

# **Seminar Paper On**

## ***Impact of Community-Based Fisheries Management on Livelihood of a Fishing Community***

**Module-2: Seminar Paper**

Submitted to-  
Module Coordinator

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## **Executive Summary**

The seminar paper on impact of community- based fisheries management on the livelihood of a fishing community described mainly about the contribution of fish production to the economy of the beneficiaries for assessing the role of the income on livelihood of the beneficiaries and assessing prospect of the sustainability of the fisheries community-based management.

Therefore, this study has enormous importance for identifying the status of the contribution of fish production to the economy of the fisher for sustainable fisheries co-management.

The research was based on the collection of primary and secondary data. Primary data was collected from project areas through interviewing 12 persons out of 20 beneficiaries with a questionnaire based on socio-economic information of the fisherman. The other related information was also collected from the record of the co-management and respective DoF offices.

It was observed that there was no record of fish production of the project areas. From the study, it is shown that the total fish production and per capita income of the fisherman of the project areas have increased. While studying the socio-economic status, it was found that 50% of age group 41-50 years old, 75% fishermen were illiterate, 50% fishermen family size was composed of 5 to 7 members, 63% used semi- concrete latrine which reflects their poor hygiene condition and over 50% lived in semi-concrete house. Last three years some fishermen converted their house and latrine to semi- sanitary or sanitary from non- sanitary and living standards are increasing.

It is observed that the status of fishermen's livelihood shows a moderate and creditable increasing trend from the study. So this study has enormous importance for identifying the sufficiency of the contribution of income from community-based management to income of beneficiaries in terms of food safety and comparatively higher standards of living of the rural people.

## 1.0 Introduction:

Bangladesh is blessed with many rivers, tributary, canals, haors, baors, ponds and floodplains covering a massive area of sweet water resources of 4.70 million hectares. As an agro-based country, the contribution of the fisheries sector to national economy has always been important and primary source of animal protein, employment opportunities, food security, foreign earnings, aquatic biodiversity conservation and socio-economic development. Fisheries sectors contribute 3.57% to our national GDP and 25.30% to agro-based production. This Section provides significant share (60%) of animal protein intake and about 11% of the population dependents directly and indirectly on the fisheries for their livelihood (Yearbook of Fisheries Statistics of Bangladesh, Department of Fisheries, 2017-18 pg.5). At present Bangladesh is ranked 4<sup>th</sup> in inland capture fisheries and 5<sup>th</sup> in aquaculture production all over the world (Food and Agriculture, 2014).

Community-based fisheries management is where local poor people were involved in the management process and received rights to fish in the common water bodies. These interventions have a significant impact on fisher's income when poor fishermen are involved in the co-management system (Rahman, 2010; Khan *et al.*, 2012).

Community-Based Fisheries Management (CBFM) is a new means for the sustainable management of inland fisheries resources. Through this formulation, water bodies are operated and managed by the local communities. Several activities like- establishment of sanctuaries, mending of fish surroundings, building fish-friendly structures, stocking of fingerlings, rehabilitation of vulnerable species and enforcement of fish acts and laws etc. have been executed in the CBFM Water bodies. As a result, production and biodiversity of fish increased significantly (Department of Fisheries, 2007)

Community-based fisheries management is a partnership arrangement between the government and the fishermen seem to be effective tools for better use of shared resources and for a better way to improve their livelihood.

## 1.2 Literature Review:

It is true good number of study have been done in this area in Bangladesh on different Boars, lakes and others. But there was no work conducted in Bangladesh on Kumer river in Bhanga Upazila at Faridpur district. The most common and relevant studies which have been conducted in the recent past are discussed below.

Rahman (2010) studied and reported that the Department of Fisheries (DoF), Bangladesh has a long chronicle of participation in community-based approaches to fisheries management. The crucial projects undertaken by the government of Bangladesh were Oxbow-lake Project-II (OLP-II) (1988-1997), community-Based Fisheries Management (CBFM) Project (1995-1999), CBFM 2(2001-2006), Third Fisheries Project (TFP) (1991-1996), Fouth Fisheries Project (FFP) (1999-2006) and Management of Aquatic Ecosystems through Community Husbandry (MACH) Project (1998-2007).

