

Socioeconomic Features of a Traditional Fishing Community beside the Old Brahmaputra River, Mymensingh, Bangladesh

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Abstract

Fishing is an ethnic occupation of the inhabitants of Bhatipara fishing village, Mymensingh, Bangladesh. The fishermen come from the Barman Sect, a low caste of the Hindu community, and are a highly disadvantaged and neglected class in the society. They are principally group fishers and use seine nets in group fishing. The catches are normally sold to middlemen who in turn sell to the consumers via several other intermediaries. The owner of the net gets 20% of the total revenue while the remaining amount is divided equally among the fishermen keeping one share, equal to a fisherman, for the boat owner. Income distribution showed significant inequality between marginal and nonmarginal fishing households. Opportunities for employment and other income-generating activities for women are scarce (e.g. net making, fish drying, fried rice preparation, goat and poultry rearing, etc.) and these are not effectively exploited due to lack of self-confidence, awareness and social and economic freedom. The fisherfolk have no access to scheduled banks for loans due to the absence or insufficient collateral security. They do not have access to any government or nongovernment organization offering technical or credit support for improving fishing efficiency and management activities. Most of the households in the village are forced into usury transactions where marginal fishermen act as borrowers and relatively well off fishermen as lenders along with the local moneylenders. In the face of escalating poverty and gradual reduction in fish production, the fishermen are struggling to sustain their livelihood. Cage aquaculture in the nearby river with effective input supply and technical and social support may improve their livelihood and help to enhance riverine fish production.

Introduction

Bangladesh is topographically a deltaic plain criss-crossed by innumerable rivers and rivulets and has a great fisheries potential (Rahman 1994a). Riverine fishing areas comprise nearly one fifth of the entire fishing area of 4.9 million ha of the country (Huq et al. 1986). Riverine capture fisheries in the

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form of common property and open access resources constitute a vital component of the agro-ecosystem of rural Bangladesh (Sadeque 1990). It is also a very important source of household welfare for millions of rural poor, particularly for providing nutrition (specially the much needed protein), income and employment. Bangladesh is endowed with about 230 rivers and it is estimated that the total length of rivers, streams and canals altogether cover more than 24,000 km (Rashid 1991). Combined with estuaries, the rivers of Bangladesh cover an area of 1.0 million ha (Ali 1991).

The Brahmaputra-Jamuna River system is one of the three major river systems of Bangladesh. The Old Brahmaputra River was once the main flow of the Brahmaputra-Jamuna river system and rich in different fish fauna. A large number of people depend on fishing in the river and other fishery-related activities like fish marketing and trading, craft and gear maintenance etc. for their livelihood. Hundreds of riparian fishermen earn a living by fishing in the river throughout the year and by collecting major carp fry from May to August. For many fishermen, fishing is a seasonal activity while to the traditional fishing communities it is the major and in some cases, the only occupation available.

The traditional riverine fishing communities of Bangladesh are as widely geographically scattered as its rivers. The vast majority of the fishing communities of Bangladesh are confronting more or less similar problems that stand in the way of increasing catch and hence income from fishing operations. Hannan (1994) stated that fishermen are traditionally poor and fishing is considered as a low-class profession in Bangladesh.

The Barman caste, a lower class Hindu sect, is one of the traditional fishing communities of Bangladesh. A group of fishermen belonging to the caste live in the vicinity of the Old Brahmaputra River. They earn their subsistence by catching fish and collecting Indian major carp fry in the river and its adjacent floodplains. The fishermen of this community are socially, economically and educationally disadvantaged and lack their own financial resources. Moreover, the caste system of Hindu communities limits or precludes occupational mobility and employment opportunities, as does a lack of education and access to basic information. The gradually declining riverine fish production in recent years has added to their adversities. To maintain their livelihood intact the subsistence fisherfolk have resorted to increased and indiscriminate fishing using different types of destructive gears. The fine-meshed seine nets are the most extensively used destructive gears in this locality. The present study has been undertaken to evaluate the socioeconomic conditions of the aforesaid traditional fishing community, because socioeconomic improvement of fishermen is considered to be the primary objective of riverine fisheries development.

Materials and Methods

Study area

The survey was conducted in the Bhatipara fishing village of the Char Nilaksia union under the Kotwali Thana in the district of Mymensingh,

Bangladesh (Fig. 1). It is situated on the east side of the Old Brahmaputra River, about 6 km southeast of Mymensingh town. This part of the Old Brahmaputra River used to be very famous for its rich capture fisheries resources and one of the most important Indian major carp spawn collection sites. All of the 25 households in the village are engaged in fishing, 31 fishermen live in the village. Fishing in the river and adjacent floodplains is their main occupation. They get subsistence from their catch but the gradually declining fisheries resources have caused them hardship. Although some of the households in the neighboring villages are also engaged in fishing, it is just a seasonal and part-time job for them. The present study covered the socio-economic features of the traditional fishing community of Bhatipara village where fishes are caught by the fishermen throughout the year and are sold to the middlemen on the riverbanks or by themselves as retailers in nearby fishmarkets.

