Sustainable Livelihood Approach for Poverty Alleviation: An Exploratory Study of Coastal Fishing Communities in Bangladesh

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Abstract

The paper focuses the core elements of the sustainable livelihood approach with special reference to the coastal fishing communities of Bangladesh. The data and information have been collected from six coastal fishermen villages through stratified sampling covering five districts of Bangladesh. The paper empirically examines the natural resources available in poor communities. It also highlights the vulnerable issues like shocks, trends and seasonality. The paper attempts to link between micro and macro levels viz. government, ngo.s, Private sectors and community level for better livelihood of target groups. Thus the livelihood approach find out ways and means to build strength of the poor in order to increase more income and sustainable resource base for the poor fishing communities of Bangladesh.

1. INTRODUCTION

1.1 Background

Coastal fisheries offer multi-species resources for the people of Bangladesh. It is estimated that there are about 4,00,000- 5,00,000 tons of fish available in the Bay of Bengal. But deep-sea trawlers catch about 25,000-30,000 tons annually, which is only 10% of the harvestable quantity to meet growing demand for protein within the country (Chowdhury 2002). Bangladesh is endowed with vast marine and coastal having tremendous fisheries potential. The country has a 166000 km long coastal line on southern zone of the country and 1 million hectares of territorial waters extending 19 km up to the sea. The nation's economic zone extends 320 km out into the sea from the coastline. The continental shelf of

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Bangladesh covers an area of about 66,440 sq km of which 37000 sq. km is not deeper than 50 m. According to the survey report of Dr. Fridtjof Nansen, the continental shelf zone have good fish resources (Rahman & Chowdhury 1998).

Bangladesh occupies a unique position due to her natural fisheries resources in South Asia. Fisheries can play a positive role in the supply of delicious and high quality protein food for the people of the country. As a valuable food item, fish is next to rice. Fishery sector is already contributing 80% to the nation's animal protein intake, nearly 6% to the GDP (Ali 1998), 14% of gross agricultural product (Amin 1998) and more than 12% to the export earnings of the country (Statistical Year Book, 1999). The fisheries sector provides full time employment to an estimated 2 million fishermen, small fish traders, fish transporters and packers (World Bank 1989). It is also significant that there are 11 million part time fishermen and women in the country and 73% of the households are involved in subsistence fisheries in flood lands (GOB, 1997). These fishing communities in the coastal regions of Bangladesh provide the necessary fish and animal protein for the country. They work in the Bay-of Bengal day and night in the rain, wind and during bad weather and cyclones. But they are still poor (Hasan, 2001). Again coastal fishing in Bangladesh is highly seasonal with the main hilsha season taking place between June and September. During this part of the year, the fishing communities "are crowded with buyers, boat repairers and salesmen" (Blowfield and Haque 1996). Income levels are only at a fraction during the remainder of the year, thereby increasing the population's economic vulnerability (Kleih 2001). Almost 20% of Bangladesh population live on a narrow belt along the coast and estuaries. Most of the people of coastal Bangladesh live in fishing villages and fish catching is their only entitlement to money, food and life (Dastidar 2001). About 8% of the total population depends on this sector for their livelihood. (GOB 1999). It is evident from the above facts that the poor people of coastal areas are dependent on their own resources for their livelihood.

1.2 Coastal Livelihoods System

Livelihood comprises the capabilities, assets and activities required for a means of living. Livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not under mining the natural resource base (Carney et al 1999). In order to understand and analyze the lives of the poor people, the sustainable livelihoods approach has been formulated. People are the main and most important issue in this approach. The poor people have limited access to the various assets which are available in and around of their social life. It appears that

they are not aware of the same. But, for their survival and better future, the assets that they have need to be utilized in innovating way. At the same time, it is acknowledged that there is a lack of understanding of how the livelihood system in coastal fishing communities is organized. An improved understanding of the livelihood system appears necessary before recommendations for improving the livelihoods of poor participants in the fish commodity chain can be made.

