

SOCIO-ECONOMIC STATUS OF FISHERMEN IN THE SUNDERBANS MANGROVE FOREST, BANGLADESH

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Abstract: The study on socio-economic status and constraints of the fishermen engaged in Sundarbans fishing revealed that the age group of the fishermen varied between <12 to 60 years of which 31-40 year group was dominant (26.91%). Most were scheduled Muslim (73.07%) and scheduled Hindus (23.08%) where higher caste was totally absent. Main occupation was fishing by born (88.46%) with 11-20 years of experience. Among them 61.54% were illiterate, 30.77% were primary educated. Most of the fishermen were married (75.00%), leading joint family status with large family members (5-6). Most of the fishermen had own Dingi type hand operated wooden boat, the size varied from 10.6-11.6 m. They also had nylon made, own set bag net. A section of them had no boats and nets. They caught fish 261-280 days/year (71.15%) and spent an average of 8 hours/day (65.08%). The average general catch during pick season was 111-130 kg/month provided the income of 801-900 Tk./month, but during off season the income decreased to 401-500 Tk./month. During off-season they were found to be engaged in net making, mending, repairing, boat making and repairing, daily labour, fish sale, crab and fry collection etc. Most of the poor fishermen had grown the habit of taking loan or borrowing: most often (59.62%), some often (21.15%), a bit regular (11.54%) and never (7.69%). The resourceful poor fishermen suffered from various problems like unavailability of fund, piracy and extortion, licensing complication, ownership right of boat and net, lack of organized market, ice, electricity and mechanization. They also suffered very often physically by intoxication, stomach disease and so.

Key words: Socio-economic status; constraints; fishermen; and Sundarbans.

Introduction:

The Sundarbans of Bangladesh is situated in the Southwest part of the country includes 9 Upazilas under Khulna, Satkhira and Bagerhat district. It covers an area of 5,772 km², of which 3,995 km² is terrestrial and the rest 1,777 km² is water including rivers and canals (Jhingran and Chakraborty, 1990; Chantarasri, 1994). The entire Sundarbans is criss-crossed by several rivers and canals thus offering the mixing of salt water of the Bay and fresh water carried from the upward rivers, hence makes the water bodies rich in fisheries resources both marine, brackishwater and freshwater species as well.

Out of the total population of the Sundarbans, the number of fishermen in 1993 ranged from 1,98,308 (Chantarasri, 1994; based on Forest Office record) to 2,97,000 (Shiva, 1994; cited by Khulna University, 1995) were engaged in fishing particularly exploiting the fisheries from the Sundarbans Reserve Forest (SRF) and adjacent canals and rivers. Which provided about 26% of the inland capture fishery. In spite of higher contribution of the mangrove fishermen in the National economy, they are in various problems and constraints in their livelihood. Little bit work (Chantarasri, 1994) on the Socio-economic status of the fishermen in the Sundarbans Reserve Forest has been done. With a view to highlight the socio-economic status and constraints of livelihood of the SRF fishermen, the present study was conducted in 2000-2001 within some fishing villages of the Sundarbans.

Methodology:

The study was conducted in 52 fishing villages, which were 0.5 Km to 30.0 Km far away from the Sundarbans under Khulna, Satkhira and Bagerhat District during the period 2000-2001. The fishermen engaged in fishing were directly taken under study. A total of 520 persons were randomly selected for conducting the study (Fisher, 1950). All the respondents were interviewed personally through a scheduled developed questionnaire including socio-personnel status, operation of crafts and gears, fishing efforts and amount of catch, fishing seasons, income generation, borrowing tendency and constraints faced by the fishermen during their operation. To study the borrowing tendency scores 3,2,1 and 0 were put up against "regular" "most often" "often" and "never" respectively. The perceived major constraints faced by the respondents were measured by scale (Haque and Ray, 1983). All the respondents under study were asked to mention three most important constraints, which they perceived in their livelihood. The mentioned problems 1, 2 and 3 were given the score 3, 2 and 1 respectively. The final rank score of each problem was obtained through multiplying the frequency by the respective scores. The constraints were then arranged in descending order of importance depending on the basis of total score. Data obtained in the present study were thus analyzed and presented.

