

Fish species availability and socio-economic conditions of fishermen of the Bergobindopur baor, Jashore, Bangladesh

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Abstract. A study was conducted to investigate fish species availability and socio-economic conditions of fishermen of the Bergobindopur baor of Jashore district, Bangladesh. Data were collected from 30 fishermen of the baor through questionnaire interviews and focus group discussion. Various indigenous fish like rui, punti, tengra, shol, ayre, chital, mohashol and a few exotic fish like tilapia, silver carp, common carp, and grass carp are available in Bergobindopur baor. Prices of fishes varied from species to species but high priced fish were mohashol, chital, and shol. Kochal jal, net jal, and hela jal are used for fishing. A large portion of fishermen (70%) were Hindu, almost all were male (96%), married (91%) and middle aged (55%). Both joint and nuclear families were found among the fishermen. Yearly income of the maximum fishermen was between Tk. 31000 and Tk. 50000. Non-constructed houses were more abundant (88%) and majority (61%) had electricity facilities. All fishermen used tube well water, sanitary latrines and took allopathic (80%) treatment which indicated positive signs for health condition. Through fishing, their socio-economic condition had improved. About 60% fishers had bank accounts and all sent their children to school as well as farmed cattle. However, the fishers faced some problems like lack of sufficient boats and gears, transportation problems, inadequate training facilities, lack of financial supports, lack of awareness etc. Therefore, more institutional, organizational, technical and credit supports are required to minimize their difficulties and ensure their socio-economic betterment and sustainable livelihoods.

Keywords: Fish species, Socio-economic condition, Fishermen, Bergobindopur baor

Introduction

Bangladesh is blessed with a great potential of fisheries and aquaculture (Rahman 1994). Fisheries sector plays important role in combating mal-nourishment, earning foreign currencies and creating employment opportunities in Bangladesh. This country has huge water bodies in the form of river, canal, haor, baor, beel, reservoir, ponds, tanks, seasonally flooded areas and Bay of Bengal. Among these, baor (also known as ox-bow lake) is an important aquatic resource for fish culture. There are six hundred baors in four greater districts of Jashore, Faridpur, Khulna and Kustia (Biswas 2008). Jashore is famous for a huge number of baors and Bergobindopur baor is one of the most eminent baors located in the Chaugachha upazilla under the district of Jashore. Total surface area of this o-shaped baor is 247 hectare and average water depth is 16 feet with the maximum depth of 49 feet. Bergobindopur village is situated at the middle point of this baor just like an island, where most of the people depend on fishing from the baor for their livelihoods. But the fish biodiversity and socioeconomic status of fishermen of the Bergobindopur baor is yet to be known, although some literature exist on some other baors of Bangladesh. Therefore, the present study was undertaken to explore the fish biodiversity with

their average prices, to identify the fishing activities as well as socio-economic condition of the fishers at the Bergobindopur baor.

Materials and Methods

The study was conducted at Bergobindopur baor in Chaugachha upazilla of Jashore district, Bangladesh (Fig.1) during September to December, 2018. The study was based on collection of primary and secondary data. The primary data were collected from randomly selected 30 fishermen of the baor through questionnaire interviews and focus group discussion (FGD). Secondary data were collected from the baor manager (directed by DoF), upazilla fisheries officer etc. Cross-check interviews were also conducted to clarify or verify the information. All the collected data were accumulated and analyzed by MS-Excel and then presented in textual, tabular and graphical forms to understand the available fish species, fishing activities and to find out as well as evaluate the socio-economic status of fishermen of the studied area.

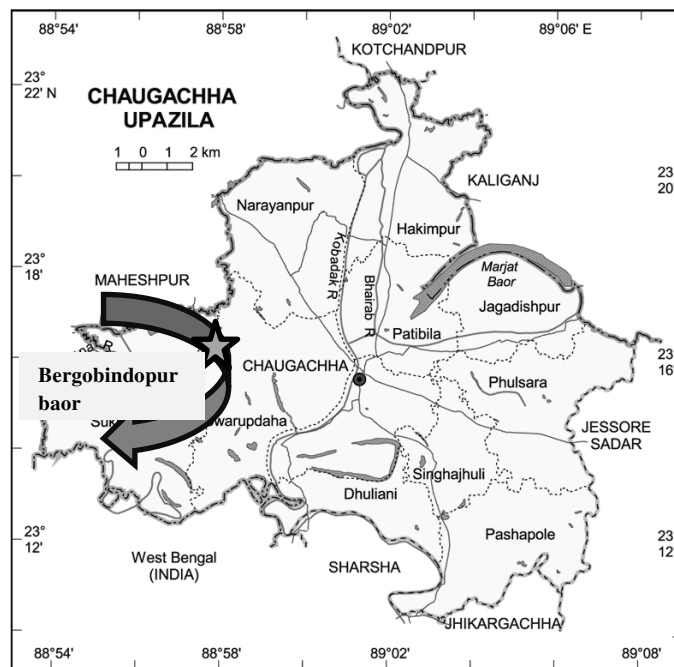


Fig. 1. Location of the study area.

