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Socioeconomic and livelihood status of Beel fishermen: A special reference to Chapaigachi Beel of Kushtia

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Abstract
The present study was conducted to assess the socioeconomic and livelihood status of fishing community of the Chapaigachi beel in Kushtia from May to October, 2013. Data were collected through the use of well-structured questionnaire and several PRA tools from the selected area. According to the survey, most of the fishermen are subsistence (62.5%) whereas, 24.04% fishermen are professional and 13.46% are seasonal. The majority of the fishermen are Muslim (90%) and maximum percentage (52.5%) of the fishermen had medium family size (52.5%). Most of the respondents (32.5%) were in 31-40 age groups. About half (46.5%) of the fishers can sign their name only while about 22.5% of them were illiterate. Most of the fishermen (65%) live in kacha house and 68.5% of the fishermen were dependent on village doctors. Among the sampled fishermen 65% were found to use katcha toilets and majority of the fishermen (77%) has no electricity. From the survey it was found that, only 7 types of nets, 4 types of traps, 3 types of hooks, 4 spears and various FAD were used in Chapaigachi beel. The maximum number of fishers used Fash jal (Gill net) and Charo (Trap) and the lowest number of fishers used Khara jal (Lift net) and Teta (wounding gears). The present study has revealed that most of the fishers (55%) are engaged in fishing as their only income source and more than half (55%) of the fishers had low daily income (Tk.100-200). Only 30% fishermen were self-sufficient who did not need financial help but 16% borrow money from their neighbors', 21% from relatives, 27% from NGO and 6% from cooperatives for buying fishing materials. The fishers have faced various types of problems such as inadequate credit facility, lack of technical knowledge, loss of fishing right, lack of appropriate gears, lack of nearby fish market and extortion by the local extortionist which make them poor year after year.

Keywords: fishermen, socioeconomic status, chapaigachi beel

Introduction
Fisheries sector is contributing imperatively towards the economic development of Bangladesh and in the alleviation of rural poverty. The fisheries of Bangladesh represent a remarkable natural resource with an intimate connection with the life of the people of the country. About 6 million peoples are directly or indirectly engage in this sector (DoF, 2015) [7]. A large portion of rural family members are engaged in fishing from the beels and other open water bodies. Beels are large surface water bodies that accumulate surface runoff water through internal drainage channels; these depressions are mostly topographic lows produced by erosions and are seen all over the country. Bangladesh has a total of about 4,500 beels covering an area of about 1,14,161 ha which is 2.91% of total inland water bodies (DoF, 2015) [7]. These provide nearly 2.51% of total inland fish production. The overall production of beels is about 88,911 mt which is rather low. Though it has great potential but little or no attention has been paid towards the better management of the beel fishery system which ultimately affected the socioeconomic condition of the fisher folk which are dependent on this beel for their livelihood.

Fishermen are one of the most vulnerable communities in Bangladesh. They are poor by any standard and over the years economic condition of the fishermen had further deteriorated. Alam (2008) [2] estimated the average per capital annual income of the fishermen families to be BDT 2,442 i.e. about 70% lower than the per capital income of the country as a whole.

A livelihood is sustainable when it enables people to cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Chambers, 1992) [6].

Chapaigachi beel is one of the most important and largest beel in Kushtia which is rich in biodiversity. It has great influence on fisheries and livelihood of the fishermen of Kushtia sadar Upazila as well as the entire fishing community adjacent to the beel. This beel plays a very important role in view of income, employment generation and supporting livelihood to the poor fishing community. But enough information regarding socioeconomic and

livelihood status of the fisher community of Chapaigachi beel is unavailable. The present study is therefore, an attempt with an aim to investigate the socioeconomic and livelihood status of the fisher community of this area.

Materials and methods

Study area and period of study

Chapaigachi beel under Kushtia Sadar upazila of Kushtia district was considered for the study. No study was conducted previously in this beel area. At first, primary information was collected from District Fisheries Officer (DFO), Kushtia, Upazilla Fisheries Officer (UFO), Kushtia Sadar and ADC (Revenue) regarding the concentration of the area for fishing activities in the Chapaigachi beel. On the basis of this information, a preliminary survey was conducted from May to October, 2013. Field visits were done fortnightly during the study period to collect necessary information.