Data collection method

Data were collected using questionnaires and Participatory Rapid Appraisal (PRA) tools such as Focus Group Discussion (FGD) with the fishermen and the womenfolk in the fishing village. The survey was conducted over a period of six months from July 2001 to December 2001. All 31 fishermen and 25 women of the village were selected for the interview. PRA tools were used to get an overview of some particular issues such as fish catching, fry catching, marketing, employment, income, credit access issues, gender disparity, etc. Cross check interviews were conducted with as many respondents as possible. Most of the interviews were conducted in the fishing areas, in the fishing village and in the local fish markets.

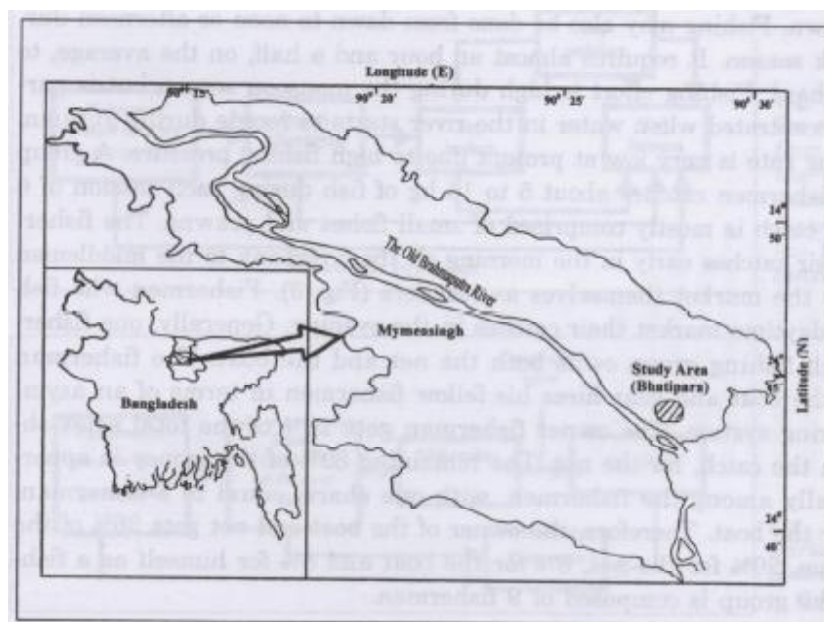


Fig. 1. Map of Mymensingh Kotwali Thana showing the location of Bhatipara fishing village and the Old Brahmaputra River.

Results and Discussion

Fish catching and marketing

Fishermen catch fish in the Old Brahmaputra River throughout the year, using different types of seine nets, pull nets, lift nets and cast nets along with various forms of traps. Catching of Indian major carp fry, which takes place from May to August used to be a substantial source of their income. In recent years, fewer fry have been caught due to the less number of broods and impaired fish spawning success due to changing environmental factors such as late rain, pollution, high rate of siltation, and most particularly overexploitation. Two types of nets are used for fry catching, the 'behundi jal' or set bag nets (SBNs) and the fine-meshed seine nets. The start of fish fry catching depends on the monsoon rains. The fishermen set the SBNs in the surface layer against the river flow and collect a large by-catch of younger stages of other fish, both small and large species, along with the targeted ones. The SBNs are set during the evening and drawn up from the water to collect the fry in the morning. They again set the nets in the morning and collect the trapped fry in the evening. Collection of fry using the fine-meshed seine nets is an integral part of everyday fishing with the gear during the spawning season. The fry are sold to middlemen who bring them to the farmers in distant areas of the same district such as Haluaghat, Kalsindhu, Shambhuganj and even to areas in nearby districts, Netrokona and Kishorganj. Some fry catchers also sell their catches themselves as peddlers (Fig. 2). Almost all fishing households produce dried fish during the peak-fishing season for their own consumption and also to earn by selling the dried fish during the off-season.