Rokanuzzaman (2004) reported that the majority (42.3%) of the fishermen were the young aged category, while 36.6% and 21.1% belonged to middle-aged and old aged categories respectively. Kabir et al. (2012) found that age group of 31-40 years was the highest (50%) and 41-60 years was the lowest (10%) considering all fishermen in Old Brahmaputra river in Mymensingh.

Ali et al. (2014) noted that most fisherman (75%) are belonging to Muslims in his study area. 20% and 5% of fishermen were Hindus and Buddhists.

Abdullah-Bin-Farid et al. (2013) conducted a study in Boluhar Baor in Bangladesh and found that 37% of fishermen were illiterate and 31% was educated up to primary level. Hossain (2008) stated that most of the respondents (members of coastal communities) were illiterate

(60%) and only 14% and 16% had passed primary and secondary level of education, respectively.

DoF (1990) conducted a survey on the socio-economic conditions of the fishermen in eleven Upazilas of the District of Patuakhail and Barguna under fisheries extension development project of reported that the rate of literacy among fishing communities is far less than others areas, their economic condition was so bad that they often could not afford educational expenses for their children.

Although, could not find any research work on the project areas. That is why, emphasis was given to fish production, contribution of income from fish production and socio-economic condition of the recipient of fisheries co-management on Kumar river in Bhanga Upazila. At this point of view literature of this areas, co-management of river, occupation of fishermen, income from community-based management, and socio-economic of the fishermen were reviewed to stock of the knowledge and information for the study. Sufficient relevant information on age group, family size, education, children education, house type, latrine type, clothing, recreational items, intake of protein source food, income sources of fishermen, occupation of fishermen were found and were collected for analyzing the findings of the study.

### **1.3 Objectives of the Study:**

The present study is planned with the following specific objective:

- To assess the impact of community-based fisheries management on that particular areas.
- To provide some policy recommendations to improve the livelihood condition of other areas using community- based fisheries management.

### **1.4 Research questions:**

- a) What are the impacts of community-based fisheries management in the project areas?
- b) Does the integrated approach ensure improve fisherman livelihood?
- c) How can the government improve the livelihood conditions of the fishing community?

## 1.5 Rationale of the Study:

According to 7<sup>th</sup> Five Year Plan, the Government has taken various initiatives to increase fish production through aquaculture as well as through community-based fisheries management of common water bodies (Department of Fisheries, 2017). Common water bodies in Bangladesh hold enormous prospective for obtaining the enhanced supply of fish for meeting the intense shortage of animal protein. If an impressive system could be formulated for better utilization of these water resources on a sustainable basis, the demand of quality food, nutrition, rural employment and income generation will be mostly met. This will finally ensure social harmony and better economic condition among rural people. Extensive aquaculture practice in the common water bodies like river can be chosen as an efficient way for increasing fish production and help improve the rural economy of the country. A lot of research works has been conducted in Bangladesh, but unfortunately no significant research is found to identify the challenges of community-based fisheries management in project area like Kumer River, Bhanga, Faridpur which is important for sustainability livelihood of the fishermen. Considering the prospects of creating new opportunities the present study is undertaken to lead to improve livelihood of fishermen. Therefore, this study has enormous importance for identifying the contribution of fish production of the Bangladesh economy as well as for sustainable community-based fisheries management to obtain desirable outputs in terms of food safety and ensure better living standards for the rural people

The study was designed to find out the prospect of increasing fish production through community-based fisheries management and socio-economic aspects of the fishermen. The findings of the study may be helpful to the planners for decision making and planning for the improvement of livelihood of the fishermen or rural poor through community-based management of common water bodies of the country.