Data collection

For data collection from the fishermen of Chapaigachi beel a questionnaire was prepared in accordance with the objectives of the study. Primary data were from the questions related to the fishermen and their socio-economic status, fishing gears and other aspects of Chapaigachi beel were included in the questionnaire. Primary data from 40 fishermen were collected through personal interview supplemented by multiple methodological Participatory Research Approach (PRA) tools such as Focus Group Discussion (FGD) and Crosscheck Interviews (CI) with key informants at home or beel sites during fishing. Secondary data included relevant information on status of beel were collected through literature and publications available from Upazila Fisheries Office, quarterly and annual reports. All the collected information were accumulated and analyzed by MS-Excel and then presented in textual, tabular and graphical forms to understand the present livelihood and socio-economic status and constraints of the fishermen of the studied area.

Results & Discussion

Human capital

Types of Fishermen

Fishing is the main occupation of villagers in Chapaigachi beel. The fishermen of Chapaigachi beel are categorized into three groups: Professional fishermen, Seasonal fishermen and subsistence fishermen. About 24.04% of total fishermen are professional, 13.46% are seasonal and 62.5% fishermen are subsistence.

Seasonal distribution of fishermen

The fishing activities of fishermen vary with the season. Fishermen were distributed by the category over the season observed in the study area: “Pre-monsoon” (April-June), “Monsoon” (July-September), “Post-monsoon” (October-December) and “Dry season” (January-March) (Fig. 1). As the beel is allowed to fishing during November to December, so all types of fishermen involved in fishing during Post-monsoon in contract basis.

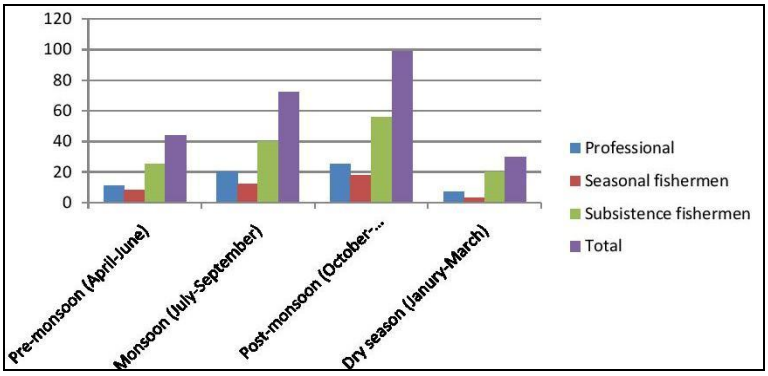

Fig 1: The distribution of fishermen by season in the Chapaigachi beel.

Religion status

According to survey 90% Muslims were featuring as the absolute majority of the fishermen and the rest10% were Hindus who depend on and only on fishing.

Family Size

The fishermen families were classified as i) small families with 1-3 members, ii) medium families with 4-6 members, iii) large families with 7-9 members, iv) larger families with10-12 members and v) very large families with above 12 persons. The maximum percentage (52.5%) of the fishermen had medium family and lowest percentage (7.5%) of the fishermen had larger family. The small and large family represents 22.5% and 17.5% respectively of total fishermen (Fig 2). The family size and its composition are related to occupation, income and are likely to have an important influence on fishing practice.

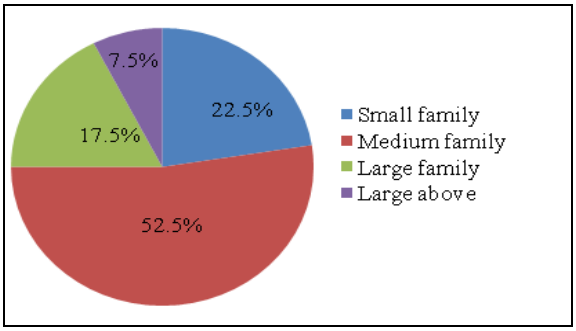

Fig 2: Distribution of family size of samples of fishermen of Chapaigachi beel.