Fishermen use nonmechanized boats in operating the fine-meshed seine nets. It requires 8 to 10 fishermen to operate a seine net of about 150 to 200 m in length and 10 m in breadth. They start fishing at about 11 pm and continue till dawn. Fishing may also be done from dawn to noon or afternoon during the peak season. It requires almost an hour and a half, on the average, to complete a haul. Fishing effort is high during the monsoon season but is particularly concentrated when water in the river starts to recede during autumn. Fish catching rate is very low at present due to high fishing pressure. A group of 8 to 10 fishermen catches about 5 to 15 kg of fish during each session of 6 to 8 h. The catch is mostly comprised of small fishes and prawns. The fishermen sell their catches early in the morning on the riverbank to the middlemen or sell it to the market themselves as retailers (Fig. 3). Fishermen who fish during the daytime market their catches in the evening. Generally, one fisherman in each fishing group owns both the net and the boat. The fisherman who owns the boat and gear hires his fellow fishermen in terms of an asymmetric sharing system. The owner fisherman gets 20% of the total sales obtained from the catch, for the net. The remaining 80% of the money is apportioned equally among the fishermen, with one share, equal to a fisherman, retained for the boat. Therefore, the owner of the boat and net gets 36% of the total revenue, 20% for the net, 8% for the boat and 8% for himself as a fisherman, if the group is composed of 9 fishermen.

Socioeconomic conditions of the fishermen

INCOME AND LIVING STANDARD

Although fishing is the major and, in some cases, the only source of income of the traditional fishermen, the fisherfolk occasionally undertake a variety of fishery-related and nonfishery-related activities, which constitute a substantial part of their annual income (Tables 1 and 2). These income-augmenting opportunities, however, are very limited. Fishery-related activities carried out in the village include fish marketing and trading, gear and craft maintenance and repair etc. There are very limited options for nonfishery-related activities such as wage labor in the other sectors like agriculture, construction, livestock and poultry raising, etc.

From the interviews, three fishermen (9.68%) mentioned that their daily fishing income fluctuate between Tk. (Taka) 200 to 300 (US\$ 1= about Tk. 57) while 20 fishermen (64.52%) mentioned that their daily income was between Tk. 50 to 70 per day from group fishing. The daily income of the rest of the fishermen (25.80%) was less than Tk. 50. It was found that fishers spend 18 to 31 days (26 days, on an average) per month on seine net fishing (Fig. 4).

The marginal fishermen were also found to fish individually using gears like cast nets, push nets, pull nets etc. aside from group fishing to augment their income. These types of fishing gears are reported to be operated for about 16 days per month by fishermen with no major fishing equipment like a seine net and a boat. During the fry catching season, their daily income increases to some extent. Their income varies with the fry catching rate, weather condition and market price of fry. However, due to the asymmetric sharing system, income distribution showed significant inequality between marginal and non marginal fishermen from group fishing (Fig. 5).

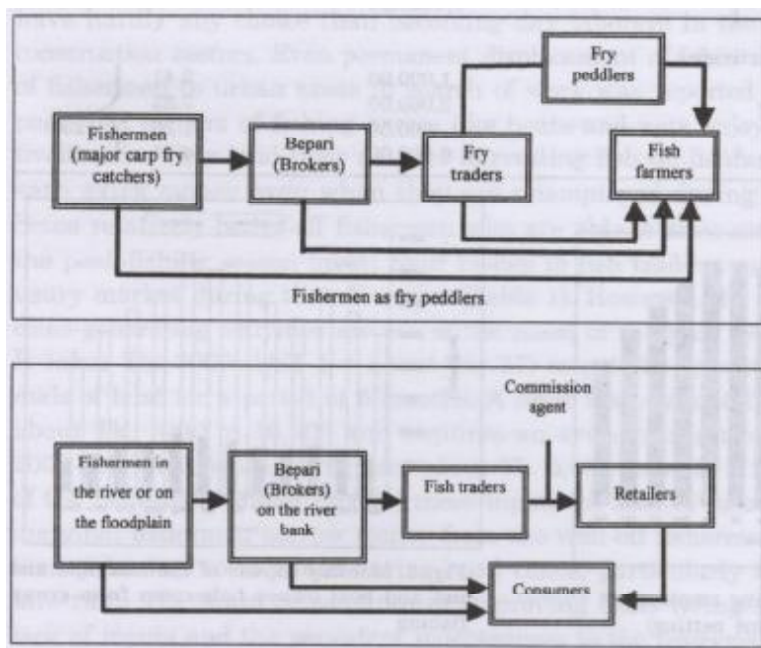


Fig. 2. Major carp fry supply chain from fishermen in the Old Brahma putra River to fish farming areas in the Mymensingh district.

Fig. 3. The fish marketing channel from the fishermen to the consumers.

The income of marginal fishermen has decreased over the years due to reduced availability of fish and major carp fry in the river. Moreover, every year more people from the neighboring communities are getting involved in fishing as a seasonal or part time occupation. As a result, fishing pressure is continuously increasing. In addition, environmental degradation caused by late rain, heavy river siltation, agricultural and industrial pollution, etc. further intensify the problem. The consequent decline in fish populations has thrown the fishermen into hardship.