1.3 Purpose

The purpose of the research is to describe and understand the functioning of the livelihood system in coastal fishing communities and to develop recommendations for how to improve the livelihoods of poor participants in the fish commodity chain.

2. METHODOLOGY

The present paper is the result of the combination of two methods i.e., desk study and filed work. In desk study, the supporting and relevant literature such as textbooks, research articles, government policies, programs and strategies regarding sustainable livelihood approach for socio-economic development of fishing communities have been consulted in order to make the study representative and informative. Moreover, secondary data required for the study were collected from the Directorate of Fisheries, Ministry of Fisheries, Regional Fisheries Office at Chittagong, and Institute of Marine Science, Chittagong University. Besides, various government documents and publications like Five Year Plans, Statistical Year Books, Economic Survey Reports were also reviewed to collect data and for cross reference purpose relevant to secondary information collected from different sources during the process of literature review.

Primary data have been collected through structured questionnaire designed in the light of the objectives of the study. The present study has been confined to six coastal fishermen villages of Bangladesh. Table 1 in the Appendix shows the break up of the sample villages. The size of samples are 300. The sample respondents have been selected from these villages taking 50 samples from each coastal fishermen village. The technique of stratified sampling was used to select the sample respondents. During the course of field investigation, the researcher recorded in his notebook the findings revealed through personal observation and free discussion. The survey was conducted during the period from July2001 to June 2002. Collected data were analyzed through the use of various statistical techniques like averages, percentages and the likes. Therefore, it is expected that the results obtained could be of value in general.

3. ANALYSIS OF FINDINGS

Capital assets for livelihood include human, social, physical, financial and natural capital. In such background, these assets of sample coastal fisherman have been analyzed in the light of survey results.

3.1 Human Capital

Human capital includes education, knowledge, skills, ability to labor and good health which may be utilized for their better livelihoods. Thus components of human capital are skills, knowledge, good health, ability to labor and the likes. It is the core of all other four types of assets. For the better management of livelihood of a fisherman, he needs to know the potential location of fishing grounds, mode of operation of boats in odd climate, market chain, financial environment etc. In new millennium, skills and knowledge seem to be the key factors in changing social dynamics. This knowledge may be indigenous and skills will be developed through experiences.

Education level

The formal education helps in the acquisition of required skills for a job which demands non-traditional skills and imparts knowledge about the different occupational opportunities. Therefore, in an underdeveloped economy, the education is always looked upon as a means to improve one's socio-economic position in the society. Data collected in this regard have been shown in Table 2 in Appendix. The survey result reveals that the literacy rate at (7+) is 30.8% at gross level where the male and female percentages are 35.5 and 25.4 respectively. Further, the gross percentage of literacy rate at (15 +) is 31.5 where the male and female percentages are 37.8 and 23.4 respectively. Moreover, the mean years of education level of head of male household is 2.28 where it is 1.48 in the case of female. Further, the skewness of education level of male percent is 1.34 and it is 1.74 in the case of female. The Kurtosis of education level for male and female percentages is 1.51 and 2.66 respectively. These show that the education level of sample respondents is too low in context of literacy rate of Bangladesh. Admittedly, education is a powerful instrument to institute community involvement in the process of socio-economic development meaningful, committed and accountable to people welfare.

Age Structure

The changing age structure of the population will result in differential growth rate for various age groups over the decade, and this difference will strongly affect the growth and development of target groups (Kotler & Armstrong 1995). In such background, the distribution of sample respondents have been shown in Table 3 by age structure. The survey data evidence that the mean and median age of total population are 25.1 and 24.0 years respectively. The median age group of male population is 25.8 years where it is 23.0 years in the case of female. It shows that this is the age when one can exert his skill, talent on one hand and seems to be motivated to face any challenges building his career on the other.

