* region.

Income

More than half (56.7%) of the fishermen's monthly income was found Tk 5,001 to Tk 10,000, and about one-quarter (23.3%) earn less than Tk 5,000 in a month. Only 5% mentioned that their monthly remuneration is more than Tk 20,000. On the other hand, 15% responded that their earning is in between ten to twenty thousand taka per month (Table 2). Whereas, the national average income per household per month is BDT 11,479 (USD 144) (BBS, 2013). Patwary (2014) recorded monthly income Tk 6,000–10,000 (44%), less than Tk 5,000 (22%), Tk 11,000–20,000 (10%) and more than Tk 30,000 (6%) of Hilsha fishers of Haimchar, Chandpur. Similarly, Islam et al. (2018) described the monthly income of fishers' community of Meghna River basin where the observed majority of the households (53.2%) monthly income was between BDT 5000–10,000. Another study in Chandakhola wetland, Assam revealed that the monthly income of fishermen was low (<USD 40) for 35% of the respondents followed by USD 40 - 60 (20% respondents) and USD 60 – 80 (30% respondents) (Sheikh and Goswami, 2013).

Health and healthcare facilities

Morbidity

Morbidity means the incidence of disease or rate of illness. The morbidity condition of fishers is an important parameter to determine their health status. Studied fishers were asked whether they, their wives and children suffered from any illness in the past 15 days or not. Data revealed that child has higher rate of illness than their parents do.

Table 3: Morbidity status of fishers of Sunamganj (Multiple answers; n=120)

Illness	Percent (Frequency)		
	Father	Mother	Child
Fever	18.3 (22)	25 (30)	40 (48)
Runny Nose/Cough	11.7 (14)	20 (24)	48.3 (58)
Breathing Difficulty	3.3 (4)	8.3 (10)	16.7 (20)
Diarrhoea	1.7 (2)	5 (6)	15 (18)
Skin Disease	3.3 (4)	8.3 (10)	10 (12)
Arthritis	10 (12)	6.7 (8)	-
Others	8.3 (10)	13.3 (16)	5 (6)
No Illness	56.7 (68)	46.7 (56)	30 (36)

Fishers told that fever and runny nose (cold or snivel) are the most frequently occurred illness in their family. Children also suffered from breathing problem (16.7%), diarrhoea (15%) and skin disease (10%). Ten percent father had arthritis while in case of mother it was only 7%. Occurrence of no illness was highest in father (56.7%) followed by mother (46.7%) and child (30%) (Table 3). Ferdous et al. (2015) shown that the children in fishermen community of Sylhet district were stunted, underweight and severe thinness because of low consumption of nutritious foods. Childs suffered from more than other member of family which is parallel to the findings of this study.

Healthcare facility

Health status is the reflection of the livelihood status of a community. Fishermen of Sunamganj district receive medical services from various sources (Figure 2). Most of the fishers (71.7%) get their medical services from local pharmacy, which had no medical specialists/doctors. Nearly 44% respondents cited that they get treatment from NGOs provided health facility. Beside this, 30% fishers receive health services from Government health service providers. Around one-fourth fisher folk receive medical attention from private health sector when they suffer from serious diseases. In addition, they also seek treatment from homeopath (21.7%) and traditional healer (18.3%).
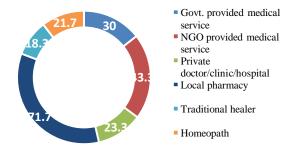

Figure 2: Healthcare facility of fishermen (multiple answers; n = 120)

Likewise, Patwary (2014) found that 12% fishermen went to village kabiraj (traditional healer), 40% to village doctors (local pharmacy), 38% fishermen got health service from Upazila

health complex (Govt.) and remaining 10% from professional doctors. In addition, Bappaet al. (2014) found 64% fishermen of Marjat *baor*, Jhenidah received treatment from the quacks (local pharmacy) and only 16% visited trained doctors for their treatment.

Household socio-economic status

Household ownership

Over half of the respondents live in their own house and5% live in rented house. Nearly one out of four fishermen lives in privately-owned land. Also, some fishers (18%) live in government owned lands (Figure 3).
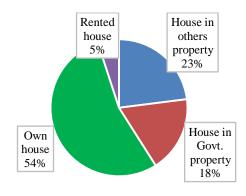

Figure 3: Household ownership status of fishers of Sunamganj (n = 120)

Household building materials

Majority of the fishermen of Sunamganj live in the houses made of tin (58.3%) followed by straw component (26.7%), semi-concrete (11.7%) and concrete buildings (3.3%) (Figure 4). As per the national survey, 90.8% of roof and 48% of the walls of the rural households are made of corrugated tin. Similar study by Mia et al. (2015) stated that 75% fishers of Meghna River lived in *kacha* house where 7.5% lived in semi-concrete buildings. As well, Islam et al. (2018) observed 92.6% of the roof and 94.7% of the walls of fishermen of Meghna River basin are made of tin.
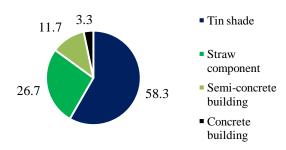
Figure 4: Household building materials of fishermen of Sunamganj (n = 120)

Household assets

Most common assets owned by fishers are bed stead/khat (68.3%), showcase/almirah (58.3%) and chair/table (46.7%). Unfortunately, it was found that more than 60% fishermen don't have electricity and a few of them have fan (13.3%) and Radio/TV (8.3%). Nevertheless, more than half (56.7%) fishers use mobile phones for communication. Most of the fishermen cited they own boat (53.3%) and fishing net (65%). In contrast, only two respondents mentioned that they have rickshaw or van (Table 4). Kostori et al. (2012) observed that 52% fishermen of Brahmanbaria enjoy the electrification facility. They also found 36% fishers that use radio/ TV for their recreation and also for getting informed about national issues. They also reported 80% fishermen use mobile phones to communicate each other. Hossain et al. (2015) observed majority (56%) of fishermen worked in the other boat in Chandpur, 30% fishermen possesses boat and fishing net, 14% fishermen have joint ownership of boat and fishing boat.