Table 1. Average annual income of a major fishing asset holding household from fishing, fishery- and nonfishery-related activities.

Source of income	Income (Tk.) per annum*	% of total income
Fishing and fishery-related activities		
Group fishing	8,8725.00	76.4
Fish marketing		
Net lending		
Non-fishing activities		
Livestock		
i) Milk	9,125.00	7.86
ii) Cow fattening	4,700.00	4.05
iii) Goat rearing	3,075.00	2.65
Paddy production	7,000.00	6.03
Money lending (Usury)	3,500.00	3.01

*US\$ 1 = about Tk. 57

Table 2. Average annual income of a marginal household (having no major fishing asset) from fishing, fishery-and nonfishery-related activities.

Source of income	Income (Tk.) per annum	% of total income
Fishing and fishery-related activities		
Group fishing	3,1025.00	74.71
Individual fishing		
Fish marketing		
Nonfishery-related activities		
Cow fattening	1,000.00	2.41
Fried rice making	3,000.00	7.22
Poultry raising	500.00	1.20
Wage labor	6,000.00	14.45

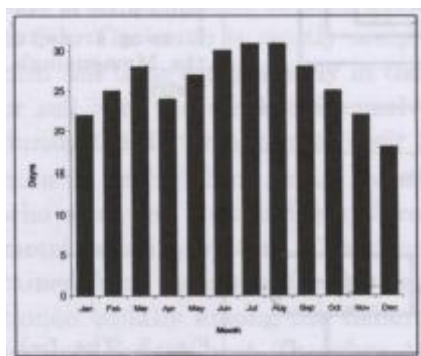


Fig. 4. Monthly fishing employment in group fishing (Seine netting)

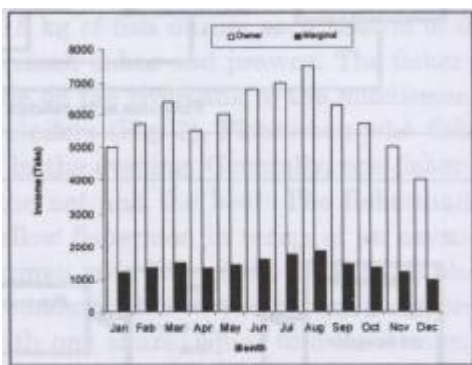


Fig. 5. Monthly income of the marginal and net and boat owner fishermen from group fishing

The fishing village is characterized by a high degree of poverty among the fishermen. It was estimated that about 88% of the households were below the poverty line. Lack of proper input supply to take up fishing as an economically viable occupation the year round may be the major reason for the high incidence of poverty among the fisherfolk. Natural disasters such as late rain, floods and tornadoes; low catch rates and lack of subsidiary-income opportunities also contribute to this sad state. Most of the fishermen cannot afford three meals a day for their families. Hannan (1994) studied the socioeconomic conditions of some coastal fishing communities in Bangladesh and stated that fishermen lived in a hand to mouth subsistence and are a highly neglected class in the society. Bailey (1994) also noted that fishermen and their families in South and Southeast Asia often are considered to be among the poorest of the poor. Fishermen who own their nets and boats enjoy self-employment and get comparatively more remuneration than the hired fishermen. Ownership of fishing and nonfishing assets among the fishermen is very limited. There are only three individually owned seine nets in the village. Most of the fishermen are landless, some possess small land where they have constructed their houses and only a few have some cropland. The landless fishermen constructed their temporary houses on the land of their relatives, neighbors or fellow fishermen. Domestic animals such as cattle or poultry are owned mostly by the comparatively well off fishermen. But they have no access to bank loans due to lack of bankable assets, and at present there are no nongovernment organizations (NGO) working in the village from whom fishermen can get substantial financial and technical benefit. The lean season (November to January) is the hardest time for the fishermen. During this season, this part of the river is reduced to a stagnant pool occupied by filamentous algae and submersed aquatic weeds and the floodplain becomes completely dry. The fishable water area gets constricted, which results to unemployment and surplus labor. The fishermen have hardly any choice than becoming day laborers in the agricultural and construction sectors. Even permanent displacement of labor through migration of fishermen to urban areas in search of work was reported to happen in the past. But owners of fishing assets like boats and nets enjoy far more secure livelihoods. They lend their nets for harvesting fish on fishfarms and thus can earn extra money even when they are unemployed during the lean season. Some relatively better-off fishermen who are able to save some money during the peak-fishing season invest their money in fish trading, agriculture and the usury market during the off-season (Table 1). However, the inputs for the income-generating activities are out of the reach of the poor fishermen (Table 2). It takes Tk. 3000 (US\$ 1 = about Tk. 57) to get the tenantry of 100 decimals of land for a period of 6 months. A seine net of about 150 to 200 m costs about Tk. 7000 to 10,000 and requires an average maintenance cost of Tk. 2000 per year. Again, it requires about Tk. 5,000 to build a fishing boat. Most of the fishermen cannot procure these inputs for lack of money. Moreover, the marginal fishermen borrow money from the well off fishermen and other local money lenders to buy food during hard times, particularly in the years with late rain. The main constraints in improving their living standard are the lack of inputs and the persistent indebtedness to the usurious traditional credit