Sex

There are substantial demographics changes tacking places in the society that have resulted in a blurring of traditional sex roles (Kinnear & Bernhardt 1983). It is true that according to the norm of a particular culture, the roles of man and women in the society have tended to be quiet different. But at present the nature of this role is gradually changing. Moreover, women are involved in the small and other self-employment income generating activities. In such context, we were interested to know the sex composition of sample household members. Table 4 portrays that the sex ratio of sample household members are 111.8: 100. Women participation in fishery sector as processors, packers, vendors indicates that women are emerging as significant earners of family income in study areas. It guarantees sustained and adequate incomes for the women and thus it becomes the key to poverty alleviation. However, the different five-year plans like fourth and fifth five-year plans of Bangladesh aims at integration of women into the development process. Nutrition, poverty, hunger, illiteracy etc. are centered among women folk and which is truer in the case of coastal fishery sector too. Substantial participation of women in family based nutritional activities like fisheries has made it imperative to integrate women into the main stream of planning and development of country.

3.2 Natural Capital

Natural capital includes land, water, bio- diversity and the likes. Further, religion, caste etc. affect the livelihood of the people. People of coastal fishing communities depend on various types of natural resources for pursuing their livelihood.

Land

Size of land holding is an important socio-economic indicator of the rural people. Bertocci, who designed 2.0 acre as the subsistence size of land in his study of two Comilla Villages (Bertocci, 1970). Table 5 shows that 14.0% of the respondents have no land and homestead even. The survey, further, evidences that the land size is also important for various types of occupational activities. It has been observed that fishing is a seasonal activity and for the livelihood of sample respondent alternative sources of income is required. Further, combination of different types of natural resources like forestry may use for better livelihood of fishermen community. Forest may provide materials for housing and boats making. It may be used as fuel for cooking of food of coastal people. The forestry may provide different types of fruits which can meet nutritional requirements of sample respondents. Mushrooms can supplement the food requirements of poor people. It has been observed that cow dung is used for the cooking of food for coastal fishing communities. It seems that it will affect adversely the bio-diversity of ecology and destroy the environment for growth and development of natural renewable resources.

Water

Water is a natural resource. Fish production and growth depend on availability of this natural resource. Again water ways are also used for transport of persons and produces. Fresh water is used for human consumption and for preserving fish. In such context, we were interested to know from the sample respondents about their access in water resources. Table 6 in the Appendix reveals that 209 (69.67%) out of 300 (100%) sample respondents have access in water resources whereas the rest 91 (30.33%) have no access in water resources. Admittedly, fish catching in deep sea depends upon a number of factors such as boat, gear, nets and the likes. Reportedly, these poor fishermen are away from these resources. Thus, due to this constraint, they can not utilize water resources for better their livelihoods. Further, access to safe drinking water, health services and sanitation are essential for maintaining good health which, in turn, will help to lead a better livelihoods in the coastal fishing communities.

3.3 Caste

The family background is an enabling factor since the bundle of skill, experience and training necessary to sense, view, evaluate, and exploit given opportunity can be obtained from family circle free of cost, easily, quickly, and with out

undergoing exploitative apprenticeship system. Traditionally, caste are specialized in particular profession which can be seen either as protective

towards an individual's livelihood strategy as it hinders outsiders from entering into the same (Oudwater, 2001). However, it can also be seen as a constraint as it limits people's opportunity to seek alternative employment strategies outside of their traditional occupation (Blowfield & Haque, 1995). Against this background we collected data from the respondents regarding whether they are affected by the caste system. The collected data in this regard have been shown in table 7. The table shows that 65 (65%) out of 100 (100%) fishermen are affected by caste system where as the rest 45 (45%) are not affected by it. Among the samples, 100 fishers are belong to Hindu religion and they opine that they are the people of low caste i.e. Jaladas. The jaladas usually do not have land and their traditional occupation is fishing. Increasingly, there is an influx of people who have lost their land and perceived fishing as a kind of last resort (Alam, 1996).

3.4 Social Capital

Social systems pursue the livelihood of human being. The social networks and relationship explore social resources. These relationships are developed by family relationship, marital status, membership of social groups and the likes. The family contacts at different levels help in building one's occupational career. The social interaction helps the people in developing and promoting livelihood approaches.