Results and Discussion

Fish species availability with their price: Various fish species were found in the Bergobindopur baor. Indigenous species included rui, catla, mrigal, calbaus, punti, tengra, shol, chital, ayre, mohashol, and exotic fish included tilapia, silver carp, common carp, grass carp, and Thai sarpunti (rajputi), which supported the study in Sibsa river (Islam *et al.* 2015). In the study area, different fish had different prices but high priced fish were mohashol, chital, ayre,

tengra, shol (Table I). Rabbani (2007) found rui, catla, mrigal, and silver carp as high priced fish in karotoa river. Therefore, Bergobindopur baor is more diversified with fish.

Table I. Available fish species in the Bergobindopur baor

Fish species	Scientific name	Availability	Fish price (Tk)
Rui	<i>Labeo rohita</i>	Abundant	220-250
Catla	<i>Catla catla</i>	Abundant	180-200
Mrigal	<i>Cirrhinus mrigala</i>	Abundant	180-190
Calbaush	<i>Labeo calbasu</i>	Abundant	180-200
Mohashol	<i>Tor tor</i>	Rare	1500-1600
Chital	<i>Notopterus chitala</i>	Rare	600-700
Bata	<i>Labeo bata</i>	Rare	210-230
Sarputi	<i>Puntius sarana</i>	Abundant	180-200
Punti	<i>Puntius</i> spp.	Abundant	220-250
Ayre	<i>Sperata aor</i>	Rare	400-450
Tengra	<i>Mystus vittatus</i>	Abundant	400-500
Shol	<i>Channa striatus</i>	Abundant	400-500
Common carp	<i>Cyprinus carpio</i>	Abundant	180-200
Silver carp	<i>Hypophthalmichthys molitrix</i>	Abundant	120-140
Grass carp	<i>Ctenopharyngodon idella</i>	Abundant	110-120
Tilapia	<i>Oreochromis mossambicus</i>	Abundant	110-130
Rajputi	<i>Puntius sophore</i>	Abundant	100-120

Gears used for fishing and fish transporting system: Different nets were used for fishing like – Kochal jal, Thela jal, Net jal etc. Kochal jal were the most used net (65%) for fishing followed by Thela jal (25%) and Net jal (10%) (Table II). The selection of these nets might depend on the financial capacity of the fishermen. Ahamed (1996) also observed to use different nets such as- lift nets, cluster hooks, hand lines in kaptai reservoir. In the study area, fish transporting systems were not improved. After catching, fish were graded depending on size and kept in a big barrel or pot with water. Most of the fishers (75%) transported fish by local vehicles like –van, cycle, nosimon, korimon etc. and sometimes a few fishers (25%) transported their fish by some larger vehicles like truck, pick-up (Table II). This might be due to reduce cost. Islam and Hossain (2013) observed to use many local vehicles in Northwest Bangladesh, which coincided with the present study.

Table II. Fishing gears and transportation activities of the fishermen

Fishing activities	Type	Percentage of respondents (%)
Gears used for fishing	Kochal jal	65
	Net jal	25
	Thela jal	10
Fish transporting system	Local small vehicles	75
	Larger vehicles	25

Socio-economic condition of fishermen in Bergobindopur baor

Age group, sex, marital status, and family type: In the study area, maximum fishermen (55%) were within 36-50 years of age. However, 35% and 10% of fishermen belonged to age group 21-35 and 51-65 years respectively (Table III). Ahamed (1996) in Tangail and Ahamed (1999) in coastal region observed similar results. Majority fishermen (96%) were male and a very few (4%) were female. The study revealed that a majority of the fishermen (91%) were married while the unmarried fishermen represented only 9% of the respondents. Around 39% fishermen lived in joint family and other 61% lived in nuclear family (Table III). A very few women were involved in fishing because generally women might be involved in household works and could not afford to go out for fishing in a large scale due to social problems. About 88% married fishermen was observed by Reza *et al.* (2015) in Dinajpur, which favored the present finding. The fishermen also lived in joint family as well as nuclear family at almost equal proportions in the study of Rokanuzzaman (2004), which supported the present finding.).

Table III. Socio-economic condition of fishers of the study area

Socio-economic characteristics	Category	Percentage of respondents (%)
Age	21-35 years	35
	36-50 years	55
	51-65 years	10
Sex	Male	96
	Female	4
Marital status	Married	91
	Unmarried	9
Family type	Nuclear family	61
	Joint family	39
Religion	Muslim	30
	Hindu	70
Yearly income	< 10,000 BDT	10
	10,000-30,000 BDT	25
	31,000-50,000 BDT	60
	> 50,000 BDT	5
Having banking account	Banking account	60
	No banking account	40
Cattle/goat farming	Cattle farming	92
	No cattle farming	8
Nature of treatments	Allopathic	80
	Homeopathic	17
	Kabiraj	3

Religion: Seventy percent of the fishermen were Hindu and 30% were muslim (Table III). This finding was opposite to the study of Chantarasri (1994) in Sundarbans Reserve Forest and slightly related with the study of Ahamed (1996) in Tangail.