Age structure

The study revealed that mainly male fishermen were involved in direct fishing in the study area. Table 1 showed that fishermen of the age group of 31 to 40 years are mainly engaged in fishing on an average of total sample population and they constituted 32.5% of the total respondents. 21 to 30 and 41 to 50 age class were 27.5% and 20% respectively. (Table1).

Table 1: Distribution of age group of sampled fishermen of Chapaigachi beel.

Age (years)	Fishermen	
	Number	Percent (%)
<20	4	10%
21-30	11	27.5%
31-40	13	32.5%
41-50	8	20%
51-60	3	7.5%
60<	1	2.5%
Total	40	100%

Education Level

In the study educational status of the fishermen have been classified into five categories: “Illiterate”, “Can sign only but illiterate”, “Primary level” (class 1-5), “Secondary level” (6-10) and “Higher secondary and above” (above 10). About half (46.5%) of the fishers can sign their name only while about 22.5% of them were illiterate. Among the fishers 17% of the fishers had primary level education, 9.5% of the fishers had secondary level education and the rest (4.5%) had higher secondary and above level education (Fig. 3).

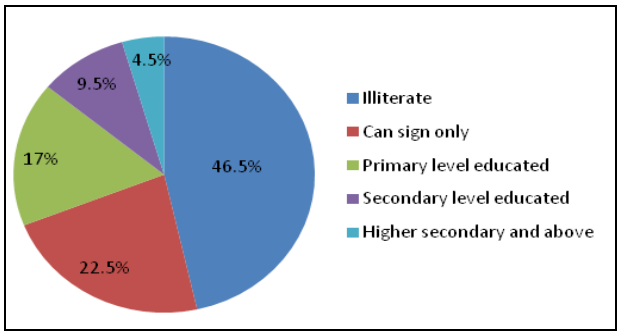

Fig 3: Distribution of fishermen according to their education level

Physical capital

Housing Condition

In order to obtain an overview about the standards of living of the fishermen community, data was collected about the physical structure of the houses and their numbers. Most of the fishermen (65%) live in kacha house, while 27.5% and 7.5% fishermen live in semi-pacca and pacca house respectively (Fig. 4).

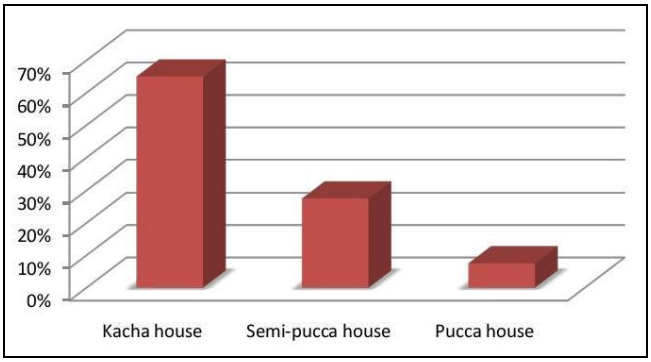

Fig 4: Distribution of fishermen according to their housing condition.

Health facilities

In the study area health facilities of the fishermen were poor and it was found that 68.5% of the fishermen households were dependent on village doctors who did not have any understanding and knowledge of medical science, 21.5% of the fishermen got health service from upazila health complex and remaining 10% got health service from MBBS doctors (Table.2).

Table 2: Health facilities of the fishermen

Health services	Number of fishermen (n=60)	Percent of fishermen (%)
Village doctor	40	67
Upazila health complex	18	30
MBBS doctor	2	3

Sanitation facilities

Four types of toilet facilities were found to be used by the fisher community in the study area. These toilets were: katcha, semi-paka, paka and hanging toilets. Hanging toilets are posing threat to public health. Among the sampled fishermen 65% were found to use katcha toilets, 25% semi-paka toilets and 6% paka toilets. It is noteworthy to mention that 4% of the fishermen use hanging toilets (Fig. 5).