Marital Status

Marital process is a way to establish linkages among different families. Again, relationship through marital process open up the choice of opportunities for potential livelihood strategies. Moreover, a married woman may enjoy more security in her livelihood approach due to the presence of her husband and other relatives of husband's family. The survey result shows that the percentage of marital status of household members is 57% (Table 8). It has been observed that the son- in- law of rich fisherman family enjoys more opportunities in getting favorable livelihood approach from his father-in-law. Reportedly, married women live more secured life than widow and divorced women of the coastal fishing communities. Thus social network through marital linkages may help one to choose alternative income generating activities from their socio-economic environment.

Family Size

amily size has definite bearing on level of saving and investment and therefore on the emergence and development of a family. The small size of family enables the family members to live a prosperous life because it helps to minimize the cost of living and creates opportunity for saving. Thus, it opens up the opportunity for recycled of saving for expansion and growth. (Sit, 1979). As such we were interested to know from the sample households to know about their family size. The empirical data depict that out of 300 sample respondents 37% with family size between 5-6, followed by 36.3% with family size between 3 – 4 and by 14% with family size between 1-2. The respondents numbering 38, family size is 7 and above (Table 9). It is thus asserted that the majority of the sample fishermen have large family size which, in turn, may cause lower rate of earning. As a result, they are not able to save any amount of money for their better livelihoods in the coming years.

Religion

Religion is a predisposing factor and could equally be an enabling factor (Chowdhury, 1998). This factor has definite bearing on an individual's profession and therefore, on his livelihood. Religion is an important enabling factor in interacting with resource center to obtain different types facilities for the better livelihood of sample respondents. Data collected in this regard have been shown in table 10. The table portrays that 200 (66.67%) out of 300 (100%) fishermen are Muslim where as the rest 100 (33.33%) fishermen are in the category of Hindu Religion. In sample study areas, coastal fishing communities are lacking behind due to non-access to land and therefore, they have become constraint in opportunities in seeking alternative livelihood strategies. Thus Hindus engaged in fishing finds it difficult to get other profession like agriculture. Not only would such changes in occupation be treated as transgression into the territory of the Muslim peasants, such possibilities are also very much slim as increased number of Muslim peasants are also facing problems to find jobs in the agriculture sector (Dastidar & Dutta, 2002).

Fishermen Association

People are dependent on resources in pursuing their livelihood strategies. Social resources are determined by relationships and networks, which exist with in nuclear and extended families, and in and among communities and groups. These social relations influence the way in which people can access and make use of

their assets. In such background, we were interested to know form the respondents about the existence of the association. The data thus collected have been shown in table 11 (a). The table reveals that out of 300 sample respondents, 239 respondents answered in the affirmative regarding the queries about the existence of association. The table also reveals that 61 respondents are absent in giving any information in this regard. Further, it is reported these associations are sometimes in the form of cooperative societies. At this stage, we were interested to know from them about their belongings to an association. The collected data in this regard have been shown in table 11 (b). The table portrays that among the sample respondents 203 belong to the association and the remaining 36 respondents opined that they do not belong any professional association. Further, we were motivated to know from the respondents regarding the benefits of membership of these associations. The survey data have been shown in table 11 (c). Among the respondents (203), 135 opined that they enjoy some benefits from the membership of these type of associations. The rest 68 respondents pointed out that there is no benefit from the membership of these associations. Admittedly, this type of professional association pave the way towards social, economic and political empowerment of the coastal communities.

3.5 Physical Capital

Physical capital includes basic infrastructure such as shelter, transport, communication, production equipment etc. Among production equipments boats, nets and the likes are most essential for coastal fishing communities. Further, radio, mobile phone may play a significant role in communication network especially in cyclone, flood, and other natural disasters.

Boat

Physical capital like boat is the basic production equipment which enables the fishermen to pursue their livelihoods. The data have been collected regarding the production equipment like boat. Data thus collected have been shown in table 12. The survey result shows that the owner of engine boat is 24.3% where as the percentage of boat without engine is 31.3% . Among the respondents, 1.4% mentioned they have both types of boats. Further, 43% of the sample respondents pointed out that they have no boats. Reportedly, they are working as the daily labors and catching fish in the sea.