Results and Discussion:

Socio-personal status: The socio-personal records of the present study revealed that the age groups of the fishermen engaged in Sundarbans reserve forest fishing varied from <12 to 60> years (Table 1). The most active and dominated group belonged to 31-40 years (26.92%) followed by the age group of 41-50 years (25.00%). A considerable number of people (3.27%) representing the age group of <12 years were involved

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in fishing and directly or indirectly helping their family guardians though the age was school going. On the other hand a few number of (2.5%) older men were also involved in fishing on the Sundarbans reserve forest. They were aged, having no ability to meet up their daily need and fighting against hunger. According to Pena, 1994 these two groups were involved with shrimp fry and crab collection. Majority of the fishermen were scheduled Muslim (73.07%) followed by scheduled Hindus (23.08%) which confirmed the observation of Chantarasri, 1994, but differ with Bhaumik and Pandit, 1991. The study revealed that unlike aquaculture, members of higher caste community was more or less absent in fishing in the Sundarbans reserve forest (Chantarasri, 1994; Bhaumik and Pandit, 1991; Bhaumik and Saha 1994).

Table 1. Details of Socio-personal status of the fishermen engaged in Sundarbans mangrove fishing (N=520)

Characteristic	Dimension	Frequency	Percentage
Age (year)	<12	17	3.27
	12-20	50	9.62
	21-30	60	11.54
	31-40	140	26.92
	41-50	130	25.00
	51-60	110	21.15
	61-70	13	2.5
Caste	Scheduled Hindu	120	23.08
	Scheduled Tribe	00	00
	Scheduled Muslim	380	73.07
	Others	20	3.85
Occupation	Fishing	460	88.46
	Others	60	11.54
Educational qualification	Illiterate	320	61.54
	Literate	00	00
	Primary	160	30.77
	High school	40	7.69
Marital Status	Married	390	75.00
	Unmarried	130	25.00
Family members (nos)	1-2	00	00
	3-4	139	26.73
	5-6	240	46.15
	7-10	141	27.12
	>10	00	00
Family norm	Joint	340	65.38
	Nuclear	180	34.62
Experience in fishing (year)	1-10	130	25.00
	11-20	220	42.31
	21-30	140	26.92
	31-40	30	5.77
	41-50	00	00

Principal occupation of majority of the respondents (88.46%) was fishing by born. Most of them were illiterate (61.54%) not able to sign at all but a few (30.77%) were primary educated. Most of the respondents (75%) were married and some of them were early married. Majority (46.15%) of the sample studied was large in family (5-6) members, living in joint family (65.38%) system. Most of the respondents were found to be well experienced in fishing. Among them 42.31% had 11-20 years of experience as because they went to the river initially for helping the guardians and afterwards they were able to work independently. All the results on socio-personal status were supported by the observation of Chantarasri, 1994. But varied a little with the observation of Bhaumik and Pandit, 1991.

Operation of crafts and gears: Results of the operation of crafts and gears are furnished in the Table-2 and Table-3 respectively. All the fishermen had wooden boat (98.08%), Dingi type (96.15%), among these 90.38% of the crafts were hand operated and only 9.62% were mechanized. The size (OAL) of the used crafts varied from 8.60 m to 12.50 m, but majority (61.54%) of the craft size belonged to 10.6-11.5 m. Majority (51.92%) of the respondents had their own boat and the rest having no boat but they used the boat of the middlemen or hired ones.

In case of gear operation about 67.31% of the respondent operate set bag net (SBN) and negligible amount of them operate seine net (8.65%), gill net (5.77%), lining (6.73%) etc. and all the gears (100%) were made of nylon twine. Majority (57.65%) of the fishermen had their own gear, considerable number (28.85%) of them used the gear of the middlemen and negligible number (13.46%) used the gear hired from other's. The present observation on operation of crafts and gears were strongly supported by Bhaumik and Pandit, 1991; Bhaumik and Saha, 1994; Chantarasri, 1994.