system. Ruddle (1994) stated that the persistent indebtedness to the traditional credit system also binds fishers to their communities and occupation, as well as the “ethos of the fisher” and the related sense of subcultural identity.

Credit access issues

The financial assets or capital of the poor stakeholders is the amount of money that they can use to get more of the other assets (SCL Newsletter, March 2000). The sources of financial capital for the poor fishermen are the informal credit market and the quasi-formal credit market. The chief actors of the informal credit market are the money lenders or usurers, while the NGOs are considered as the actors of the quasi-formal credit market. The fishermen have no access to the formal credit market (scheduled banks) due to the absence of or insufficient collateral security. The source of money for the procurement of inputs for fishing and nonfishing activities, house building, children's marriage, etc. in the village is principally the usury market. In the usury market, the money lenders lend money at an interest rate of 100% per annum or 75 kg of rice for Tk. 1000 per 6 months. However, there is no set rate of interest and it often varies widely with season and from lender to lender. The fisher folk have easy access to credit from the money lenders with flexible repayment terms as well as for a wide range of needs.

On the contrary, the national and local NGOs e.g. Bangladesh Rural Advancement Committee (BRAC) provide credit only to their organized poor members and they offer the subsequent loan only after repayment of the former one. The usurers lend money even before realization of the previously lent amount. It is often argued that the amount of credit being provided by the NGOs is insufficient and is not commensurate to the poor people's actual need. Furthermore, no NGO offered technical support or a credit program in the village particularly focusing on the fishermen as a separate target group. Other problems associated with the microcredit system of the NGOs, as reported by the fishermen, are mainly the weekly instalment system, nonflexibility in credit recovery period, insufficient credit to invest in fishing and other fishery-related activities and a high rate of interest. In the past, there were some BRAC credit programs with the womenfolk of the fishing village. The women who secured credit invested the money in projects operated by their husbands or sons. Most of the fishermen, except for the relatively well off ones, could not utilize the money properly and keep up with the instalments. The poor fishermen generally invested the money credited by the NGOs in nonfishery projects such as beef-fattening, milk cow rearing, poultry raising, etc. which did not generate income on a regular daily, weekly or even monthly basis. As a result, the fishermen deferred instalments. Due to persistent demand for the instalments by the NGO representatives, the households had to turn to the usury market again or sell their last assets to refund the money. Other disadvantages of credit offers by NGOs reported by the fishermen are their failure in reaching the poorest of the poor fishermen, lack of sustainability, problems in legitimacy, transparency and accountability. As a result, the fishermen lost their interest and left the BRAC Program some 2 years ago. In fact, the biggest problem in

the village is the very limited potential for investment opportunities in fishery- and nonfishery-related activities for the fishermen in the locality. The poor fishermen borrow money mostly to maintain their subsistence during the hard times from the informal credit market. However, the overexploitation in the informal credit markets marginalizes the fishermen to a large extent. Consequently, almost all of the fishing households are persistently trapped by usury transactions. The well off fishermen of the village were also found to act as usurers and lend money to their fellow fishermen.

Dependency ratio

The dependency ratio was calculated by dividing the total number of dependent members by the total number of earning members of each family. In this case, dependent members refer to those family members who had no principal occupation (including students). The percentages of earning and dependent members of the fishermen households having seine nets and boats were 23.81 and 76.19, respectively and dependency ratio was 3.2. On the other hand, the percentages of earning and dependent members of the fishermen households having no such fishing assets were 27.96 and 72.04, respectively and dependency ratio was 2.58. From the results it is evident that nonmarginal fishermen had a relatively higher dependency ratio. The lower dependency ratio in the marginal fishermen households due to poverty forced work involvement of the under-aged people of this group.

Housing condition

Most of the fishermen lived in very poor housing conditions. Majority of the houses in the village are closely constructed temporary huts made of mud and/or bamboo fencing and roofing of one kind of weed leaves, locally called chhan (*Saccharum sponfanum*), collected from the river side. The landless fishermen constructed these huts on the land of their relatives, neighbors or fellow fishermen. A few semipermanent structures with corrugated iron roof seen in the village, were owned by relatively well off fishermen in the village.