Nets

Fishing equipment viz. net is essential for continuous flow of catching of fishes. This capital asset is essential to support livelihood strategies of coastal fishermen in study areas. Data in this regard have been shown in table 13. It reveals that 40%, 9.3%, 7.7% and 6.0% of the respondents have "1-2" being followed by "3-6", "11 and above" and "7-10" nets respectively. The coastal fishermen used these nets for catching fishes in the deep sea.

Fishing Gears

Fishing gears, fish processing equipment such as drying racks/ slabs are essential to support livelihood strategies. We were interested to know from the sample respondents about the status of fishing gears and other equipments. The information in this regard have been shown in table 14. The table portrays that 60% respondents have fishing equipments like gears, drying racks/ slabs, etc. But the rest of the respondents reported that they have no fishing gears, drying racks and the likes. It is admitted that lack of these resources hindered the smooth flow of catching of fish in study areas.

3.6 Financial Capital

Financial capital includes all the financial resources, which are available to the people as well as will provide resources various options of livelihoods. These are mainly savings, supplies of credit and other different types of remittances. It is noted that all other capital assets viz. human capital physical capital, natural capital are dependent on financial capital of rural poor people Further, financial capital covers different types of credit. This credit may be two types viz. formal credit and informal credit. The survey data reveal that the share of non-institutional and institutional credits are 68.4% and 22.6% respectively (Table 15). The table further shows that 9% of the sample respondents did not enjoy any loan. It is reported that in supplying credit, 'dadandar' dominates in fish distribution system whereas poor fishermen have no voice in selling their produces. As a result, they are deprived of fair prices for their products.

The above analysis shows that natural capital of coastal fisherman is decreasing day by day because of fish catching is declining as well as homestead of fisherman is loosing due to erosion of soil through river. Again physical capital of coastal fisherman like boats, nets, transport facilities are decreasing due to lack of repairing and maintaining facilities on account of financial handicaps. In some study areas like Kuakata, communication linkage is being hindered owing to the

non-availability of mobile phone networks. Further, uncertainty of income and absence of alternative income generating activities, fishermen are deprived of adequate food and other necessaries for their livelihoods. An analysis of causes of change in the approach of their livelihood can help to identify the factors that help people to rise above the poverty line. This may develop a network for combination of available capital assets and utilization of the same in developing dynamic strategies for the coming years in order to ensure better livelihood system for the poor people of coastal fishing communities of Bangladesh.

4. VULNERABILITY ISSUES IN THE CONTEXT OF THE POOR

The vulnerability context is the group of factors operating in the external environment and affect peoples' life and livelihoods directly or indirectly. These factors are summarized in three categories such as shocks, trends and seasonality.

4.1 Shocks

All the study areas are affected by cyclones, floods, tidal surge, etc. The study areas were damaged severely by the cyclones of 1964, 1970, and 1991 respectively. Many lives are lost and physical assets of fishermen are wiped out by these natural disasters. It has been reported that fishing gear, boats, and nets have been lost by these natural calamities. Moreover, communication linkages like roads, bridges, and transports have been damaged by these unpredictable events.

4.2 Trends

There is a long term negative trend of resource depletion in the study areas. It has been further reported that environmental degradation, pollution of water resources, habital destruction through aggressive fishing methods are the main causes for the declining trend of fish resources in study areas. Further, use of mechanized fishing technologies create monopoly markets for rich fishermen. Again it has been reported that big business magnets have emerged in the sea with high technologies. As a result, poor fishermen have been ousted from the sea in catching of fishes. Thus, these trends have negative impact on the livelihoods of marginalized fishermen in the study areas who depend on indigenous technologies for fish drying, salting and smoking.

4.3 Seasonality

Seasonality influences peoples' access to natural resources and livelihood outcomes. Generally, fishing season continues during the period of rainy months.

