Research in
ISSN : P-2409-0603, E-2409-9325
AGRICULTURE, LIVESTOCK and FISHERIES
An Open Access Peer Reviewed Journal

Open Access **Res. Agric. Livest. Fish.**
Research Article **Vol. 4, No. 3, December 2017: 229-235**

SOCIO-ECONOMIC STATUS OF FISHERS OF THE OLD BRAHMAPUTRA RIVER IN MYMENSINGH SADAR UPAZILA, BANGLADESH

Imam Sayeda Saberin, Md. Shaheed Reza*, Md. Abul Mansur and Md. Kamal

Department of Fisheries Technology, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh 2202, Bangladesh

***Corresponding author:** Md. Shaheed Reza; E-mail: msreza@bau.edu.bd

ARTICLE INFO

Received
12 December, 2017

Accepted
27 December, 2017

Online
31 December, 2017

Key words
Fishermen
Socio-economic status
Income
Constrains

ABSTRACT

A survey was conducted to assess the socio-economic status of the fishers of the old Brahmaputra River in Mymensingh Sadar Upazila from April 2011 to March 2012. Data were collected from randomly selected 30 traditional fishermen of Kagdahor, Shambhuganj, Kawatkhali, BAU Campus, Shesmor, Sutiakhali, *Char* Kalibari, *Char* Ishwardia and *Char* Nilakshmia using a well-structured questionnaire. The research revealed that besides fishing, the fishers occasionally undertook a variety of non-fishery related activities. The average annual income ranged from 25,000-84,000 BDT which significantly depends on fishing effort, season of the year and market price of fish. Majority of them belonged to age range 15-30 years (59.25%). Almost 63% of the fishermen were illiterate and cannot write their names, while only 14.81% had received education up to primary level. It was also revealed that family size of 60% of the fishermen were medium consisting of 5-7 members while only 10% had small family size of 2-4 members. Despite their low income and large family sizes, 80% of the fishermen were living in semi-constructed houses. Sometimes for coping with adverse situation many of them took loans from different national and local NGOs like BRAC, ASSA. A declining trend of fish resources in the river and lack of working capital were identified as the major constrains for the fishers of the Old Brahmaputra River.

To cite this article: Saberin IS, MS Reza, MA Mansur and M Kamal, 2017. Socio-economic status of fishers of the old Brahmaputra river in Mymensingh sadar upazila, Bangladesh. Res. Agric. Livest., Fish., 4 (3): 229-235.

INTRODUCTION

Bangladesh is blessed with vast and rich fisheries resources in the form of rivers, *beels*, *haors*, *baors*, lakes, ponds, marshland, inundated crop field, estuaries and a part of the Bay of Bengal. There are about 24,000 km length of river and streams, 3.91 million ha inland open water, 0.79 million ha closed water and 16.6 million ha marine water in the Bay of Bengal (DoF, 2016; Rashid, 1991). Among the open water resources, an estimated 0.85 million ha of river and estuarine areas contribute to 4.6% of the total fish production of the country and engages 0.8 million people directly with fishing activities for their livelihood (DoF, 2017).

Fishermen play an important role in fisheries sector. They are, however, regarded as one of the most vulnerable communities in Bangladesh who live below the poverty line. Although total production of inland open water has increased in the recent years, due to environmental degradation, industrialization, over exploitation and increased number of fishers, catch of individual fishers has declined resulting in lower income (DoF, 2016; Alam and Bashar, 1995; Sultana and Thompson, 2007). As a result, livelihood of inland fishers has been affected seriously. Though fishers are the main players in harvesting the fishes with hard labor, their access right to the fisheries resources has always been intervened due to lack of sustainable fisheries management system. Fishermen do not have enough fishing crafts and gears, as a result a good amount of money need to be deposited as hiring charges of the fishing equipment (Alam, 2007; Saberin et al., 2013). As the fishers have a limited alternate job opportunity, they suffer badly during fishing ban and lean fishing period and adopt some sort of coping strategies (Yeasmin et al., 2010). As a result, the natural production of fish is seriously disturbed through over fishing.