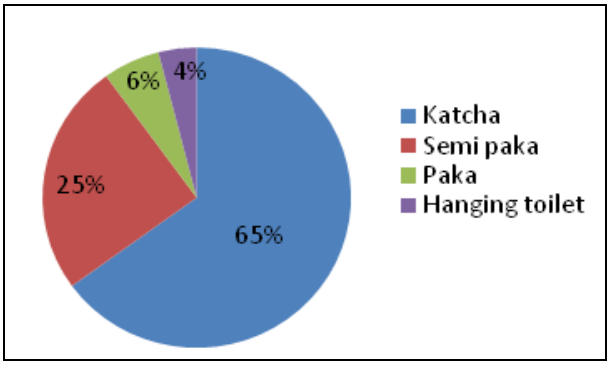

Fig 5: Sanitation facilities of the fishermen

Electricity Facilities

In the study area, it was found that 23% of the fishermen had electricity facilities and 77% had no electricity facilities at their residence.

Fishing assets

Several types of fishing gears were being used in the study areas which were classified into five types, namely net, fish trap, hook, FAD (Fish Aggregation Devices) and wounding gear/Spears (Table 3). From the survey it was found that, only 7 types of nets, 4 types of traps, 3 types of hooks, 4 spears and various FAD were used in Chapaigachi beel.

Table 3: Fishing gears used in Chapaigachi beel.

Class type		Gear type	Gear name
1.		Cast net	Khepla jal
	Nets	Drag net	Dura jal/Lathi jal
		Falling net	Chabi jal/Chak jal
		Gill net	Fash jal/Current jal
			Puti jal/Pait jal
		Lift net	Khara jal/Veshal jal
		Push net	Thela jal
		Seine net	Ber jal/Kheta jal
2.	Traps		Polo
			Kholsun/Charo
			Bitte /Autal
			Icha chai /Duari
3.	Wounding gears/Spears		Konch
			Thur konch
			Teta
			Aika/Akra
4.	Hooks		Chip borshi
			Chara borshi
			Daun borshi
5.	Zag/FAD (Fish Aggregation Devices)		Khata/Zag

Fishing gears used by the different number of fishers

During the survey period it was found that different types of fishing gear used by the several number of fishers in the Chapaigachi beel. The maximum number of fishers used Fash jal (Gill net) and Charo (Trap) and the lowest number of fishers used Khara jal (Lift net) and Teta (wounding gears) (Fig. 6).

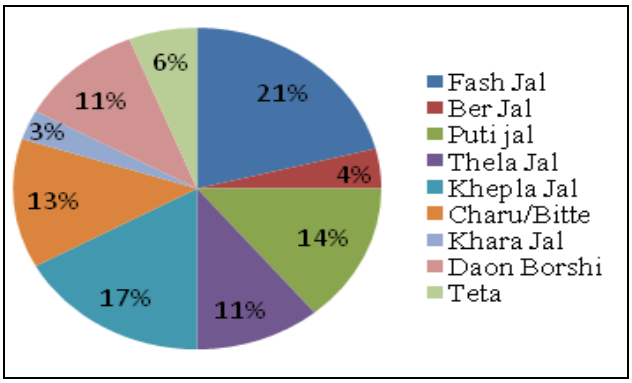

Fig 6: Percentage of fishermen used different fishing gears in the Chapaigachi beel.

Financial capital

Income Level

On the basis of their daily income the fishers were classified into three categories: "Low income" (Tk.100-200), "Medium income" (Tk.200-300) and "High income" (Tk.300-500). More than half (55%) of the fishers had low income while the proportion of medium income and high income earning fishers were 32.5% and 12.5% respectively (Fig. 7).

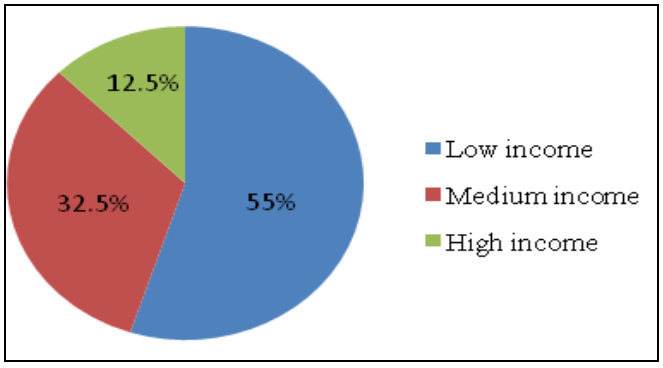

Fig 7: Distribution of fishermen according to their daily income

Occupational Status

From the data collected, it has been observed that fishing is the most common occupation of the fisher community in the study area. However, besides fishing some of them are also engaged in other profession such as agriculture, livestock rearing, small business and as day labor. The present study has revealed that most of the fishers (55%) are engaged in fishing as their only income source. However 25% are engaged in agriculture with fishing, 10% are van puller along with fishing, 6% are involved in livestock rearing whereas 4% are carpenter and engaged in fishing (Fig. 8).