Religion

All of the 31 fishermen interviewed in the Bhatipara village belong to the Barman sect of the Hindu Community. Their predecessors formed the village some 125 to 150 years ago. From then, the Bhatipara fishing village has kept its absolute religious and ethnic purity intact. Hannan (1994) stated that ethnic communities used to catch fish from natural water in Bangladesh and that the fishermen came from a low caste of Hindu society. The Hindu community is a religious minority in Bangladesh, and the Barman caste is a small segment of this community. Like illiteracy and lack of access to basic information, the caste system is a curse to the Bhatipara fishing community. It precludes their occupational mobility and also limits employment alternatives.

Age and family members

The Bangladesh Bureau of Statistics (BBS, 1998) reported that fishing households in Bangladesh have higher family size than the national average. From the interviews it was found that 14 fishermen (45.16%) were below 30 years old, 7 fishermen (22.58%) were between 30 and 39 years, and the remaining fishermen (32.26%) were more than 40 years old (Fig. 6). It is expected that the size of a family, be it in a fishing, farming or any other sector, depends on the type of family prevailing in that community. In contrast to the joint and extended families of many other disadvantaged groups of the country, a nuclear family is the predominant family type in the Bhatipara village with few joint families, mostly among the well-off fishermen. Since nuclear families have fewer members, the fishing community of Bhatipara has a relatively small average family size. The families of fishermen are generally small, averaging 4.56 persons in a single family. They are well aware of the family planning procedures. The field workers of BRAC visit the village regularly and counsel them in various aspects of family planning and maternity care. The rate of contraceptive use among couples is 60%. In most cases, the females use oral contraceptives. Almost all male members over 16 years of age are engaged in fishing. Women also help the fishermen by making and repairing nets etc. Aside from this, they are also engaged in the maintenance of the house, collection of firewood and various income-generating activities like livestock and poultry rearing, fried rice preparation, etc. to supplement the household income. The authority of women in households, their freedom of movement, their economic, educational and other opportunities are not at all satisfactory and they have a much lower status than that of the men in the social hierarchy.

Age structure

The village suffers from population pressure, which is evident from the disproportionate concentration of population at the bottom of the population pyramid. Based on sex ratio, there are more females than males within the lower age groups. The percentages of male and female children below 15 are 14.04 and 28.07, respectively. On the contrary, the top age groups are predominantly occupied by males. The percentage of male above 50 is 7.9 while the female representation in the 50+ age groups is only 0.88% (Fig. 6). One interesting result that emanated from the collected data is that the percentages of male and female are exactly similar for the active age groups i.e., from 15 to 19 and 55 to 59 yr age groups (Fig. 6). The higher percentages of female children over the males in the bottom age groups gradually decrease in the following age groups and bring about a balance between male-female ratio in the active age groups. Presumably, the child-marriage of the female children and their emigration thereafter from the village to their husbands' villages brings about the balance.

On the other hand, the smaller representation of females in the old age groups is due to the lower life expectancy rate of females than males, which is

a common scenario in the population pyramid of under-developed countries. Pregnancy mortality and gender disparity in nourishment and health care facilities may be responsible for this trend.

Age at marriage and marital status

One of the fundamental demographic characteristics occurring in a densely populated country like Bangladesh is early marriage, particularly for the females. The hypothesis has been empirically supported by our findings in the selected fishing community as well. It appears from the study that the average age groups for marriageable members according to sexes are 10 to 14 yr age group for females and 20 to 24 yr age group for males. The higher rate of early marriage of the female sex is partially due to the lack of social security for the female children, because they are vulnerable to sexual abuse and assaults. The traditional intracaste matrimonial system in the Hindu community is also responsible for this. Dowry demand exists from ancient times as a well-known matrimonial custom in traditional Hindu communities and the Bhatipara fishing community is no exception.

Literacy and education

From the survey, 23 fishermen (74.19%) were found to be illiterate and cannot write their names, 4 fishermen (12.90%) were semiliterate who only can write their names and rest of the fishermen (4 fishermen, 12.90%) had received education up to primary level (Fig. 7). The literacy rate of the womenfolk is even less. About 80% of the children complete primary level education (class-5) while the rest (20%) drop out before completing primary education. Only 5% of the children who complete class-5 level of education get admitted into secondary schools. None of the fishermen had received a secondary level of education. The literacy rate is being defined as the percentage of people having minimum exposure to some years of education at primary level. Rahman (1994b) noted that in Bangladesh most of the fishermen are illiterate and a few

