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Alternative Livelihood Options of Fishermen of Nijhum Dwip under Hatiya Upazila of Noakhali District in Bangladesh

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ABSTRACT

The study was conducted to investigate the alternative livelihood opportunities available and accessible to the fishermen community of Nijhum Dwip under Hatiya Upazila of Noakhali district in Bangladesh. Primary data were collected through household survey using PRA tools such as Focus Group Discussion (FGD) and Crosscheck Interviews (CI) with key informants. The fishers were classified as boat owner-fisher (8%), laborer fisher (60%), fishers engaged in fish drying (18%) and others involved in fishing related occupations (14%). In recent time, fishers' household income was limited as the highest number (46%) of the fishers' annual income ranged between 50,000 and 75,000 BDT and the fish resources was decreasing for that supplementary income from other than fishery was of great importance. The most common Alternative Livelihood Generating Activities (ALGAs) identified by the fishers were: poultry (22%), livestock (21%), crop farming (19%), boatman (13%), non-farm day laborer (9%), small business (6%), handicraft/swing (5%), crab catching and fish farming (1%) and others (3%). Depending on high potential to increase income and high potential to increase market demand, a matrix of relative attractiveness of existing livelihood activities and alternative livelihood activities was developed.

Key words: Alternative livelihood, fishermen, Nijhum Dwip, constraints

INTRODUCTION

Fisheries sector, which is one of the most important sectors of Bangladesh, plays a significant role in food consumption, nutrition, employment, export and the socio-economic development of the country. This sector has a contribution in national GDP (3.74%), foreign remittances (2.7%) and in the national animal protein consumption (58%) (DOF, 2011). Fisheries sector of Bangladesh creates the opportunity of direct and indirect livelihood of about 12 million people (DOF, 2011). In terms of number of fish species and its abundance, our fisheries resource is one of the largest and diversified natural resources of the world. There are 260 freshwater species (Rahman, 1989) and 475 marine fish species (Hussain and Hossain, 1999) available in Bangladesh.

Fishermen are deprived of many amenities of life and consisted as one of the most vulnerable communities in Bangladesh. Over the years, their economic condition had further deteriorated. Their average per capita annual income is BDT 2,442 i.e., about 70% lower than the per capita income of the country as a whole (Alam and Bashar, 1995). Being an isolated community, fishermen are deprived of many amenities of life.

Livelihood can be defined as the capabilities, the assets (natural, physical, human, financial and social capital), the activities and the accesses to these (mediated by institutions and social

relations) that together determine the living gained by the individual household (Chambers and Conway, 1992). According to them, a livelihood can be sustainable when it has the ability to cope with and recover from stresses and shocks and maintain or improve its capabilities and assets both now and in future, but not undermining the natural resource base. For sustainable development and poverty alleviation, different approaches had been adopted and the sustainable livelihood approach had been gradually expanded with its own core and principles for poverty focused development activities (DFID, 1998). A sustainable livelihood is based on the development to improve the progress in poverty elimination by assessing the appropriate objectives, scope and priorities (Scones, 1998).

Nijhum Dwip in Hatiya Upazila under the Noakhali district is one of the most important islands of Bangladesh where 8,000 fishermen live. However, socioeconomic status of this island's fishermen is not satisfactory. Fish production of this area is also declining day by day (Islam, 2009). Considering the above stated fact, the current study was, therefore, designed to investigate the alternative livelihood opportunities available and accessible to the fishermen community of Nijhum Dwip Island.

MATERIALS AND METHODS

Study area: The present study was carried out on the fishermen community of Nijhum Dwip Island (Fig. 1) in Hatiya Upazila under Noakhali district in Bangladesh during the period between 20 February and 19 June, 2010.

Collection of data: The study was based on collection of primary and secondary data. Before collecting the primary data, a draft questionnaire was developed which was pre-tested with a few fishermen. In the pre-testing, much attention was given to any new information in the draft questionnaire in order to reach the objectives of the study. According to the experience gained in pre-testing, the final questionnaire was improved, rearranged and modified. The final questionnaire was semi-structured so that interviewees had a wide scope in answering questions, thus allowing any topics of interest to be elaborated upon. Fishers were told that the purpose of the study was to find out about their present livelihood constraints and to identify the alternative livelihood opportunities available and accessible in the island. Primary data were collected through Household survey using multiple methodological PRA tools such as Focus Group Discussion (FGD) and Crosscheck Interviews (CI) with key informants. Thus, 50 fishermen were interviewed at Nijhum Dwip in the random selection basis. Fishermen's were interviewed at the river sites during fishing. Interview of a fisherman required about an hour. After collecting of data through questionnaire interviews and FGD the information was further discussed and justified with the key informants and fishers' association. Cross-check interviews were conducted with key person such as, Upazila Fisheries Officer and relevant NGO workers for the confirmation of the relevant information. The interviews of respondents were conducted in their office. Land used data of the studied area; subject related annual reports and documents were also collected to validate the field observation.