Table 4: Status of household assets of fishers' community of Sunamganj (Multiple answers; n = 120).

Serial	Name of Assets	Percent (Frequency)
1	Electricity	38.3 (46)
2	Radio/TV	8.3 (10)
3	Mobile phone	56.7 (68)
4	Fan	13.3 (16)
5	Bed stead/*Khat*	68.3 (82)
6	Showcase/*Almirah*	58.3 (70)
7	Chair/Table	46.7 (56)
8	Watch/Clock	33.3 (40)
9	Boat (Country/Motor)	53.3 (64)
10	Fishing net/gear	65 (78)
11	Rickshaw/Van	3.3 (4)

Credit facility

The present study found that nearly 92% of the fishermen take loans from various sources. Most of them borrowed money from Mahajan (83.6%) followed by NGOs (27.3%) and *Majhi* (18.2%). Around 78% respondents do not have to keep mortgage for taking loan, while 11% fishers have been physically harassed for not paying the money in due time (Table 5). Mazumder (2014) reported 88% of fishermen of Singra Upazila, Natore borrowed money from NGOs, 8% from relatives and 4% fishers did not borrow any money. Kabir et al. (2012) found around 60% fishermen of Old Brahmaputra river borrowed money from different sources such as NGOs (22%), relatives (14%), neighbors (18%) and co-operatives (6%).

Table 5: Availability of credit facility for fishers of Sunamganj

Questions		Percent (frequency)
Do you have to borrow money for fishing? (n = 120)	Yes	91.7 (110)
	No	8.3 (10)
Money borrowed from whom? (Multiple answers; n = 110)	Mahajan	83.6 (92)
	NGOs	27.3 (30)
	Majhi	18.2 (20)
Do you have to keep mortgage to borrow money? (n = 110)	Yes	21.8 (24)
	No	78.2 (86)
Is there any physical harassment if you cannot pay them back? (n = 110)	Yes	10.9 (12)
	No	89.1 (98)

Table 6: Water supply status of studied fishermen of Sunamganj (n = 120)

Question		Percent (frequency)
Do you use same water for drinking and domestic use?	Yes	25.0 (30)
	No	75.0 (90)
Source of drinking water	Tube well water	96.7 (116)
	Surface water (Pond/River/Canal)	3.3 (4)
Source of domestic use water (multiple answers)	Tube well water	30.0 (36)
	Rain water	6.7 (8)
	Surface water (Pond/River/Canal)	80.0 (96)
Arsenic in drinking water	Yes	6.7 (8)
	No	63.3 (76)
	Do not know	30.0 (36)

Table 7: Household sanitation condition of fishers of Sunamganj (n = 120)

Kind of toilet facility	Percent (frequency)
Ring slab	33.3 (40)
Pit latrine	46.7 (56)
Hanging latrine	5.0 (06)
No toilet facility	15.0 (18)
Location of toilet facility	
Attached to dwelling	10.0 (12)
Inside yard	35.0 (42)
Outside yard	55.0 (66)
Shared or public toilet	
Not shared	36.7 (44)
Shared	53.3 (64)
Public	10.0 (12)
Shoes worn in toilet	
Yes	18.3 (22)
No	81.7 (98)

Water supply and sanitation

Household water supply

Only one-fourth of the fishermen of the study area use same water for drinking and domestic use. Almost all the fishers (96.7%) collect drinking water from tube well. Most of the respondent fishermen use surface water (80%) for domestic use while some use tub well water (30%) and rain

water (6.7%) (Table 6). The study showed that, 100% of Hilsa fishermen households of Charghat Upazila (Faruque and Ahsan, 2014) and fishermen of Haimchar, Chandpur (Patwary, 2014) used tube-wells water for drinking purposes either from their own tube-well or neighbors which is almost paralleled to the results of the present study.

Household sanitation

Nearly half of the respondent fishers use pit latrine and one-third use ring slab as toilet. Meanwhile, there was no toilet facility for 15% fishermen and only 5% can use hanging latrines. More than half of the toilets were built outside yard of the respondents' house. Over one-third toilets are situated inside yard and only 10% are found attached to dwelling house. Most of the fishermen (53.3%) use shared toilet and a few use public toilets (10%). Almost 82% responding fishers cited that they don't wear shoe while they use toilet (Table 7). Jim (2015) revealed most of the fishers (81.7%) of the Chandpur and Bhola use ring slab toilet with or without water seal and around 10% fishers have no toilet facility and they defecate in open field or bush or river/pond side. He further observed nearly half of the fishers (48.3%) toilet located at inside yard while 44% toilet located outside. Moreover, 42.5% fishers share toilet facility with others and 3.3% use public toilet. He also found around 92% have worn shoes in toilet.

CONCLUSION

This study has found fishermen of Sunamganj are facing a range of problems entailing high illiteracy rate, low income, limited alternative income generating opportunities, inadequate loan facilities, scarcity of proper health care services, poor living conditions and substandard sanitation facilities. Poor fishers who experience less food security are more likely to use destructive fishing gear and are more noncompliant to fishing laws. Therefore, comprehensive initiatives should be taken by both government and non-government organizations to enhance the well-being of resource-poor fishing communities of Sunamganj to ensure sustainable use and appropriate management of fisheries resources of the adjacent areas.

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CONFLICT OF INTEREST

The authors assert no conflict of interest.

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