It has been reported that fish catching is the mode of employment for the people of the coastal areas only. In the rainy season, fresh fish marketing is hindered due to lack of modern road and communication system. Again sun drying is not possible in the rainy season. Further, hilsha is a seasonal product and its harvesting continues from mid July to mid November. Fishing villages are crowded by interested groups like dadondar, bepari, faria, and other interest groups during this period. But poor fishermen can not earn more due to limitation of their equipments. So, the seasonality adversely affects the livelihood of the poor fishermen.

5. CONCLUSION

Bangladesh has enormous potentialities in terms of natural resources endowments like fishery for the development of fishing communities. Again, sustainable livelihood approach is a process for linkage between micro and macro levels i.e. community level i.e. linkage among local community, government initiative, non-government organization and private sector. Again, lack of dynamic policy may affect the livelihood of poor people adversely. But for ensuring better livelihood, it needs effective multi - dimensional coordination programs of the concerned institutions, policies of the government and natural resources base of the coastal areas of the country. Dynamic policies will mitigate the negative impact of trend, shocks and seasonality and thus it will reduce the vulnerability issues of poor coastal fishermen. The livelihood process will create opportunities for more income as well as improve the resource base of the poor people of coastal areas. Moreover, institutions involved in income generating activities and other support services may work in close cooperation among themselves for development of sustainable livelihoods system and thus the process will ensure more sustainable use of natural resource base of coastal fishing communities of Bangladesh.

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Appendix

Table 1 : Break–up of Sample Villages

Name of District	Name of Villages	Muslim/Hindu Villages
Cox's Bazar	Hatkhola	Muslim village
Chittagong	Salimpur	Hindu village
Patuakhali	Koakata	Muslim villages
Patuakhali	Lebukhali	Muslim village
Bagerhat	Debraj	Muslim village
Satkira	Kullapara	Hindu village

Table 2 : Education in the Fisher's Family of Bangladesh

Characteristics	Gross percent	Male percent	Female percent
Literacy rate (7+)	30.8	35.5	25.4
Literacy rate (15+)	31.5	37.8	23.4
Education level		Head of family	Wife
Mean (yrs.)		2.28	1.48
Median		00	00
Mode		00	00
Skewness		1.34	1.74
Kurtosis		1.51	2.66
1st quartile		0	0
2^{nd} quartile		0	0
3^{rd} quartile		5	3

Table 3 : Distribution of Sample Population by Age

Age group	Percent (grand)	Chittagong	Cox's Bazar	Bagerhat	Patuakhali (Kuakata)	Patuakhali Lebukhali	Satkhira
<10	24.3	23.3	23.0	24.0	26.0	25.5	25.3
10-20	24.4	25.4	24.2	23.4	24.4	24.4	24.4
20-30	19.5	18.0	19.8	19.4	19.4	20.4	20.2
30-40	12.5	12.3	13.5	12.5	12.2	12.7	12.5
40-50	8.7	9.8	9.7	8.3	9.5	8.8	8.7
50+	10.9	12.9	13.2	12.4	12.3	13.1	12.9
Mean	25.1	26.6	26.4	25.3	24.9	25.1	24.1
	Total	Male	Female				
Mean age	51.1	25.8	23.0				
Median age	24.0	24.7	21.5				

Table 4 : Sex Composition of Household Members

Characteristics	Grand total	Male	Female
Total population	1430	755	675
Sex ratio	—	111.8	100
Mean family size	4.78	2.50	2.23
Mode	4	2	2
Std. Deviation	2.1	2.61	2.93

Table 5 : Land Distribution of Sample Respondents

Land Access	Number of Sample Respondents	Frequency in Percentage
Yes	258	86.0%
No	42	14.0%
Total	300	100.0%

Table 6 : Distribution of Sample Respondents According to Access in Water Resources

Water Access	Number of Sample Respondents	Frequency in Percentage
Yes	209	69.67%
No	91	30.33%
Total	300	100.0%