Income from fishing, banking account and, additional income through cattle farming: Average yearly income of the maximum fishermen (60%) in this study area was found between 31,000 and 50,000 BDT. Contrariwise, around 10% fishers earn <10,000 BDT, 25% earn

10,000-30,000 BDT and only 5% earn > 50,000 BDT in a year (Table III), which indicates that most of the fishers might be moderately well-off. These results were more or less similar to the finding of Hossain (2008). Fishermen had no banking accounts before being involved in fishing. But after starting fishing from the baor, maximum fishers (60%) opened banking accounts for deposition of money and consequently they were well-to-do, although still some fishermen (40%) had no banking accounts (Table III). This indicates that the socio-economic condition of the Bergobindopur baor became gradually improved through fishing. The study showed an encouraging picture regarding ownership as well as rearing of livestock and poultry by the fishermen community, which was almost similar with the finding of Shahin (2008). In addition to fishing, 92% fishermen in the study area possessed cow/goat/hen/duck as a source of additional income (Table III).

Nature of treatments: About 80% of fishermen took allopathic, 17% received homeopathic and only 3% took kabiraji treatment, whereas Ali *et al.* (2010) found opposite features in Mymensingh. That means the fishers in Bergobindopur baor were very careful about their health (Table III).

Housing, sanitary facilities, drinking water, and electricity facilities: The housing condition is one kind of indicator of economic status. The study revealed that 88% of fishermen's housing structures were Kacha and houses of only 12% were semi-pacca (Fig. 2). Most of the fishermen (70%) used semi-pacca latrines where only 30% fishers used kacha latrines (Fig. 2). All the fishermen used tube well water for drinking purpose. Among them, about 80% had own tube well and rest 20% collected drinking water from neighbors' tube-wells. About 61% fishermen had electricity facilities where rest 39% fishermen didn't get the facilities (Fig. 2). The housing structures of fishers in the study area were more or less similar to that reported by Shamima (2000) and Ahamed (1999), whereas the sanitary facilities in Tangail (CPP, 1996) were better than that of Bergobindopur baor community. The drinking water facilities of Bergobindopur fishers was just opposite to the finding of Ahamed (1999) who found to drink pond water in coastal area. Moreover, the present study exceeded the finding of Shamima (2000) in Gallamary fishing community, Khulna in terms of electricity facilities of fishers.

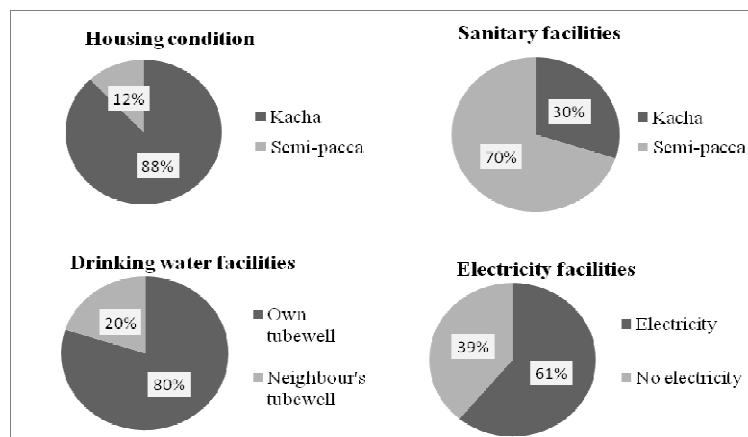


Fig. 2. Socio-economic status of fishermen in Bergobindopur baor.

Constraints of the fishermen: In the study area, a number of constraints for fishermen were reported including lack of initiatives, awareness, leadership, unity as well as boat and gears, fish biodiversity reduction, fish transportation problem, inadequate training, having no control over fish market etc. The socio-economic constraints of fishermen in the study area were more or less similar to the finding of Saha (2004).

Conclusions

Fishing plays a vital role in uplifting the socio-economic condition of Bergobindopur baor of Jashore district as it is the opportunity for earning money and alleviating poverty of large number of population. At present, loss of biodiversity is alarming in Bergobindopur baor. If the government would take necessary steps to conserve fish biodiversity through excavating bed and dredging bottom mud, implement fishing regulations, increase awareness, arrange sufficient boats and gears as well as adequate training facilities for fishermen, more profitability would be reflected. Thus it can be concluded that fishing from the Bergobindopur baor can help the fishermen to improve their socio-economic conditions.

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