## 1.6 Conceptual Framework:

Community-based fisheries management in Bangladesh is not a new phenomenon. Bangladesh gained significant success in fisheries sector through community-based management. Therefore, to investigate the impact of fisheries sector in Bangladesh, it is crucial to understand some major concepts that are related in the context of this paper. Firstly, to understand

community-based fishing, it is important to show bright solutions for improved fish production in the project areas and develop the rural economy of the community. Studies on the management of the project areas fisheries resources and active involvement of the stakeholders under different situation in Bangladesh are of great importance in the preparation of optimal plan of action for sustainable livelihood improvement.

In this study, the emphasis was given to the fish production, contribution of income from fish production and socio-economic condition of the beneficiaries of the fisheries co- management of Kumer River in Bhanga Upazila of Faridpur district. At this point of view, fish production in this area, co-management of river, occupation of fisherman, income from community management and socio- economic condition of the fishermen were reviewed to stock of the knowledge and information for the study. Sufficient relevant information on age group, family size, education, house type, latrine type, clothing, intake of protein source food, income sources of fishermen, occupation of fishermen were found and were collected for analyzing the findings of the study.

### **1.7 Limitations of the study:**

This study has some limitations. Members of the community leave their occupation to fulfill their desire frequently. Due to time constraint, the writer could not give much attention for data collection, directly interview the different types of relevant stakeholders, Focal Group Discussion (FGD) in the project implementation areas, compilation and analysis. Also, the required discussion with project personnel's who were involved in the project implementation process could not be performed properly. Analyses of the sufficient numbers of other similar types of research works and other published documents were required. But all these works could not be properly performed due to limitation of time.

### **2.0 Methodology:**

The study was implemented at Bhanga Upazilla, the District of Faridpur, Estimated area of the river was 16 hectares. Bangladesh government has given by arranging the lease of the portion of the river to a beneficiary group consisted of the surrounding dwellers.

The research was conducted within the beneficiaries of fisheries co-management of the areas. Both formal and informal stakeholders were considered and these stakeholders were

directly or indirectly involved in the process. The formal stakeholders are Department of Fisheries, Ministry of Land. The informal stakeholders are Community peoples those who are directly involved in fisheries management and benefited.

The research was based on the collection of primary and secondary data. Primary data was collected through interviewing 12 persons out of 20 beneficiaries with questionnaire, based on socio-economic information of the fishing community of the River. Fisheries co-management and income related information was collected from the records of the intervention and respective DoF offices to understand the contribution of fisheries community management to the socio-economy of the beneficiaries.

All collected information was accumulated and analyzed by MS-Excel and then presented in textual, tabular forms to understand the contribution of fisheries community-based management to the economy of beneficiaries.

## **2.2 Findings and Analysis**

### **2.2.1 Fish Production:**

My study areas are not in a river, this water body is originated from the Kumer river. It is just like a canal, one side is closed and the other side is linked with the river. There is no recorded annual fish production data in these areas. I have tried to collect data from DoF, the national average fish production in the river was 1729 kg/ha/year in 2015 (Annual Report, DoF, 2015). Fish production of my study areas in the years of 2015-16, 2016-17 and 2017-18 were 1820 kg/ha/year, 1925 kg/ha/year and 1860 kg/ha/year respectively. In 2016-17 year there was highest production due to good weather. All management duties of that area such as releasing fingerling, harvesting, and establishment of sanctuary, selling, marketing and distributing income were performed equally by all the beneficiaries.

### **2.2.2 Socio-economic conditions of the fishermen:**

There was total of 20 fishermen who were found directly engaged in the fisheries co-management of the studied areas. Wide ranges of indicator were collected in various aspects of socio-economic condition of fishermen and the production of the areas. The relevant data were

collected on the socio-economic characteristics included age group, religion, family size, educational status of the fishermen and their children, condition of house, sanitation, land ownership, recreational aspects, use of electricity, occupation, income sources, yearly income and expenditure etc.

**2.2.3 Age Structure:**

It was observed that 17%, 50%, 25%, and 8% of fishermen were belonged to age group in up to 40, 41-50, 51-60 and 61 or more years respectively (Table 1). Results that the highest number of fishermen were between 41-50 age group indicating middle age groups.