Table 7 : Distribution of Sample Respondents Based on Caste

Are You Affected by Caste System	Number of Sample Respondents	Frequency in Percentage
Yes	65	65.0%
No	45	45.0%
Total	100	100.0%

Table 8 : Marital Status of Sample Respondents

Marital Status	Number Sample Respondents	Frequency in Percentage
Unmarried	63	21.0%
Married	171	57.0%
Widow	15	5.0%
Divorced	51	17.0%
Total	300	100.0%

Table 9 : Family Size Distribution

Family size	Number of Families	Frequency in Percentage
1-2	42	14.0
3-4	109	36.3
5-6	111	37.0
7 and above	38	12.7
Total	300	100.0

Table 10 : Distribution of Sample Respondents Based on Religion

Religion	Number of Sample Respondents	Frequency in Percentage
Muslim	200	66.67%
Hindu	100	33.33%
Total	300	100.0%

Table 11 (a): Response Regarding Existence of Fisherman Association/Co-operatives in Selected Location

Response	Cox's Bazar	Chttagong (Salimpur) (Hatkhola)	Patuakhali (Kuakata)	Patuakhali (Lebukhali)	Bagerhat (Debraj)	Satkhira (Kullapara)	Total
Yes	46	48	35	39	42	29	239
No	0	0	0	0	0	0	0
Total	46*	48*	35*	39*	42*	29*	239*

Note: * Rest 4 fisherman in Cox's Bazar, 2 in Chittagong, 15 in Patuakhali (Kuakata), 11 in Patuakhali (Lebukhali), 8 in Bagerhat and 21 in Satkhira abstained in answering this question.

Table 11(b) : Whether Fisherman Belongs to the Association

Belonging	Cox's status	Chttagong Bazar (Hatkhola)	Patuakhali (Salimpur)	Patuakhali (Kuakata)	Bagerhat (Lebukhali)	Satkhira (Debraj)	Total (Kullapara)
Yes	44	41	33	30	28	27	203
No	2	7	2	9	14	2	36
Total	46	48	35	39	42	29	239

Table 11(c) : Fishermens' Comment About whether the Association is Beneficial to Him

Whether	Cox's beneficia 1 or not	Chttagong Bazar (Hatkhola)	Patuakhali (Salimpur)	Patuakhali (Kuakata)	Bagerhat (Lebukhali)	Satkhira (Debraj)	Total (Kullapara)
Yes	27	22	25	21	26	14	135
No	17	19	8	9	2	13	68
Total	44	41	33	30	28	27	203

Table 12 : Boat Owned by Sample Respondents

Boat Type	Number of Sample Respondents	Frequency in Percentage
With engine	73	24.3%
Without engine	90	31.3%
Both	8	1.4%
No boat	129	43.0%
Total	300	100.0%

Table 13 : Nets Owned by Sample Respondents

Number of Nets Owned	Number of sample Respondents	Frequency in Percentage
1-2	120	40.0%
3-6	28	9.3%
7-10	18	6.0%
11 and above	23	7.7%
No net	111	37.0%
Total	300	100.0%

Table 14 : Fishing Equipments (Fishing Gears) of Sample Respondents

Fishing Equipments	Number of sample Respondents	Frequency in Percentage
Yes	180	60.0%
No	120	40.0%
Total	300	100.0%

Table 15 : Sources of Loan of the Sample Respondents

Sources	Number of Sample Respondents	Frequency in Percentage
Informal Source:		
- Relatives	64	21.3%
- Friends	16	5.4%
- Mahazan	48	16.0%
- New dadandar	16	5.4%
- Old dadandar	21	7.0%
- Paiker	24	8.0%
- Goldsmith	16	5.3%
a) Total (Non-Institutional)	205	68.4%
Formal Sources:		
- Bank	16	5.3%
- NGO	39	13.0%
- Samity	13	4.3%
b)Total (Institutional)	68	22.6%
c)Not enjoyed the loan	27	9.0%
Grand Total (a+b+c)	300	100.0%