Data analysis: All the collected information were summarized and scrutinized carefully and recorded. Finally, they were analyzed by MS-Excel and then presented in textual, tabular and graphical forms in accordance with the objectives of the study.

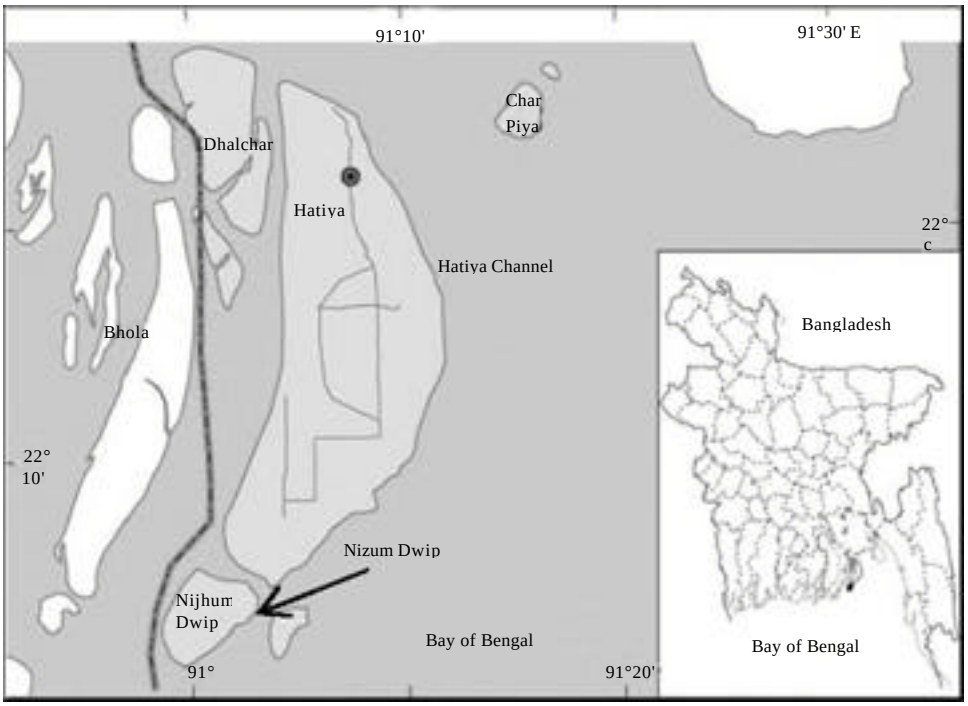

Fig. 1: Showing the study area (Nijhum Dwip)

RESULTS AND DISCUSSION

Fishers' number and types: Almost 8,000 people of the Nijhum Dwip were directly related to fishing activities which was about 30.76% of the total population of the island. Depending on their involvement in different fishing and fishing related activities the fishers' were classified as boat owner-fisher (8%), laborer fisher (60%), fishers engaged in fish drying (18%) and others involved in fishing related occupations (14%) (PL catching, crab catching, net making, renting fishing boats etc.) which are shown in Table 1. Rana (1996) observed in his study in Sirajganj district that 28% farmers were related to agriculture, 35% to business and 17% to fish culture as their main occupation. Sarker (2004) found that 17, 52, 3 and 28% farmers were related to agriculture fish culture, business and others as secondary occupation in Habiganj district.

Present biological and economic status of fishermen

Status of fish resources: In recent time in the study area, the amount of fish catch was decreasing very rapidly and some of the fish species were near to extinct. About 96-100% of boat owner-fishers and labourer fishers, fisher engaged in fish drying and 90% of other fishers involved in fishing related occupation perceived that the inshore fish resources were decreasing very rapidly (Table 2). In last few seasons fish catch in the study area was poor. Under the prevailing situation, about 36% boat owner-fisher, 25% labourer fisher, 74% fisher engaged in fish drying and 46% others involved in fishing related occupation were already engaged themselves in any suitable Alternative Livelihood Generating Activities (ALGAs) for the last five years alongside of their fishing related primary occupations. While, about 27-32 % boat owner-fisher and others involved

Table 1: Types of fishermen and their percentage

Fishers' type	Boat owner-fisher	Laborer fisher	Fishers engaged in fish drying	Others involved in fishing related occupations (PL catching, crab catching, net making, renting fishing boats etc.)
Number of fishers' (%)	8	60	18	14