**Table 1: Age structure of fishermen of Project area:**

| Age Group    | No. Of Fishermen | %   |
|--------------|------------------|-----|
| Up to 40     | 2                | 17  |
| 41-50        | 6                | 50  |
| 51-60        | 3                | 25  |
| 61 and Above | 1                | 8   |
| total        | 12               | 100 |

**2.2.4 Educational status**

Educational status of the fishermen decided into five categories viz. below primary, below secondary, secondary, higher secondary and bachelor or more level. The highest of the fishermen were below primary 75%, 17% are below secondary, and the rest are secondary pass. table 2. None of the fishermen was of a higher educational level.

**Table 2: Educational status of fishermen of the Project areas:**

| Educational level | No. Of Fishermen | %  |
|-------------------|------------------|----|
| Below primary     | 9                | 75 |
| Below secondary   | 2                | 17 |

|                  |    |     |
|------------------|----|-----|
| Secondary        | 1  | 8   |
| Higher secondary | -  | -   |
| Bachelor         | -  | -   |
| Total            | 12 | 100 |

### 2.2.5 Children’s Educational Status:

Form the study, it was found that the illiteracy rate among the children of fishermen was 30.68% and 26.37% in the year 2015-16 and 2017-18 respectively. It was also observed that literacy rate among the children of fishermen is increasing but not up to a satisfactory level.

### 2.2.6 Religious status:

It was noted that most of the fishermen 83% are Muslims in the study area and only 17% fishermen were Hindus (Table 3).

**Table 3: Religious status of fishermen of the project areas:**

| Religion | No. Of Fishermen | %  |
|----------|------------------|----|
| Muslim   | 10               | 83 |
| Hindu    | 2                | 17 |

### 2.2.7 Family size:

The family size of the fishermen was divided into four classes based on the number of family members (up to 4),(5-7) and 8 or above. Most of the fishermen family were composed of 5 to 7 members (50%) and marked as medium family, small family as up to 4 members (47%) and the large family as 8 or above (7%) (Table 4).

**Table 4: Family size of fishermen of the areas:**

| Family size             | No of Fishermen | %   |
|-------------------------|-----------------|-----|
| Family member within 4  | 5               | 42  |
| Family member 5-7       | 6               | 50  |
| Family member 8 or more | 1               | 8   |
| Total                   | 12              | 100 |

**2.2.8 Housing Conditions:**

The nature of house indicates the social status and economic condition of the people. During the survey, attempts were made to find out the present and previous three years condition of living house of the fishermen. From the survey, it was found that about 66.6%, and 50% houses of the fishermen were made of mud- bamboo and semi concrete in the year 2015-16 and 2017-18 respectively (Table 5). It was also observed that during the last three years some fishermen have converted their house to semi concrete from mud -bamboo.

**Table 5: Housing status of fishermen of the project:**

| House         | Year 2017-18 |    | Year 2015-16 |      |
|---------------|--------------|----|--------------|------|
|               | No .         | %  | No           | %    |
| No house      | 0            | 0  | 1            | 8.33 |
| Mud-bamboo    | 4            | 33 | 8            | 66.6 |
| Semi concrete | 6            | 50 | 2            | 16.6 |
| concrete      | 2            | 17 | 1            | 8.3  |

**2.2.9 Latrine Conditions:**

In the study period it was found that all most all the fishermen used semi-concrete latrines. Three types of latrine were found: 1) Non- concrete (made of mainly cement ring and slap, bamboo, wood and tin), 2) semi –concrete (mainly cement ring and slap, brick and tin) and 3) concrete

(made of brick with good drainage disposal). It was also found that 90% and 63% latrines of the fishermen were non concrete in the year 2015-16 and 2017-18 respectively (Table 6), which reflects their middle hygienic condition.