Table 2. Showing the details of craft used by the fishermen (N=520)

Characteristics	Dimension	Frequency	Percentage
Type	Dingi	500	96.15
	Chait	20	3.85
Size (OAL in m)	Chhot	00	00
	7.6-8.5	00	00
	8.6-9.5	40	7.69
	9.6-10.5	110	21.15
	10.6-11.5	320	61.54
	11.6-12.5	50	9.62
Material	12.6-13.5	00	00
	Wood	510	98.08
	Metal	00	00
Mode	Others	10	1.92
	Mechanized	50	9.62
	Hand operated	470	90.38
Ownership	Others	00	00
	Own	270	51.92
	Hired	100	19.23
	Middlemen	150	28.85

Table 3. Record on operation of gears used in fishing (N=520)

Characteristic	Dimension	Frequency	Percentage
Type of gear (more than one)	Large seine	40	7.69
	Small seine	45	8.65
	Gill net	30	5.77
	Lift net	00	00
	Set bag net	350	67.31
	Set gill net	00	00
	Fish French	00	00
	Lining	35	6.73
	Fish trap	20	3.85
Net materials	Others	00	00
	Nylon	520	100
	Cotton	00	00
Ownership	Own	300	57.69
	Hired	70	13.46
	Middlemen	150	28.85

Fishing efforts, fish catch and income generation: Results of fishing efforts, fish catch and income generation is furnished in the Table-4, 5 and 6 respectively.

Table 4. Showing the fishing efforts spent by the mangrove fishermen (N=520)

Characteristic	Dimension	Frequency	Percentage
Fishing time (day/year)	181-200	00	00
	201-220	30	5.77
	221-240	35	6.73
	241-260	70	13.46
	261-280	370	71.15
	281-300	15	2.89
	301-320	00	00
Fishing time (hour/day)	4	20	3.84
	6	120	23.08
	8	340	65.38
	10	40	7.70
	12	00	00

Most of the fishermen (71.15%) were engaged in fishing for 261-280 days per year, where as 241-260 days per year fishing groups were second (13.46%) in position. Most of the respondents (65.38%) engaged in fishing for 8 hours/day, which was higher than 6-hours/day fishing hour group (23.08%). Only 7.70% spent 10 hours/day for fishing to maximize their earning.

Average catch (kg/month) varied widely among the interviewers (Table-5). Major group of the respondents (38.46%) caught 111-130 kg/month. Only a few (7.70%) of the interviewers caught (191-210 kg/month) who worked hard and having extra facilities (like mechanized boat).

Table 5. Showing the amount of fish caught by the fishermen (N=520)

Characteristic	Dimension	Frequency	Percentage
Fish catch (kg/month)	91-110	00	00
	111-130	200	38.46
	131-150	130	25.00
	151-170	110	21.14
	171-190	40	7.70
	191-210	40	7.70
	211-230	00	00
	231-250	00	00
	251-270	00	00

Table 6. Income generation of the fishermen in the present study (N=520)

Characteristic	Dimension	Frequency	Percentage
Income Tk./month (peak season)	401-500	00	00
	501-600	40	7.70
	601-700	70	13.46
	701-800	94	18.07
	801-900	300	57.69
	901-1000	16	3.08
	>1000	00	00
Income Tk./month (off season)	301-400	00	00
	401-500	305	58.65
	501-600	95	18.27
	601-700	75	14.43
	701-800	00	00
	801-900	45	8.65
901-1000	00	00	

Fishing efforts, fish catch and income generation of the fishermen depends upon the environmental condition, availability of fish in the river, market price and other facilities (mechanized boat, available fund, ice, net etc.). The result of the present study differ with the observation of Bhaumik and Pandit, 1991; Bhaumik and Saha, 1994; Chantarasri, 1994. Which indicated that fishermen of the Sundarbans spent their maximum effort to optimize their earning. But, their amount of catch as well as the income generation found to be decreased gradually due to unavailability of fish in the Bay, mangrove rivers and various constraints faced by them.

Off-season activities: Off-season activities of the fishermen are presented in the Table-7.

Table 7. Off-season activities of the fishermen (N=520).