The Brahmaputra River is one of the oldest river systems and it is one of three major rivers of Bangladesh. Its major part, known as the Old Brahmaputra River spans its course between the Madhupur Tract and the Barind Tract and presently considered the main flow of the Brahmaputra-Jamuna River System (Mortuza, 2007; Banglapedia, 2015) that flows to the Shitalakshya River and then to the Dhaleshwari and Meghna Rivers, southeast of Dhaka. Available reports suggest that due to the Brahmaputra rushes from India, sometimes it drowns thousands of hectares of cultivable land. Therefore, the floodplain is largely influenced by sedimentation and exhibits gentle morphology composed of broad ridges and depression (Alam et al., 2007). The fishers living in this floodplain has to cope with various natural and man-made problems ranging from water pollution, poverty, illiteracy, lack of employment opportunities etc. Although Kabir et al. (2012) reported the livelihood status of the fisher folks living near *Char* Kalibari, *Char* Gobaida, *Char* Vanga and Nilukhair *Char* of the Old Brahmaputra River, other areas adjacent to the river have not been covered. As livelihood status of the fishers directly influences sustainable use of the open water resources, thus the research has been undertaken to find out the detailed information regarding the livelihood status of fishermen in areas near the Old Brahmaputra River in Sadar Upazila of Mymensingh.

MATERIALS AND METHODS

The study was conducted in Mymensingh Sadar Upazila and covered areas including Kagdahor, Shambhuganj, Kawatkhali, Bangladesh Agricultural University (BAU) Campus, Shesmor, Sutiakhali, *Char* Kalibari, *Char* Ishwardia, *Char* Vanga and *Char* Nilakshmia between April, 2011 to March, 2012.

The data were collected from randomly selected fishermen where three fishermen from each locality were interviewed through well-structured questionnaire. Simple percentages and correlation matrix were calculated to identify relations among different variables using Excel (Microsoft Excel 2007, Microsoft, Redmond, WA).

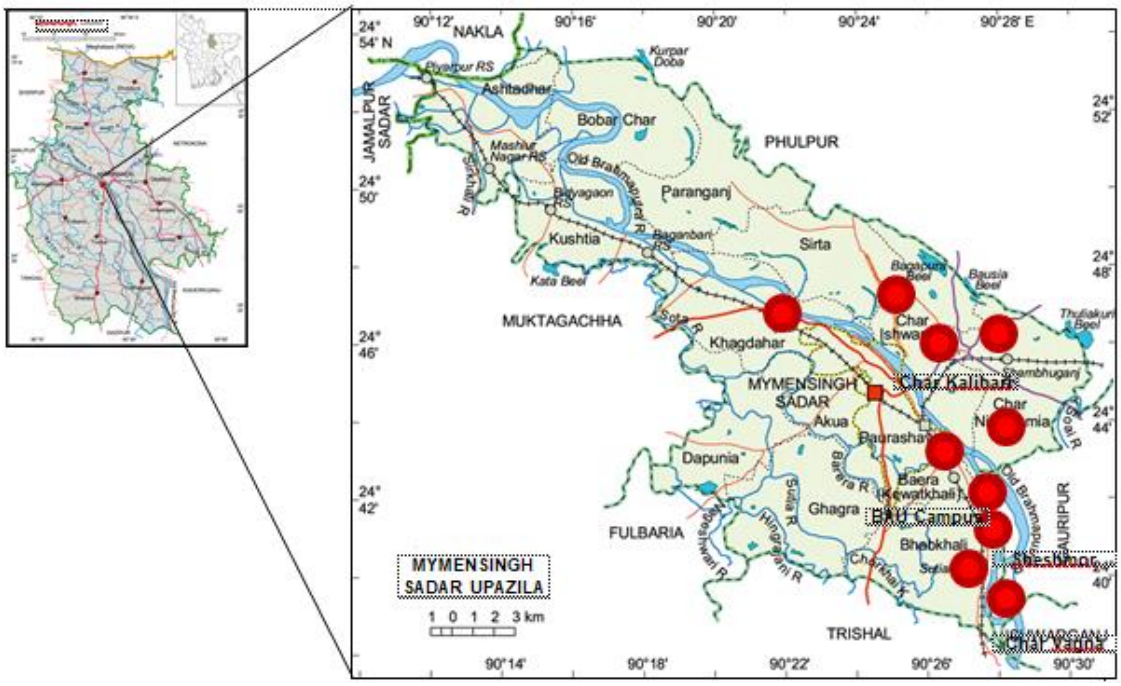

Figure 1. Map showing location of the study area of the Old Brahmaputra River

RESULTS AND DISCUSSION

The data of the study revealed that several livelihood factors were correlated with each other and there were profound relationship of fishermen income with family size and literacy level.

Income and living standard

Fishing was found to be the major and in some cases, the only source of income of the fishermen of the Old Brahmaputra River. Some of the fisher folk occasionally undertook a variety of non-fishery related activities and data are shown in Table 1. Fishery related activities carried out in the village included fish marketing and trading, gear and craft maintenance and repair. There were very limited options for non-fishery related activities such as wage labor in the other sectors like agriculture, livestock and poultry rising. Although the marginal fishermen were also found to harvest fish individually using gears like cast nets, push nets, pull nets etc. group fishing was found to be predominant in the study area. During the fishing season, their daily income increased to some extent and it was observed that their income varied with the fish catching rate, weather condition and market price of fish. However, due to the asymmetric sharing system, income distribution showed significant inequality between marginal and non- marginal fishermen from group fishing.