**Table 7: Latrine conditions of fishermen of the project areas.**

| Latrine type  | Year 2017-18 |       | Year 2015-16 |       |
|---------------|--------------|-------|--------------|-------|
|               | No.          | %     | No.          | %     |
| Non concrete  | 7            | 63.33 | 9            | 90.00 |
| Semi concrete | 2            | 13.34 | 2            | 3.33  |
| concrete      | 3            | 23.33 | 1            | 6.67  |

**2.2.10 Electric Facility:**

From the present study, it was found that there were 91.8% fishermen have electricity facilities and 8.2% do not have that facility.

|         | Number of fishermen | Electricity facilities |
|---------|---------------------|------------------------|
| Present | 11                  | 91.8                   |
| Absent  | 1                   | 8.2                    |

**2.2.11 Clothing status:**

It was found that 83% and 73% of cloths of the fishermen were poor in the year 2015-16 and 2017-18 respectively (Table 9). It was observed that during the last three years some fishermen have improved their cloth quality from poor to medium level of standards.

**2.2.12 Recreational item:**

From the study it was found that most of the fishermen had television and mobile both or one as their recreational item and a few numbers of fishermen has nothing for their recreation and use of mobile by the fishermen has been increasing day by day.

### **2.2.13 Land status:**

It was found that only 4 fishermen have agricultural land and 4 fishermen did not have their own land for their home. The maximum homestead land was of 0.15 acre and the fishermen (87%) had average 0.065 acre land for their home

### **2.2.14 Intake of food for nutrition:**

Major protein source food items of the fishermen were fish, egg, and chicken. It was also found that intake of fish was the highest (14 days /month), followed by egg (6 days/ month ). It was also found that the fishermen have been eating the stated protein source food items more than 22 days per month. It was found that nutrition of the fishermen was not poor.

### **2.2.15 Income and expenditure:**

The average annual expenditure of the fishermen was BDT 108,767, which was more or less close to the income. The minimum income and expenditure was found same, which means that there are some fishermen who are fully dependent on the fisheries co management. It was found that the total annual income was finished for buying the necessary goods, food item, fuel, cloths, health care etc.

## **3.0 Conclusion and recommendations:**

### **3.2 Conclusion:**

Bangladesh is very rich in aquatic resources. Efficient fisheries co management may have positive impact on fish production of the country as well as improvement of livelihood of the rural poor fishermen. The study may have important role on this aspect.

This study had enormous importance and was conducted for identifying the status of contribution of fish production to the economy of the fishermen for community – based fisheries sustainable fisheries co management. It was observed that fisheries management activities of the areas were more or less poor.

While studying the socio-economic status, it was found that 50% fishermen were of age group 41-50 years, 75% were below primary level, 50% family were composed of 5 to 7 members, 66.6% lived in mud-bamboo made house, 63% used non-concrete sanitary latrine. During the last five years some fishermen have converted their house and latrine to semi concrete or concrete from mud – bamboo made and their living standards had been increased. Socio economic condition of fishermen of the project area was found increasing with increased income.

The contribution of income of fishermen from community based fisheries management decreased to 54% in 2017-18 from 64% in 2015-16. During the last three years, the contribution of income from children's income increased to 17% from 3% and other sources from 5% to 7%. Contribution of income from agriculture and wage was found decreasing. It indicates that household income was increasing, but not dominantly through income from fish production.

The present fish production and its contribution to income of the fishermen was not sufficient for the sustainability of fisheries interventions in the project areas, though some fishermen were fully dependent on it. The project should be managed with improved technology for using the potential productivity of the water body and for the improvement of the livelihood of the fishermen of fisheries co management. Therefore, there are possibilities to contribute more to the income of beneficiaries through fisheries co management with improved technology and to uplift their socio-economic condition.

### **3.3 Recommendations:**

Following recommendations were prepared based on findings of the study:

- An extensive resource survey should be made to appraise the potentiality and hazards to the project area in relation to biological and environmental change for future resource operation.
- The government should adopt a national policy to ensure the admittance to the common water bodies of the community of real recipient by rendering technical and management support under DoF/ MoFL.
- The government should initiate a special development program to bring all potential Common water bodies under fish culture program through proactive management and

direction of DoF to intensify fish production and for better socioeconomic condition of the community people.