Table 2: Status of fish resources and alternative livelihood generating activities (ALGAs)

Issues (%)	Boat owner fisher	Labourer fisher	Fisher engaged in fish drying	Others involved in fishing related occupation
Inshore fish resources decreasing	96	96	100	90
Fishers involved in ALGAs in last five years	36	25	74	46
Fishers looking for further ALGAs	32	38	8	27

Table 3: Income level of the fishers

Income level (BDT)	Up to 20,000	Between 20,000 to 50,000	Between 50,000 to 75,000	Between 75,000 to 1,00,000	Above 1,00,000
Fishermen (%)	4	30	46	12	8

in fishing related occupation; 38% labourer fisher and about 8% fisher engaged in fish drying were looking for further ALGAs suitable for their skill and resources (Table 2).

The above information indicate that because of depleting fish resources in the study area the fishers were unable to maintain their livelihoods only on fishing and other related activities, they have to search for suitable ALGAs to supplement their house-hold income and sustain livelihoods. However, most of them do not have required skill and knowledge on the ALGAs and sustainability of ALGAs in their situations.

Annual income of fishermen: Selected fishers were grouped into five categories according to the level of their annual income. The categories are up to BDT 20,000, 20,000 to 50,000, 50,000 to 75,000, 75,000 to 1,00,000 and above BDT 1,00,000 (Table 3). It reveals that BDT 50,000 to 75,000 categories had the highest number (46%) of fishers' and 4% of the fishers' had lowest income which was BDT 20,000 (Table 3). The income level of the fishermen of this area was more or less similar with the findings of Ali *et al.* (2009) whereas Shahriar *et al.* (2009) found that annual incomes of the fishermen of Morgagni beel area under Melandaha Upazila of Jamalpur district were varied from BDT 21,000 to 1, 00,000. According to him it was found that about 40% of the fishermen had annual income between BDT 24,000 to 36,000 and 32% of the respondent had income in the ranged BDT 36,000 to 48,000. The above information makes it obvious that the annual income of the most of the fishermen (46%) were very low for this they were keen to adapt themselves into new livelihood generating activities.

Socio-economic constraints of the fishermen: The fishers of Nijhum Dwip were encountered by many constraints in maintaining livelihood activities. The main constraints were burden of Dadon (credit from mohajon/bapari), market controlled by mohajons/baperies, poor market facility, threat of piracy in the fishing areas, reduction in fish catches in recent years, low wage rate in fishing and fishing related activities, limited access to land for home and crop cultivation, inadequate communication aid during fishing trip and lack of signal light at fish landing station. The severity of the constraints was different according to the types of fishermen. Burden of '*dadon*'

Table 4: Major constraints faced by fishers' category

	Fishers' group (%)			
Constraints	Boat owner-fisher	Labourer fisher	Fishers engaged in fish drying	Others involved in fishing related occupation
Burden of 'dadon' (credit from mohajon)	38	34	27	59
Market control by baperies/mohajon	62	38	0	6
Poor market facility	50	34	0	3
Dacoit/Pirates	42	50	0	6
Reduction of fish catch	50	44	0	0
Low wage rate	0	34	17	0
Lack of land for home and crop cultivation	4	2	10	3
Lack of communication aid during fishing	23	28	0	0
Lack of signal light at fish landing center	8	2	0	0

(credit from mohajon) was perceived as one of the most important constraints by 38% of the boat owner fishermen, 34% of the laborer fishermen, 27% Fishers engaged in fish drying and 59% of the fishers involved in fishing related occupation. Another important constraint was market controlled by mohajons/baperies perceived by 62% of the boat owner fishermen, 38% of the laborer fishermen, 0% in fish drying and 6% of the fishers involved in fishing related occupation. Reduction of fish catch was also perceived as important constraint by 50% of the boat owner fishermen and 44% of the laborer fishermen. The detailed results of socio-economic constraints faced by different types of fishermen are shown in Table 4. These types of problems were also being faced by the fishermen elsewhere (Bhaumik and Pandey, 1991; Halder, 2000; Alam *et al*., 2009).