Table 1. Average annual income of fishermen from fishery and non- fishery related activities

Sources of income	Income per year (BDT)	% of total income
Fish and Fishery related activities Group fishing Fish marketing Net lending	84,000	76.4%
Non –fishing activities Agriculture	25,000	23.6%

Age and family members

The results of age and family structure of the fishers of the study area are shown in Table 2. It was found that majority of the fishermen belonged to the age group 20-30 (~60%) which is in contrast to results obtained for the Old Brahmaputra by Kabir et al. (2012) and for other studies reported for south west region of Bangladesh by Das et al. (2015). This has probably occurred due to inclusion of additional areas adjacent to the Old Brahmaputra River of Mymensingh Sadar Upazila. Interestingly their family structure was found to be mainly large consisting of 5-7 members (60%). Similar results were also reported by Kabir et al. (2012). It is evident that the size of a family be it in fishing, farming or any other sector, depends on the type of family prevailing in that community.

Table 2. Age and family size of the fishermen in the study area

Parameter	Range	% of fishermen
Age		
	20-30 years	59.25
	31-39 years	29.62
	Over 4o years	11.11
Family Size		
	Small Family (2-4)	10
	Medium Family (5-7)	60
	Large Family (8-10)	30

Literacy and education

From the survey, 62.96% fishermen were found to be illiterate with no formal education and cannot write their names while 18.51% were semi-literate who only could write their names and rest of the fishermen 14.81% had received education up to primary level and only 3.70% fishermen had received secondary education (Figure 2). Similar results were also reported for various fisher folks living in different parts of the country (Hossain and Pingali, 1998; Shahjahan et al., 2001).

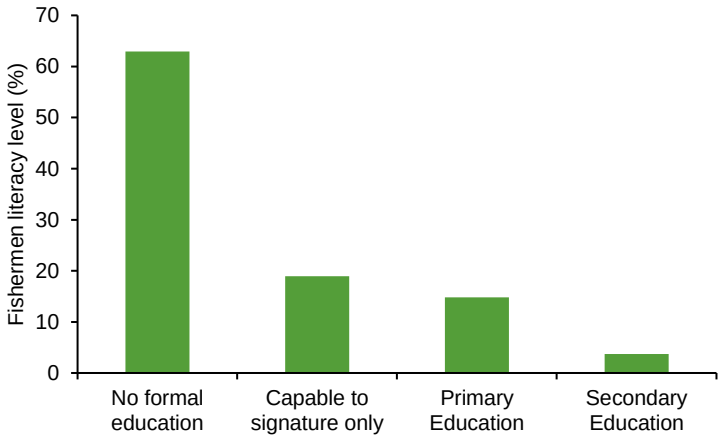

Figure 2. Educational status of the fishers in the study area

Lower level of literacy is a common scenario among the fisher folks of Bangladesh. Rahman (1994a) noted that in Bangladesh most of the fishermen are illiterate and a few had primary level education. It was revealed from the study that most of the fishermen would like their children to receive education so that they can have a better job and thus improve their social and economic status. But they cannot do so as they require helping hand and engage them in fishing to support the family.

Housing condition and sanitary facilities

The landless fishermen constructed temporary huts made of mud and bamboo fencing and roofing of one kind of weed leaves, locally called '*chhan*' on the land of their relatives, neighbors or fellow fishermen. A few semi-permanent structures with corrugated tin roof seen in the village were owned by relatively well-off fishermen. From the survey, it was found that 25% households of the fishermen were tin shed with bamboo. 60% households were tin shed with tin wall. 14% households were containing of straw components and 1% household were containing building (Table 3). Bhuyan and Islam (2016) also reported similar results for fisher folks of Meghan River. Housing conditions were directly related to the sanitary facilities used by the fishers of the Old Brahmaputra River. From the present study it was revealed that 25% fishermen had semi- constructed and 10% of the fishermen had no sanitary facilities (Table 3). Lacking of sanitary facility also found in the study area.

Table 3. Housing condition and sanitary facilities of the fishermen in the study area

Parameter	Range	% of fishermen
Housing condition		
	Tin shade with bamboo structure	25%
	Tin shade with tin structure	60%
	Straw component	14%
	Brick building	1%

Sources of income

Three types of fishermen entitled as professional, occasional and subsistence fishermen were found. The average annual income of professional, occasional and subsistence fishermen were BDT 13,400, 18,000 and 20,000, respectively (Table 4).