- The competent authority should apprise the commercial bank and financial institution to introduce new windows to provide financial support to the community people for fish culture in common water bodies on easy terms and conditions.
- The Department of Fisheries in cooperation with local government institutions should take realistic measures to assist and to create collective awareness regarding the utility, possibility and production participation in common water bodies to derive livelihood support of the recipient.
- The DoF should arrange training, create awareness and provide motivational support to the local community people to culture fish in the common water bodies.

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Questionnaire for economic survey of beneficiaries of community- based fisheries management.

1.1 Name of Farmer: .....age: .....

1.2 Address: Village: .....Union: .....Upazila:.....District:.....

2. What is your religion? Muslim ☐ Hindu ☐ Christian ☐

Buddhist ☐ Other ☐

3. What is your education? Below primary ☐ below secondary ☐

Secondary ☐ Higher secondary ☐ Bachelor & more ☐

4. What about your children's education?

| Education level        | Last Year<br>(2018) | In the Year 2015 | Remarks |
|------------------------|---------------------|------------------|---------|
|                        | No. of child        | No. of children  |         |
| Do not go to school    |                     |                  |         |
| Primary level          |                     |                  |         |
| Secondary              |                     |                  |         |
| Intermediate level     |                     |                  |         |
| Bachelor or more level |                     |                  |         |

5. Family size:

| Family size             | Last year (2018) | In the year 2015 |
|-------------------------|------------------|------------------|
| Family member within 4  |                  |                  |
| Family member 5-7       |                  |                  |
| Family member 8 or more |                  |                  |

6. Land ownership:

| Land type       | Last year (2018) | In the year 2015 |
|-----------------|------------------|------------------|
|                 | Acre             | Acre             |
| Pond            |                  |                  |
| Cultivable land |                  |                  |
| Homestead land  |                  |                  |
| Total land      |                  |                  |

7. What kind of latrine do you use?

| Latrine                | In the year (2018) | In the year 2015 |
|------------------------|--------------------|------------------|
| Concrete               |                    |                  |
| Semi concrete          |                    |                  |
| Non concrete           |                    |                  |
| Non                    |                    |                  |
| Other (please specify) |                    |                  |

8. Do you have electricity facilities?      Yes ☐      No ☐

9. Do you have the following recreational items?

| Recreational item       | () |
|-------------------------|----|
| Have no item            |    |
| Mobile Phone            |    |
| Radio                   |    |
| Cassette Player         |    |
| Television              |    |
| Others (please specify) |    |

10. What type of house do you have?

| House type              | In the year 2018 | In the year 2015 |
|-------------------------|------------------|------------------|
| Concrete                |                  |                  |
| Semi Concrete           |                  |                  |
| Concrete                |                  |                  |
| Others (please specify) |                  |                  |

11. Beneficiary's clothing status:

| Clothing type | In the year 2018 | In the year 2015 |
|---------------|------------------|------------------|
| Very poor     |                  |                  |
| Poor          |                  |                  |
| Medium        |                  |                  |
| standard      |                  |                  |

12. Nutrition (animal protein) level:

| Item of food | In the year 2018 |        |         |        | In the year 2015 |        |         |        |
|--------------|------------------|--------|---------|--------|------------------|--------|---------|--------|
|              | Times of intake  |        |         |        | Times of intake  |        |         |        |
|              | daily            | weekly | monthly | Yearly | daily            | weekly | monthly | Yearly |
| Egg          |                  |        |         |        |                  |        |         |        |

|         |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|
| Chicken |  |  |  |  |  |  |  |  |
| fish    |  |  |  |  |  |  |  |  |
| Meat    |  |  |  |  |  |  |  |  |

13. Farmer’s annual income (In the year 2018): .....Tk.
14. Farmer’s annual expenditure (In the year 2018): .....Tk.
15. Farmer’s annual expenditure (In the year 2018): .....Tk.
16. Do you have any recommendation to improve income?

- a.....
- b.....
- c.....

Date:...../...../..... Interviewer: .....