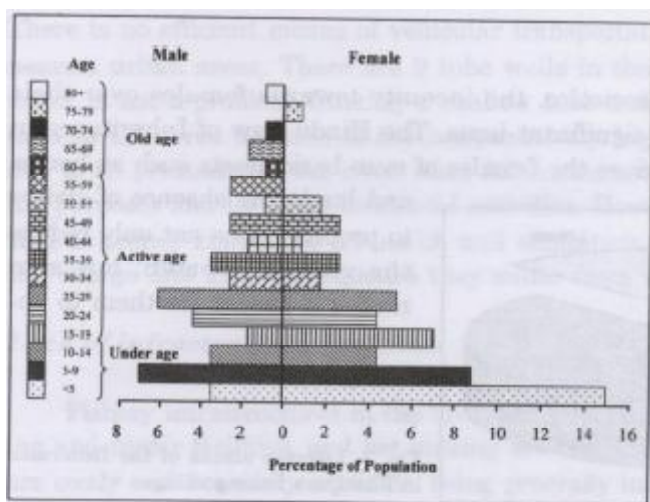


Fig. 6. Age structure of Bhatipara fishing community

had primary level education. It was revealed from the study that most of the fishermen want their children to receive education so that they can have a better job and thus improve their social and economic status. But often they cannot help but pull their children out from school and engage them in fishing to support the family.

Gender disparity

The fishing village can be characterized by deep unequal sharing of adversities between women and men. Gender inequality is prevalent in every sphere of life in the village. Biases prevail between sexes in nourishment, ownership of properties, household responsibilities, education and access to basic facilities.

UNEQUAL ACCESS TO FOOD

The female children were found to be more nutritionally deprived than the boys. Although at birth, girls are no more undernourished than boys, the society's unequal treatment and discrimination between male and female children makes the undernourishment of girls over boys a common phenomenon in this traditional fishing society. The psychological ground for son preference is that the boys will grow up to join them in fishing and earn money for them while the girls will gradually get older only to add to their responsibilities and burden. Moreover, due to lack of nutritional knowledge, they think that male children require more nutrition than females. More over, the girls get married mostly between 10 to 15 years. After marriage they are encumbered with such an amount of responsibility in their own household, husband, children and other relatives in the husband's house, which is not at all commensurable to their physical or mental maturity. They usually have their meal after feeding everybody in the family. This practice, which they observed from their mothers, is largely responsible for the maternal undernourishment and the consequent low birth weight of their children.

OWNERSHIP INEQUALITY

In traditional Hindu societies, the inequity towards females over their ownership of property is a significant issue. The Hindu Law of Inheritance in Bangladesh completely deprives the females of even basic assets such as homes and land. The absence of claims to property does not only reduce the voice of women, but also makes it harder for them to en-

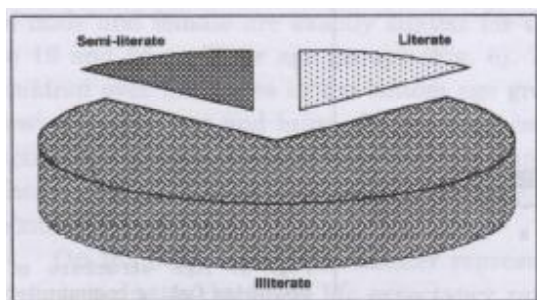


Fig. 7. Literacy status of the fishermen in Bhatipara fishing village

gage and eventually prosper in commercial, economic and even some social activities (Shen 2001).

HOUSEHOLD INEQUALITY

The family arrangement in the village is invariably unequal in terms of sharing the burden of housework and childcare. The males remain engaged in fishing and nonfishing activities for 8 to 10 hours a day, while the housewives are busy for almost 15 hours a day, on the average, maintaining the entire household. Even then, the society shows utmost reluctance to recognize their selfless sacrifice to the family. Rural women in Bangladesh have long been an unrecognized contributor to economic productivity (Ahmed et al. 1996). A housewife may often be subjected to physical punishment by the husband for minor faults or squabbles. Even if housewives earn some money through income-generating activities like poultry raising, milk cow rearing etc., in many cases, they do not possess the freedom to spend the money for themselves or even for something of their own choice.

EDUCATIONAL INEQUALITY

Girls have far less opportunity of schooling than boys. Two males were found in the village who had achieved a secondary level of education for some years although they did not complete it. The fishermen have a positive attitude about educating their male children. But female education beyond primary level is still unthinkable among the fishermen. It is largely due to early marriage and lack of social security for female children.

Health and sanitary conditions

The present study reveals that fishermen have been facing severe health and sanitary problems. There is no medical facility in the fishing village. Therefore, people often suffer from diarrhea and other diseases. The nearest health center is at Shambhuganj, which is about 4 km from the village. There is no efficient means of vehicular transportation from the village to the nearest urban areas. There are 9 tube wells in the village, so fresh drinking water is not a problem. Sinking a shallow tube-well costs only a few hundred taka in this area because of the comparatively high sub-surface water table due to its proximity to the river. Most fishermen use tube-well water for drinking purposes and for other household activities. However, the fishermen are devoid of proper knowledge on health and sanitation. There were no latrines in the village and as a consequence they suffer from various infectious diseases.