Characteristics	Frequency	Percentage
Day labor	60	11.54
Boat making & Boat repairing	53	10.19
Fish sale	94	18.08
Rikswa/ van pulling	20	3.85
Net making/mending/repairing	123	23.65
Crab collection	24	4.62
Shrimp Fry collection	110	21.15
Collection of wood/honey/goalpata	00	00
Work in the rice field	36	6.92

During the off season, most of the respondents (23.65%) involved for new net making, mending and repairing of their old net for future operation followed by fry (shrimp PL) collection (21.15%). A section of them involved in fish sale (18.08%). Other activities associated during the off-season for their livelihood were daily labour (11.54%), boat making and repairing (10.19%), rice field work (6.92%), crab collection (4.62%), rickshaw van pulling (3.85%). Without a little variation, the off season activities of the respondents agreed with the observation of Bhaumik and Pandit, 1991; Bhaumik and Saha, 1994 and Chantarasri, 1994.

Borrowing habit: Table-8 shows that, among the respondents, 59.62% took loan most often, 21.15% often and 11.54% are regular. Only few number (7.69%) of the respondent never took loan or borrow who had their own boat, nets and having cultivable land or other income source. All the respondents stated hardship to maintain their family within low and limited income. As they were poor in category, they grew the habit of borrowing from moneylenders, middlemen, fish merchandisers or from the co-operatives against high rate (15-25%) of interest to maintain the livelihood, making of nets and boats.

Table 8. Borrowing tendency of the respondent (N=520)

Characteristics	Frequency	Percentage
Borrow/loan regular	60	11.54
Borrow/loan most often	310	59.62
Borrow/loan often	110	21.15
Borrow/loan never	40	7.69

Basically, all the fishermen were poor, having limited amount of cultivable land, some of them having no land of cultivation, eventually for housing, they prepare small house on the Khas land or WAPDA. Most of them had no nets and boats of their own (Nasimul and Blowfield, 1997). The findings of the present study are strongly supported by the observation of Bhaumik and Shaha, 1994.

Constraints: The poor fishermen that engaged in exploitation of fish in the Sundarbans reserved forest perceived various problems and constraints (Table-9).

Among which the most important problem was the lack of fund. The potential poor fishermen were unable to invest large amount of money at a time to purchase of nets and boats. As a result they took loan against high rate of interest from the moneylenders, middlemen, co-operatives etc. for the preparation of nets and boats (Bhaumik and Saha, 1994; Chantarasri, 1994).

Table 9. Major problems/constraints perceived by the fishermen

Sl.No.	Constraints	Total score	Time frame	Ranks
1.	Unavailability of fund	450	always	1
2.	Ownership right of net and gears	300	very often	4
3.	Scarcity of ice	205	recently	8
4.	Lack of organized market system	280	from very beginning	5
5.	Unavailability of mechanized boat	260	from very beginning	6
6.	Improper transport facilities	165	from very beginning	9
7.	Lack of electricity	140	from very beginning	10
8.	Siltation in the rivers/canals	120	recent few years	11
9.	Lack of medical facilities	100	from very beginning	12
10	Life loss due to wild animals	85	recently increased	13
11	Piracy and Extortion	410	recently remarkable	2
12	Intoxication	220	from very beginning	7
13	Complication of licensing	340	recently more complex	3
14	Others	45	--	14

Lack of organized market in the remote Sundarbans area caused poor return as they sold their catch to the middlemen. Furthermore, improper transport facilities, scarcity of ice and electricity caused deterioration of the quality and low return as well. The other perceived problems faced by the fishermen were siltation in the rivers and canals, victim of wild animals and lack of medical facilities etc. Intoxication and stomach diseases of the fishermen were also prominent problem due to consuming river water and country liquor that affected the family life and social life as a whole.

Conclusion:

In spite of higher contribution of the fishermen in the national economy, they left behind and in the dark to the administrator or policy makers. In every step of life they are facing various problems in their livelihood and occupational life. The result of the present study highlighted the perspectives of socio-economic condition of the poor fishermen. The findings and recommendations of the present study will draw the attention of the administrator and policy makers to take necessary steps for the improvement of the fishing community.

Recommendations:

The fishermen are enough laborious and skilled in fishing to contribute higher exploitation. Due to various problems, they are unable to hold sustainable exploitation. Linkage among fishermen and credit organization should be emphasized in prior basis to ensure loans under low interest, any type of lingering and harassment in loan system should be prohibited. Law and administration situation against terrorism in the Sundarbans and licensing facilities should be improved immediately. In addition of these, fishermen should be well equipped and mechanization should be done.

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