Potential alternative livelihoods: Depleting fish resources in the fishing catchments of the study area along with other constraints of fishing unable fishers to depend only on their primary occupations related to fishery for maintaining livelihoods. For sustainable livelihoods, the fishers had to supplement their house-hold income through ALGAs. As mentioned in the previous sections, a significant number of fishers were already adopted some income generating activities suitable for their skills and resources and a cognizable number of fishers were ready to accept ALGAs suitable for their skills and resources. The most common ALGAs identified by the fishers were: poultry (22%), livestock (21%), crop farming (19%), boatman (13%), non-farm day laborer (9%), small business (6%), handicraft/swing (5%), crab catching and fish farming (1%) and others (3%). The detailed results of Potential ALGAs as perceived by different types of fishermen are shown in Table 5. Anonymous (2003) suggested a bulk of alternative options, in generally, for shrimp fry collectors of Bangladesh, including home gardening, duck, chicken and goat rearing, making fish traps and gear, oyster and crab cultivation, bee keeping, cultivation of hogla leaves for mat weaving, tree nurseries, paper bag making, sewing, shrimp fry nurseries, in regard to low investment capital. Anonymous, (2003) also proposed some social protection measures to make the

Table 5: Potential ALGAs as perceived by the fishers

Fisherman (%)	Crop farming	Livestock	Poultry	Fish farming	Crab catching	Small business	Day labour	Handicraft /Sewing	Boatman	Others
Boat owner-fisher	4	4	4	0	0	3	0	0	2	1
Labourer fisher	8	9	9	0	0	1	6	4	7	2
Fisher engaged in fish drying	1	1	1	0	0	0	1	0	1	0
Others involved in fishing related occupation	6	7	8	1	1	2	2	1	3	0
Total	19	21	22	1	1	6	9	5	13	3

Table 6: Prioritization of potential ALGAs

Potential AIGAs	Poultry	Livestock	Crop farming	Boatman farming	Day laborer catching	Small business	Handicraft /swing	Fish	Crab	Others
Fishermen (%)	22	21	19	13	9	6	5	1	1	3
Ranking	1st	2nd	3rd	4th	5th	6th	7th	9th	9th	8th

Table 7: Attractiveness matrix of ALGAs along with existing LGAs

	Potential to increase market demand		
Potential to increase income	Low	Medium	High
High	Fish farming	Poultry rearing	Fish catching, fish business
Medium	Boatman	Small business, day laborer	Crab catching, livestock
Low	Handicraft /swing	Crop production	PL catching

transition to alternative livelihoods which could be applied for fisher community, includes: (1) food for education program targeting the children of the poor; (2) food/cash for work and training and (3) better targeting of VGD (Vulnerable Group Development) cards to the women.

Prioritization of potential ALGAs along with existing livelihood activities: Fishers' identified potential ALGAs were ranked on the basis of the proportion of fishers selected the new livelihood activities. Poultry rearing was perceived by the most of the fishers' (22%) as an alternative livelihood source. Livestock rearing got the second highest intention and crop farming third by the fishers of the study area. All identified ALGAs are shown in Table 6 on the basis of priority perceived by the fishers'.

Beyond quantitative survey of existing livelihood activities and potential ALGAs, participatory approach was given for in-depth qualitative assessment and validation of field survey information on the same. In addition, prioritization of the livelihood activities and ALGAs were done with the active participation of the fishers with a view to identify the most important ALGAs for intervention. For prioritization of the ALGAs along with existing livelihood activities, a 'matrix of relative attractiveness' of each identified livelihood activities and ALGAs was developed with the fishers of Nijhum Dwip (Table 7). This 'attractiveness matrix' was developed based on two important ALGA development indicators; one, 'potential to increase income' and two, 'potential to increase market demand' with a scale of High, Medium and Low. The indicators were selected in consultation with the key informants and in agreement of the participants. The fishers were asked to put each of the identified livelihood activities and ALGAs in the relevant boxes of the matrix considering the two most important indicators with their relative scale.

Depending on 'high potential to increase income' and 'high potential to increase market demand', fish catching, fish business, livestock rearing, crab catching and poultry rearing were identified as the more attractive ALGAs as perceived by the fishers (Table 7). Small business, fish farming and crop production were also found attractive by the participant fishers. It is very important to note that fish catching and fishery related livelihood activities are still the most important primary occupation and major source of income and livelihoods of the fishers. Therefore, in future, the selection of ALGAs for the development of the livelihoods of the fishers due importance must be given on the development of fishing related primary livelihood activities and for supplementary income ALGAs may be selected considering the skills and resources available to the fishers.

CONCLUSIONS

This study was conducted to investigate the alternative livelihood opportunities available and accessible to the fishermen community of Nijhum Dwip Island, emphasizing on the present socio-economic constraints and appropriate alternative livelihood generating activities. However, the implication of this study is that the fishers' household income was limited and the fish resources was decreasing for that supplementary income from other than fishery was of great importance. Poultry rearing, livestock rearing, crab catching, crop production, small business etc. were identified as important ALGAs. So necessary steps should be taken by GO and NGOs to assist the fishermen to adopt these ALGAs.

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