Table 4. Sources of income of fishermen in the study area

Types of fishermen	Income (BDT)					
	Fishing	Agriculture	Day- labor	Small trader	Fish sale	Total
Professional	8,400	-	-	-	5000	13,400
Occasional	10,000	2000	6000	-	-	18,000
Subsistence	4000	10,000	-	6000	-	20,000

Occupational status

Most of the fishermen around the old Brahmaputra river area were involved in fishing as their main occupation. However, some were also engaged in agriculture and day laborer. The present study has revealed that 70% of fishermen are engaged in fishing as their main occupation, 10% was in agriculture and 20% in daily laborer as in sand lifting from river bottom (Figure 3).

Credit access issues

National and local NGO like BRAC, ASSA provide credit only to the organized poor members who form 2-3 member groups for purchase fishing gears and boats. They have taken loan at 15% interest from ASSA and BRAC, 12% interest from landlord. This interest rate varies from season to season. 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. After repayment only 36% became self-sufficient who did not need financial help but 12% borrowed money from their neighbors,15% from relatives, 30% from NGOs and 7% from co-operatives for maintaining their fishing business. Bhuyan and Islam (2016) reported 45% fishermen took loan from various co-operative societies while only 12% took loan from NGO possibly linked with various formalities difficult to be met by the fishermen concerned.

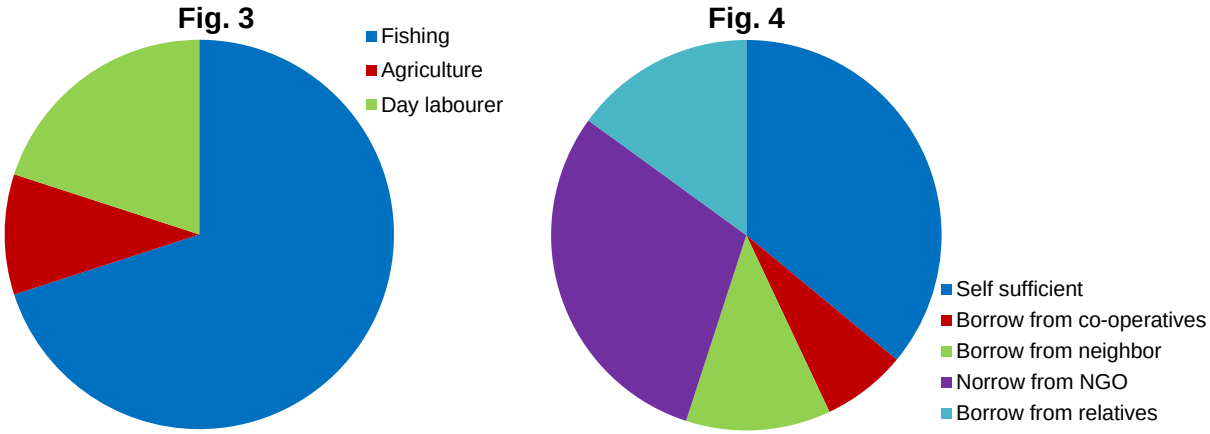

Figure 3. Occupational status of the fishers in the study area; **Figure 4.** Sources of credit facilities of the fishers in the study area

Constraints of the fishing community

Household family pressure, low income, illiteracy, low economic status and lack of alternative employment opportunities are the main problems for riverine fisheries development. These socio-economic factors are, in general, affecting riverine resources throughout the country (Nesar et al., 2013). Fishermen are also facing problems on child education, nutrition, 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 1998). According to Rahman (1994b), 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. Nesar et al. (2013) proposed adoption of the socio-ecological system with active community participation of resource management and collaboration amongst key stakeholders to produce positive livelihood outcomes for the fishers of the Old Brahmaputra River in Mymensingh region. This approach can be adopted in this region for betterment of livelihood status of the fishers.

CONCLUSION

Socio-economic condition of the fishers of the Old Brahmaputra River has been assessed. Government and different NGOs should take initiative for alternating income generating activities for fishermen during ban and lean fishing period. An awareness/training program should be extended to fishers to create an awareness of the factors affecting the fisheries resources and the rationale for the restrictions on a particular fishing gear in a particular season. A community participation in the management of the resource base and collaboration amongst key stakeholders can also improve livelihood status of the fishers of the Old Brahmaputra River in Mymensingh region.