Lack of infrastructure facilities

Fishery infrastructures in the area such as definite landing site, boat building and repair facilities, and net making are still absent. Moreover, fishing nets are costly and not easily available, being generally imported from India. There is

no infrastructure facility for marketing, transporting, electricity, etc. The lack of infrastructure facilities strongly affects fishermen as well as fishery development in the area. The village is connected to the nearest town (4 km far) by a dirt road, which becomes unusable during the rainy season. There is a primary school in the village. The nearest secondary education facility is at Shombhuganj, 4 km away from the village. The nearest health care and maternity facilities are also at Shombhuganj.

Constraints in the fishing community

Socioeconomic constraints such as population pressure, low income, illiteracy, low economic status and lack of alternative employment opportunities are the main problems for riverine fisheries development. These socioeconomic factors are affecting riverine resources. Fishermen are also facing problems on child education, cooking fuel, animal feed and house building materials. Almost all fishermen mentioned lack of capital and the declining trend in natural fish population as their main problems. The fishermen of Bangladesh are socially disadvantaged and lacking in fulfilling their basic needs (DFID 1997). According to Rahman (1994a), fishermen were below the poverty line and were struggling to survive, with health, nutrition, sanitation, water supply, soil fertility, cooking fuel, animal feed and house building materials as their day-to-day problems. They have no access to the national electronic media because, surprisingly enough, no radio or television set was in possession by any of the fisherman in the entire village.

Disaster management

The village becomes inundated by floodwater almost every year during the rainy season. This causes serious problems by disrupting road communication with the town and by spreading various infectious diseases. In recent years, the rainy season often comes late. As a result, breeding activities and spawning success of various fish species are greatly hampered. This, in turn, results in poor recruitment of fish to the stocks and subsequent scarcity of fish for catching. This compounds the fishermen's hardship.

Potential management options

It is often suggested that fishery regulation can conserve the natural biodiversity and improve the livelihood of the fishermen by increasing catch rates at the same time. However, the fishermen of the Bhatipara fishing village are living in such extreme poverty and distress that any effort to regulate fisheries will have a high social cost, further endangering the survival of the marginalized and poorer fishermen.

Streamlining the fish and fry marketing channels may increase income and thereby reduce the grave inequality in income distribution among the marginal and nonmarginal fishing households.

Most of the fishermen expressed their desire to diversify their fishery-related activities. The physico-chemical conditions of the Old Brahmaputra

River water are suitable for aquaculture. Therefore, cage aquaculture in the river may be an economically viable option for the fishermen. If the inputs like cage netting and cage structure are supplied effectively along with the provision of proper financial, technical and social support, the fishermen will hopefully be able to generate good surplus income through cage aquaculture and thus improve their livelihood. This will have a good impact on the capture fisheries, too because it will obviously lessen the fishing pressure on the natural stocks.

Participatory approach may be a useful technique in the management of the socioeconomic condition and the biological resources around the Old Brahmaputra River in a sustainable way. This will confirm the participation of the poor fishermen in the management of the resources and detect the prospects and problems in achieving a sustainable livelihood pattern for the whole community. This can be developed by placing the Old Brahmaputra River under the Community – Based Fisheries Management Program, practiced in some parts of the country since 1993 (Rahman et al. 1996). Under this program, the river will be divided into a number of management units along its stretch and this will involve the riparian fishing communities.

Conclusion

Fishery management in the riverine capture fishery sector must now be considered from a socioeconomic perspective for the conservation and restoration of the openwater ecosystem. The traditional fishing communities are important components of this ecosystem. There are several ethnic groups, both Hindu and Muslim communities, in Bangladesh who traditionally engage in fishing as their full time occupation such as the Barman, Halder, Rajbangshi, Jaldash, Kaibarta, Mosforaes (Muslim) etc. The problems faced by the traditional fishing communities throughout the country are more or less similar. It is essential to improve the socioeconomic conditions of the fishermen with financial support through increased availability of credit, raising the standards of living, health and sanitary conditions, housing condition, children's education, drinking water facilities and alternative employment opportunities during off-fishing season etc. Moreover, fishermen should be provided with training and technical support through different government and nongovernment organizations. The authors are hopeful that the concerted efforts of government organizations, NGOs and different aid agencies will help the traditional fishing communities, scattered throughout the country, to uplift their low social status, meager economic condition and poor health.

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