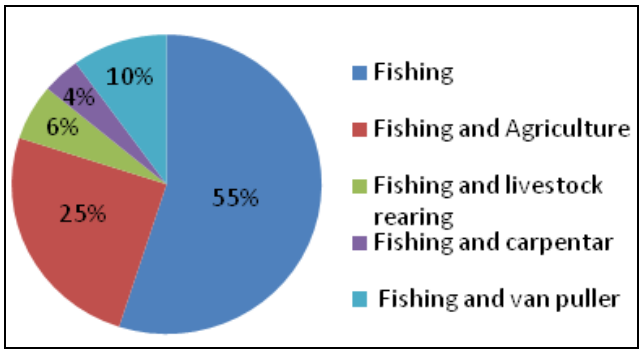

Fig 8: Occupational status of the fishermen

Credit access

The only national and local NGO like BRAC, Asha provide credit only to the organized poor members to purchase fishing materials. After repayment only 30% became self-sufficient who did not need financial help but 16% borrow money from their neighbours, 21% from relatives, 27% from NGO and 6% from cooperatives for their fishing business (Fig. 9)

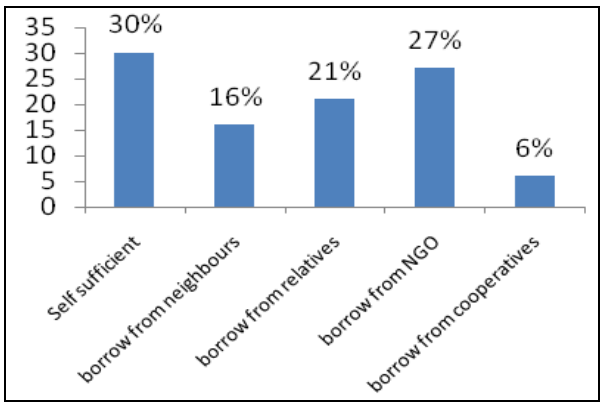

Fig 9: Credit access of the fishermen

Problems faced by the fishermen

Though leasing of the Chapaigachi beel (Jalmohals) was earmarked preferably for the fishers' cooperative society, the poor fishers could not pay the lease value and hence they had to depend on the rich man/mohajan for payment of lease money. The rich man/mohajon would pay the lease money on behalf of the fishers' society and would get full control of the beel where the fishers undertook fishing as laborer or on catch share/contract basis as the fishers get 25% share. So the traditional fishermen do not catch fish all the year round except monsoon period, traditional fishers face poverty and loss of fishing rights and had to move other work as day laborer. The fishers also have faced various types of problems such as inadequate credit facility, lack of technical knowledge, lack of appropriate gears, lack of nearby fish market and extortion by the local extortionist. Most of the fishermen were poor and illiterate and live from hand to mouth. As a result, generation after generation they remain illiterate and not being able to contribute for betterment of their family and community.