REFERENCES

1. Alam AKMN, 2007. Participatory Training of Trainers-A New Approach Applied in Fish Processing. Bangladesh Fisheries Research Forum, Dhaka, Bangladesh 326.
2. Alam JB, M Uddin, JU Ahmed, H Cacovean, MH Rahman, BK Banik and N Yesmin, 2007. Study of morphological change of old Brahmaputra river and its social impacts by remote sensing. Geographia Technica, 2: 1-11.

3. Alam MF and MA Bashar, 1995. Structure of cost and profitability of small scale riverine fishing in Bangladesh. Journal of Research Progress, 9: 235-241.
4. Ali H, MAK Azad, M Anisuzzaman, MMR Chowdhury, M Hoque and MI Sharful, 2009. Livelihood status of the fish farmers in some selected areas of Tarakanda upazila of Mymensingh district. Journal of Agroforestry and Environment, 3: 85-89.
5. Banglapedia, 2015. Banglapedia: National Encyclopedia of Bangladesh (Second ed.), Asiatic Society of Bangladesh. Revised Second Edition.
6. Bhuyan S and S Islam, 2016. Present status of socio-economic conditions of the fishing community of the Meghna river adjacent to Narsingdi district, Bangladesh. Journal of Fisheries Livestock Production, 4: 192-196.
7. Das MR, S Roy, U Kumar, S Begum and SR Tarafder, 2015. Livelihood assessment of the fishermen community in the south west region of Bangladesh. Journal of Experimental Biology and Agricultural Sciences, 3: 353-361.
8. DFID, 1998. Sustainable livelihoods guidance sheets, Department for International Development (DFID), London, UK.
9. DoF, 2016. Jatiya Matshya Saptah. Department of Fisheries, Government of the People's Republic of Bangladesh.
10. DoF, 2017. Jatiya Matshya Saptah. Department of Fisheries, Government of the People's Republic of Bangladesh.
11. Henry GT, 1990. Practical Sampling. SAGE Publications, Newbury Park, CA, USA.
12. Hossain M and PL Pingali, 1998. Rice research, technological progress and impact on productivity and poverty: an overview. In: Pingali P, Hossain M (eds.) Impact of Rice Research. Proceedings of the International Conference on the Impact of Rice Research, Bangkok. Thailand: Thailand Development Research Institute and Los Benos (Philippines) and IRRI: 1-2.
13. Kabir KMR, RK Adhikary, MB Hossain and MH Minar, 2012. Livelihood status of fishermen of the old Brahmaputra river, Bangladesh. World Applied Sciences Journal, 16: 869-873.
14. Mortuza MR, US Rashid, MA Rajib and MM Rahman, 2007. Temporal Variation Characteristics of Flow and Water Level in the old Brahmaputra river. In: Report on Climate Change Project No. BUET 20/11 GPN 12, p. 39.
15. Nesar A, S Rahman and SW Bunting, 2013. An ecosystem approach to analyse the livelihood of fishers of the old Brahmaputra river in Mymensingh region, Bangladesh. The International Journal of Justice and Sustainability, 18: 36-52.
16. Rahman AKA, 1994a. Country report on socio-economic issues in coastal fisheries management in Bangladesh. In: Socio-economic Issues in Coastal Fisheries Management, Proceedings of IPFC Symposium, Bangkok, Thailand, 23-26 November 1993. FAO Indo-Pacific Fishery Commission, No. 8. pp. 170-175.
17. Rahman AKA, 1994b. The small-scale marine fisheries of Bangladesh. In: Socio-economic Issues in Coastal Fisheries Management. Proceedings of the IPFC Symposium, Bangkok, Thailand, 23-26 November 1993; FAO Indo-Pacific Fishery Commission (IPFC), No. 8. pp. 295-314.
18. Rashid H, 1991. Geography of Bangladesh (Second Revised Edition), University Press Limited, Dhaka, Bangladesh 529.
19. Saberin IS, MS Reza, NJ Ayon, M Kamal, 2013. Estimation of size selectivity of fish species caught by different gears in the old Brahmaputra river. Journal of Bangladesh Agricultural University, 11: 359–364.
20. Shahjahan M, Mi Miah and MM Haque, 2001. Present status of fisheries in the Jamuna river. Pakistan Journal of Biological Sciences, 4: 1173-1176.
21. Sultana P and PM Thompson, 2007. Community based fisheries management and fisher livelihoods: Bangladesh case studies. Human Ecology, 35: 527–46.
22. Yeasmin T, MS Reza, MNA Khan, FH Shikha and Kamal, 2010. Present status of marketing of formalin treated fishes in domestic markets at Mymensingh district in Bangladesh. International Journal of Bioresearch. 1: 21-24.