Discussion

The present study highlights some factors of poor socio economic condition and low standard of living of beel fishermen. Among the surveyed fishermen 24.04% were professional, 13.46% were seasonal and the rest 62.5% were subsistence fishermen. Bhaumik and Saha (1994) [4] found that 24% of them undertook fishing operation for 241-260 days, 39.6% spend 12 hrs/ day for fishing and off-season, and 23.4% of them undertook the job of net making. The maximum percentage (52.5%) of the fishermen had medium family and lowest percentage (7.5%) of the fishermen had larger family. The small and large family represents 22.5% and 17.5% respectively of total fishermen which is more or less similar with the findings of Ali *et al.* (2009) [3] in Mymensingh district. The study revealed that fishermen of the age group of 31 to 40 years are mainly engaged in fishing on an average of total sample population and they constituted 32.5% of the total respondents whereas 21 to 30 and 41 to 50 age class were 27.5% and 20% respectively which is agreed with the findings of Joadder (2008) [10] in Mail beel. Education is the key criteria to improve the socioeconomic condition. In the study about half (46.5%) of the fishers can sign their name only while about 22.5% of them were illiterate. Among the fishers 17% are primary level educated, 9.5% are secondary level educated and the rest (4.5%) are higher secondary and above level educated. Mahabubur, (2001) [12] reported that 68% of *hoar* fishermen were illiterate, 28% up to primary level and 4% had only secondary level education which is slightly different from the present study may be due to the geographical differences. Rahman (1994) [13] noted that in Bangladesh most of the fishermen are illiterate and few have primary level of education. From the study Most of the fishermen (65%) live in kacha house, while 27.5% and 7.5% fishermen live in semi-pacca and pacca house respectively. Alam *et al.* (1995) [1] found that about 82.22% of household structures were *kancha* whilst 11.11% were semi-*paka* and only 6.66% were *paka* of the Basantapur *beel* fishermen. Alam *et al.* (1995) [1] found that about 82.22% of household structures were *kancha* whilst 11.11% were semi-*paka* and only 6.66% were *paka* of the Basantapur *beel* fishermen. From the present survey it was found that 68.5% of the fishermen households were dependent on village doctors, 21.5% of the fishermen got health service from upazilla health complex and remaining 10% got health service from MBBS doctors who was more or less similar to the findings of Ali *et al.* (2009) [3]. Among the sampled fishermen 65% were found to use katcha toilets, 25% semi-paka toilets and 6% paka toilets. It is noteworthy to mention that 4% of the fishermen use hanging toilets. Kostori (2012) [11] found that 16% of toilets were katcha while 64% and 20% were semi-paka and paka. There were some dis-similarities due to geographical variation. In the study area, it was found that 23% of the fishermen had electricity facilities and 77% had no electricity facilities at their residence. Shamima (2000) [14] reported that 20% fishermen used electricity in the Gallamary Fishing Community of Khulna. From the survey, it was found that 20 different kinds of fishing gears under 5 major groups including 7 types of nets, 4 types of trap, 4 spears, 3 types of hooks and Khata/Zag (FAD) were used in the Chapaigachi beel. Tanvin Ara *et al.* (2010) [15] found 7 types of gears, 8 types of traps, 5 types of hooks and spears used in the capture fishery of beel Dakatia. Chakraborty *et al.* (1995) [5] enumerated the principal categories of fishing gears that are traditionally used in Bangladesh as the following: fishing nets, fishing traps, hooks and lines, wounding gears and fish aggregation device. According to the present study, more than half (55%) of the fishers had low income while the proportion of medium income and high income earning fishers were 32.5% and 12.5% respectively. Islam (2012) [9] studied on Tangon river found that, the majority (55%) of the fishermen belonged to the annual medium income (Tk. 36,000-60,000) group, followed by 25% of the fishermen in low income(Tk.10,000-35,0001) and only 20% of the fishermen had income in the range of (TK. 61,000-90,000) which is agreed with the present findings. The present study has revealed that most of the fishers (55%) are engaged in fishing as their only income source. However 25% are engaged in agriculture with fishing, 10% are van puller along with fishing, 6% are involved in livestock rearing whereas 4% are carpenter and engaged in fishing which was more or less similar to the findings of Islam (2009)

[8]. According to the survey, after getting credit from only local and national NGOs 30% became self-sufficient who did not need financial help but 16% borrow money from their neighbors', 21% from relatives, 27% from NGO and 6% from cooperatives for their fishing business which was similar to the findings of Alam *et al*. (1995) [1] in Natore district.

Conclusion

It was revealed that the socio-economic and livelihood status of the fishermen in the study area were very poor. The fishermen were deprived of many amenities. Due to the lack of aforementioned facilities a considerable amount of fishermen are converted to the other profession every year. Establishment of a suitable fish market and some educational institutes near the study area, providing some alternate income generating activities and VGF cards during the ban and lean season of the fishing and increasing the credit facilities can be a solution to enhance the socioeconomic condition of the fishermen.

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